

The affordances of code-switching: a systematic review of its roles and impacts in multilingual contexts

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Abstract

Code-switching, the practice of alternating between languages or dialects within a conversation, plays a multifaceted role in multilingual contexts, particularly in education, communication, and cultural identity. This systematic review synthesizes existing research to explore the affordances of code-switching across diverse linguistic and sociocultural settings. The article examines its roles in enhancing comprehension, fostering learner engagement, and bridging cultural gaps, while also addressing its cognitive, pedagogical, and sociolinguistic impacts. Key findings reveal that code-switching serves as a powerful tool for facilitating bilingual and multilingual education, supporting identity negotiation, and promoting inclusivity in diverse environments. However, challenges such as stigmatization, policy constraints, and unequal power dynamics between languages are also highlighted. By analyzing patterns, trends, and implications from empirical studies, this review offers insights into best practices for leveraging code-switching as a resource in multilingual settings. It emphasizes the need for context-sensitive approaches and interdisciplinary collaborations to maximize its benefits while mitigating associated challenges.

Keywords: Code-Switching, Multilingualism, Bilingual Education, Sociolinguistics, Cultural Identity, Cognitive Impacts.

Introduction

In today's increasingly globalized and interconnected world, multilingualism has become a prevalent characteristic of many societies. As individuals navigate between languages for various purposes—whether in social, educational, or professional settings—code-switching has emerged as a common and strategic communicative practice. Code-switching, the practice of alternating between two or more languages or dialects within a conversation or discourse, is a phenomenon

that has long been a subject of interest within linguistics, sociolinguistics, and educational studies (Nazri & Kassim, 2023). While its prevalence is often observed in multilingual communities, the implications of code-switching extend beyond mere language alternation; it encompasses cultural identity, cognitive processes, social relationships, and educational outcomes (Alzain Alsheikhidris, 2024).

In the context of multilingual classrooms, code-switching has been utilized by educators and learners alike to facilitate understanding, enhance engagement, and bridge the linguistic and cultural gaps that may exist between different language groups (Modupeola, 2013). By drawing on multiple linguistic resources, code-switching enables individuals to express complex ideas, negotiate meaning, and adapt their language to suit their social context (Mona, 2024). Furthermore, it allows individuals to maintain their heritage languages and cultural identities, fostering a sense of belonging and empowerment (Devaki, 2024). However, code-switching is not without its complexities. In many formal educational settings, there is often a tension between embracing the fluidity of multilingual language practices and adhering to prescriptive monolingual norms (Shay, 2015). This can result in code-switching being perceived as a hindrance to linguistic purity or academic achievement.

Despite these challenges, research has highlighted several potential affordances of code-switching, particularly in educational and sociocultural contexts. It has been shown to support cognitive development by providing learners with the flexibility to access multiple linguistic systems, thus facilitating deeper cognitive processing (Nazri & Kassim, 2023). In pedagogical contexts, it has been leveraged as an effective tool for scaffolding students' comprehension, enhancing their participation, and supporting language development (Yıldız & Çelik, 2020). In social and cultural terms, code-switching provides individuals with a means of negotiating and expressing their identities, as well as navigating complex social dynamics and power structures (Nazri & Kassim, 2023).

While numerous studies have explored the role of code-switching in specific linguistic or educational settings, there remains a need for a comprehensive review that synthesizes the various roles and impacts of this phenomenon across different multilingual contexts (Mona, 2024). This systematic review seeks to fill this gap by examining the diverse affordances of code-switching, with a focus on its cognitive, pedagogical, and sociolinguistic implications. Through an analysis

of empirical studies and theoretical discussions, this review aims to provide a holistic understanding of how code-switching can be utilized as a valuable resource in multilingual environments. Moreover, it will address the challenges associated with its practice, including issues of stigmatization, language policies, and the potential for reinforcing power imbalances between languages.

Ultimately, this study intends to highlight the transformative potential of code-switching in multilingual settings, offering insights into how it can be strategically leveraged to support inclusive, equitable, and culturally responsive educational practices. By emphasizing the need for context-sensitive approaches to language use, the review advocates for a deeper recognition of code-switching as an essential tool for fostering linguistic diversity, promoting cognitive growth, and advancing educational equity in multilingual communities.

The Role of Code-Switching in Teaching and Learning

Code-switching, the practice of alternating between two or more languages or dialects within a single conversation or discourse, is a widely observed phenomenon in multilingual environments. In the context of teaching and learning, it holds significant pedagogical value, offering educators and learners a flexible and strategic tool for communication (Alzain Alsheikhidris, 2024). The role of code-switching in educational settings has become increasingly prominent as classrooms around the world become more linguistically diverse. This narrative explores the multifaceted role of code-switching in teaching and learning, examining its cognitive, social, and pedagogical benefits, as well as its challenges and implications for language policy.

Cognitive Benefits of Code-Switching in Education

One of the primary cognitive benefits of code-switching is that it enables learners to access and utilize their entire linguistic repertoire, facilitating better understanding and retention of information (Vilakazi, Mavuru & Ramaila, 2024). For students who speak more than one language, switching between languages allows them to draw on the strengths of each language (Masna, 2020). In instances where a concept or word is more easily understood or expressed in one language, code-switching provides a means of clarifying complex ideas. Research has shown that when learners use code-switching strategically, it can support their cognitive development by enabling them to engage with learning materials more effectively (Villaabrille et al., 2024). For example, a bilingual student might switch to their home language to clarify a challenging term in

a second language, thereby enhancing their comprehension and making connections between languages. In cognitive terms, code-switching has been linked to improved problem-solving skills, metalinguistic awareness, and executive function. By switching between languages, learners engage in a complex mental process that strengthens their cognitive flexibility (Andleeb, Asgher & Zimi, 2023). This process not only helps them navigate different linguistic systems but also improves their ability to switch between tasks, manage conflicting information, and focus attention—skills that are beneficial across various aspects of learning.

Pedagogical Applications of Code-Switching

In the classroom, code-switching can be a powerful pedagogical tool for bridging the gap between students' linguistic backgrounds and the academic language of instruction. Teachers in multilingual classrooms often face the challenge of ensuring that all students, regardless of their language proficiency, can access the curriculum. Code-switching can be used by educators to scaffold understanding, particularly when teaching complex concepts or when students are unfamiliar with the academic register of the language of instruction (Maluleke, 2019). For example, a teacher might introduce a difficult scientific concept in the language of instruction and then explain it in a students' home language to ensure comprehension. Moreover, code-switching can be a way to facilitate student participation and encourage a more inclusive classroom environment. In classrooms where students speak different languages, code-switching provides a means for them to feel comfortable, confident, and engaged in the learning process (Fauzi, 2023).

For students who may feel self-conscious or anxious about using a second language, the option to switch to their home language can reduce barriers to communication and promote a sense of agency in their learning. This sense of comfort can lead to increased participation and collaboration, allowing students to contribute meaningfully to class discussions and activities. Furthermore, code-switching can be instrumental in promoting language development in both the language of instruction and the students' home language. By using both languages in an educational context, learners can deepen their understanding of language structures, vocabulary, and cultural nuances (Hossain, 2024). This dual language exposure enhances students' overall linguistic competence, which is especially important for students in bilingual or multilingual settings.

Sociocultural and Identity Dimensions of Code-Switching

Code-switching also plays a significant role in the social and cultural dynamics of the classroom. In multilingual settings, language is not just a medium of communication but also a marker of identity. Students often use code-switching to navigate between different cultural and linguistic identities, allowing them to express their sense of belonging to both their home community and the broader educational environment (Mona, 2024). This dynamic is particularly evident in classrooms where students are from diverse backgrounds, each bringing their own linguistic and cultural perspectives. For students, code-switching offers a way to assert their identity while participating in academic and social interactions (Almagableh & Yunus, 2022). It enables students to negotiate meaning, build rapport, and establish connections with peers and teachers. For example, a student might switch to a familiar language when talking to a peer from the same linguistic background to strengthen the social bond, while using the language of instruction during formal discussions. This fluidity between languages can foster a sense of inclusivity and belonging in the classroom, as students feel that their linguistic identities are respected and valued. Moreover, code-switching can be an important tool for fostering cultural awareness and respect in the classroom. When teachers and students engage in code-switching, they acknowledge and validate the diverse linguistic and cultural backgrounds present in the classroom (Almagableh & Yunus, 2022). This recognition promotes cultural inclusivity and reduces the marginalization of students who might otherwise feel that their home languages and cultures are undervalued. By embracing code-switching, educators can create a classroom environment that celebrates diversity and encourages cross-cultural dialogue.

Challenges and Criticisms of Code-Switching in Education

Despite its numerous benefits, code-switching is not without its challenges and criticisms. In some educational contexts, particularly those that emphasize monolingualism or standard language use, code-switching can be seen as a disruptive or undesirable practice. Critics argue that code-switching may interfere with students' proficiency in the language of instruction and hinder their academic success, especially if it leads to over-reliance on home languages (Saligumba Maed & Barcelona, 2023). In some cases, there is a concern that code-switching may result in a lack of fluency in the language of instruction, particularly in formal writing and academic discourse (Zainil & Arsyad, 2021). Furthermore, some educational systems or policies may explicitly discourage code-switching in favour of promoting a single dominant language, which may

marginalize students who are non-native speakers or who speak minority languages (Ferguson, 2003). This can create a tension between the linguistic resources available to students and the educational expectations placed upon them. Teachers in such environments may face difficulty in balancing the use of code-switching with the need to uphold language proficiency standards.

Another challenge lies in the potential for unequal power dynamics between languages. In multilingual classrooms, there may be power imbalances between the languages spoken by students (Ticheloven et al., 2019) For instance, the dominant language in the classroom may be seen as more prestigious or authoritative, while students' home languages may be perceived as less important. This can lead to stigmatization of students who use code-switching, particularly if their home languages are viewed as inferior or not suited for academic purposes. The role of code-switching in teaching and learning is multifaceted and complex. It is a powerful tool that enhances cognitive flexibility, supports pedagogical strategies, fosters cultural identity, and promotes inclusivity in multilingual classrooms (Ulum, 2024). By leveraging code-switching, educators can create more accessible and engaging learning environments that respect the linguistic diversity of students. However, challenges such as linguistic stigmatization and policy constraints must be addressed to fully harness the potential of code-switching in educational settings. Ultimately, code-switching has the potential to transform teaching and learning by promoting a more holistic approach to language use, one that values students' linguistic repertoires and supports their academic and social development. As multilingualism continues to shape classrooms worldwide, embracing code-switching as a legitimate and valuable practice can help to create more inclusive, equitable, and effective educational experiences for all learners.

Research Problem

In multilingual contexts, code-switching has emerged as a prevalent and dynamic linguistic practice, particularly in educational, social, and professional environments. While the practice is widely acknowledged, its roles and impacts within various multilingual settings remain underexplored and often misunderstood. The complex nature of code-switching—spanning cognitive, pedagogical, social, and cultural domains—poses challenges for educators, linguists, and policymakers striving to understand its full potential and implications. Despite the growing body of literature on code-switching, there is a lack of a comprehensive, systematic review that consolidates the diverse affordances of this practice across multilingual contexts (Zhong, Ang &

Sharmini, 2023). While code-switching is frequently praised for its role in enhancing communication, facilitating learning, and fostering social inclusion, it is also subject to criticism, particularly in contexts where monolingual ideologies dominate (Nazri & Kassim, 2023). These criticisms raise questions about the extent to which code-switching can be used effectively as an educational tool, the cognitive benefits it provides, and its implications for language development and identity in multilingual environments.

The research problem centres on the need to systematically explore and synthesize the various roles, benefits, and challenges associated with code-switching, specifically in educational and sociocultural contexts. This includes addressing gaps in the literature regarding how code-switching impacts cognitive development, pedagogical practices, language acquisition, student engagement, and social identity. Additionally, there is a need to critically examine the contextual factors that influence the effectiveness and appropriateness of code-switching, such as language policies, power dynamics, and societal attitudes toward linguistic diversity. This study aims to fill this gap by providing a comprehensive review of the affordances of code-switching, identifying both its transformative potential and the challenges it presents, and offering evidence-based insights into how it can be leveraged for positive outcomes in multilingual classrooms and beyond.

Rationale for the Study

The practice of code-switching, the alternation between languages or dialects within discourse, is a key feature of multilingual environments. With increasing linguistic diversity, code-switching facilitates communication, enhances understanding, and fosters social integration. However, systematic analyses of its affordances in various domains, particularly education, remain limited (Mona, 2024). In multilingual classrooms, where students have varying proficiency levels in the language of instruction, code-switching bridges linguistic gaps, enhances comprehension, and promotes engagement (Lorenz, Krulatz & Torgersen, 2021). Despite these benefits, some educational systems resist code-switching, viewing it as a barrier to language proficiency in the dominant language (Moradi & Chen, 2022). This systematic review examines the roles and impacts of code-switching in multilingual education, exploring its implications for learning, identity formation, and language development. The study aims to provide insights into how code-switching can be optimized as a pedagogical tool while addressing issues of power, language

hierarchy, and identity. Additionally, it will investigate its cognitive effects on language acquisition, academic achievement, and metalinguistic awareness.

By synthesizing research findings, this study will offer a comprehensive framework for understanding code-switching's affordances and provide evidence-based recommendations for educators and policymakers. Ultimately, it seeks to advance inclusive, culturally responsive, and linguistically equitable educational practices that leverage multilingual students' linguistic resources while acknowledging potential challenges in implementation.

Sociolinguistic Theory of Code-Switching as a Theoretical Framework

The Sociolinguistic Theory of Code-Switching provides a crucial framework for examining the functions and impacts of code-switching in multilingual contexts (Coupland, 2016). This theory explains how individuals strategically alternate between languages or dialects within conversations based on social, cultural, and communicative factors (Cameron, 2009; Byrne, 2024). Far from being a random occurrence, code-switching reflects complex relationships between language, identity, and social context (Almelhi, 2020). Sociolinguistics explores the social functions of language, emphasizing how language use is shaped by social interactions, identities, and power structures. In multilingual environments, code-switching becomes a tool for navigating linguistic diversity, influenced by participants, setting, conversational topics, and communication goals. This theoretical lens helps interpret code-switching not just as a linguistic phenomenon but as a socially motivated act revealing insights into identity, power relations, and cultural expression. Code-switching serves several social functions (Coupland, 2016). Wei (2005) describes it as a conversational strategy for signalling shifts in social roles, marking emphasis, or aligning with specific groups. It enables multilingual speakers to express themselves more effectively, connect with diverse social groups, and navigate social hierarchies. In educational settings, students use code-switching to transition between academic and social discourse, adapting their language to suit different communicative situations (Villanueva & Gamiao, 2022). One of the key principles of the Sociolinguistic Theory is that language is central to identity negotiation (Coupland, 2016). Shay (2015) argues that bilingual or multilingual individuals use code-switching to assert their cultural identity and social affiliations. In multilingual classrooms, students employ code-switching to affirm their linguistic heritage, signal belonging, and foster solidarity with peers

(Mona, 2024). This practice, therefore, extends beyond mere communication, serving as a means of self-expression and social positioning.

The contextual nature of code-switching is another essential aspect of the Sociolinguistic Theory. Nazri and Kassim (2023) suggest that it is influenced by specific social factors such as setting, interlocutors, and discussion topics. In educational contexts, teachers may switch between languages to clarify concepts or facilitate comprehension, particularly in classrooms where students have varying proficiency in the dominant language of instruction. Code-switching thus acts as a bridge, enabling all students to engage in meaningful learning experiences. From a sociolinguistic perspective, this practice is not an indication of linguistic deficiency but a sophisticated communication strategy that allows speakers to leverage their full linguistic repertoire for effective interaction. In multilingual classrooms, code-switching helps students overcome language barriers, articulate complex ideas, and actively participate in discussions (Shinga & Pillay, 2021). By alternating between languages, speakers optimize clarity and minimize misunderstandings, enhancing the learning experience. The Sociolinguistic Theory also sheds light on power dynamics and language hierarchies that shape code-switching behaviour. In many multilingual societies, certain languages hold greater prestige, creating power imbalances among speakers (Alshihry, 2023). In educational settings, code-switching can either challenge or reinforce these hierarchies. Some students may use it to assert the legitimacy of minority languages, while others conform to dominant linguistic norms to gain social acceptance (Al-Qaysi, 2018). Examining code-switching through a sociolinguistic lens allows for a deeper understanding of how language use reflects broader societal inequalities.

Methodology

This study employed a systematic review methodology to synthesize and critically examine existing literature on the roles and impacts of code-switching in multilingual contexts. The systematic review methodology was deemed appropriate for this research as it provided a rigorous, transparent, and replicable approach to identifying, evaluating, and synthesizing research evidence across diverse studies. By employing this approach, the study aimed to highlight the affordances of code-switching, with a focus on its implications for teaching and learning in multilingual educational settings. The methodology was structured around the review process, inclusion and exclusion criteria, data extraction, analysis approach, and ethical considerations.

Review Process

The review process followed a structured framework that ensured comprehensive coverage of relevant literature, minimized bias, and ensured transparency in the data extraction and synthesis process. This process consisted of several key steps:

Formulation of Research Questions: The review began with the formulation of clear research questions that guided the literature search and analysis. These included:

- What are the roles of code-switching in multilingual contexts?
- What are the social, cognitive, and pedagogical impacts of code-switching in educational settings?
- How does code-switching facilitate or hinder communication, learning, and social integration in multilingual environments?

Literature Search Strategy: A systematic search strategy was developed to identify studies that focused on code-switching in multilingual contexts, particularly in educational settings. The following electronic databases were searched for relevant studies: ERIC (Education Resources Information Center), JSTOR, Scopus, Google Scholar, and other relevant social science and linguistics databases. The search was limited to peer-reviewed journal articles, conference proceedings, and academic books published in the last two decades to capture the most current research on code-switching.

Keywords and Search Terms: A combination of keywords was used to retrieve relevant studies.

These included:

- Code-switching, bilingualism, multilingualism
- Language in education, pedagogical strategies, teaching and learning
- Social identity, language policy, language practices
- Cognitive benefits, communication strategies

Inclusion and Exclusion Criteria: Studies were included if they met the following criteria:

- Focus on code-switching in multilingual contexts (specifically in educational settings)

- Published in English, Spanish, French, or other languages commonly used in multilingual education research
- Empirical studies, theoretical papers, or literature reviews
- Published between 2000 and the present to ensure the inclusion of recent research
- Addressed roles and impacts of code-switching on teaching, learning, or socialization

Exclusion criteria included:

- Studies not focused on educational settings or multilingual contexts
- Studies focusing on single-language or monolingual contexts
- Non-peer-reviewed articles, opinion pieces, and grey literature
- Articles published prior to 2000 (unless they were seminal works critical to understanding code-switching)

Data Extraction

Once relevant articles were identified, a standardized data extraction form was used to systematically collect key information from each study. This form captured the following data:

Study Characteristics: Author(s), year of publication, study location, and context (e.g., primary/secondary school, higher education, workplace).

Research Design: Type of study (qualitative, quantitative, mixed methods), sample size, participant demographics (e.g., age, language background), and methods used to analyze code-switching.

Focus of Study: The primary focus of the study (e.g., cognitive effects, communicative functions, pedagogical outcomes, social identity).

Key Findings: Specific roles of code-switching, its impacts on learning, communication, and identity, and its affordances in multilingual education.

The data extraction also included information about the theoretical frameworks used in each study, such as sociolinguistic theories, bilingualism models, and educational theories. This

enabled a comparative understanding of how different theoretical lenses shaped the interpretation of code-switching.

Data Analysis and Synthesis

The analysis followed a thematic synthesis approach, which was particularly suitable for a systematic review that included qualitative, quantitative, and mixed-methods studies. This approach allowed for the identification and organization of common themes and patterns across studies while recognizing the diversity in research findings.

Thematic Coding: The extracted data was coded according to key themes related to the affordances of code-switching. These themes included:

- Communication and interaction
- Cognitive benefits (e.g., enhanced comprehension, critical thinking)
- Social identity and belonging
- Pedagogical strategies and learning outcomes
- Language policy and social dynamics

Descriptive Synthesis: The findings were grouped according to the identified themes, and a descriptive synthesis provided an overview of the roles and impacts of code-switching. This step summarized how code-switching contributed to communication, learning, and identity development in multilingual contexts.

Meta-analysis: If sufficient quantitative data was available, a meta-analysis was conducted to statistically assess the overall effect of code-switching on learning outcomes. Effect sizes were calculated to evaluate the impact of code-switching on academic achievement, student engagement, and language proficiency.

Comparative Analysis: A comparison of studies was conducted to highlight differences and similarities in the findings. This analysis examined how the roles and impacts of code-switching varied across different multilingual contexts (e.g., primary vs. secondary school, urban vs. rural settings).

Quality Assessment

Each study included in the review underwent a quality assessment to evaluate its methodological rigor and relevance to the research questions. The Critical Appraisal Skills Programme (CASP) checklist was used to assess the quality of qualitative and quantitative studies. Studies that did not meet basic quality standards were excluded from the final synthesis.

Ethical Considerations

Although this study involved the secondary analysis of published literature, ethical considerations remained important. The following ethical practices were adhered to:

Transparency and Rigor: The systematic review followed established guidelines for conducting systematic reviews, such as the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, to ensure that the process was transparent, systematic, and rigorous.

Proper Citation and Acknowledgment: All studies included in the review were properly cited, and appropriate credit was given to the original authors.

Limitations: The study transparently reported any limitations in the review process, such as potential biases in the selection of studies, publication bias, or language barriers in accessing non-English literature.

Limitations

While the systematic review methodology was comprehensive, it had some limitations. The availability of literature in different languages may have limited the scope of the review, as it could be biased towards English-language studies. Additionally, the reliance on published studies meant that unpublished or grey literature, which could provide alternative perspectives, was excluded from the review.

Interpretation and Reporting

The results of the systematic review were interpreted in relation to the research objectives, with a focus on the implications for theory, educational practice, and future research. The findings were presented in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, ensuring transparency, comprehensiveness, and replicability. This process included detailed documentation of the search strategy, study selection procedure, and data synthesis methods. The PRISMA flow diagram (Figure 1) visually summarizes the study

selection process, highlighting the steps involved in identifying, screening, and including studies for the review.

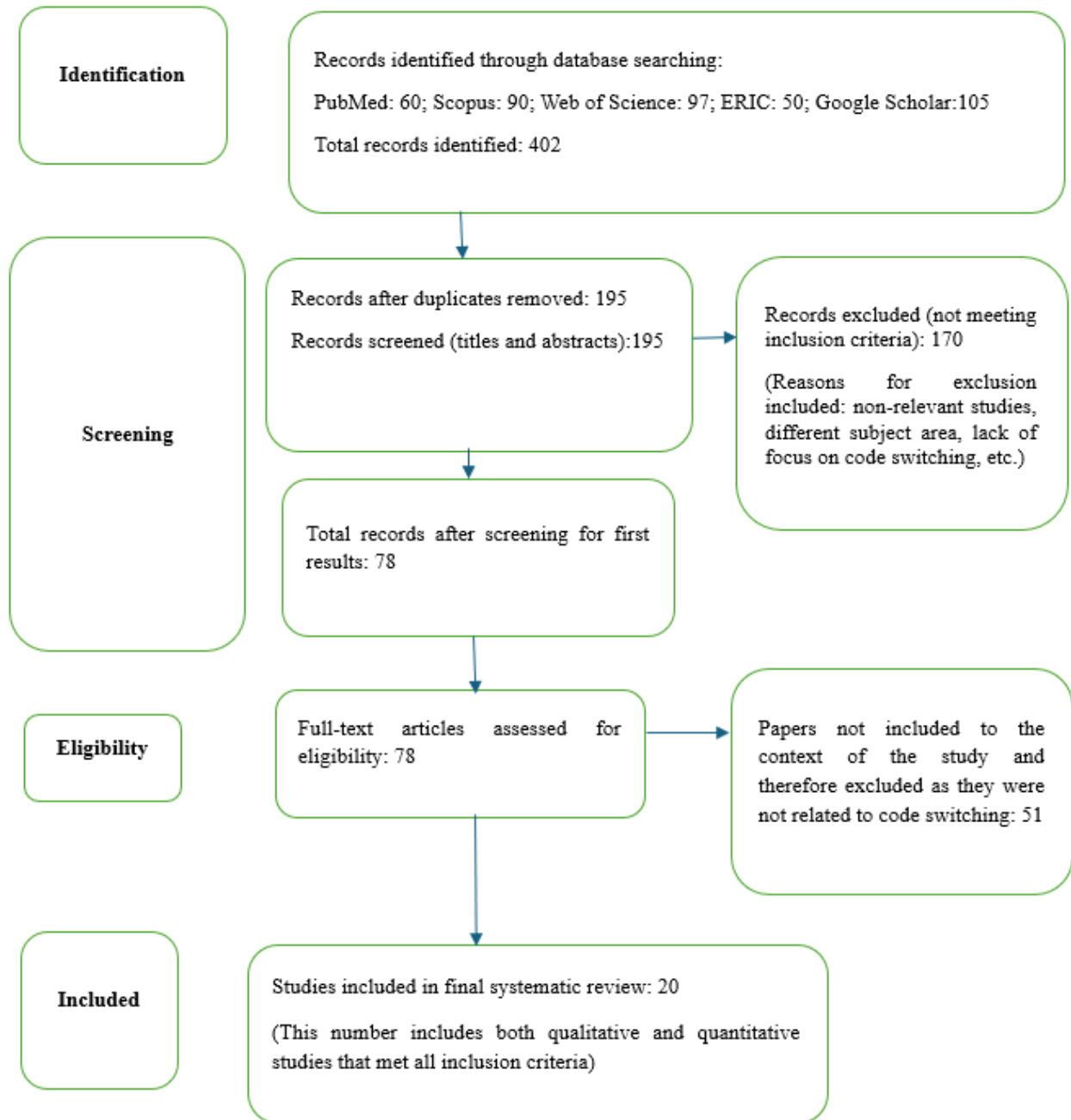


Figure 1: PRISMA flow diagram for the study

The systematic review methodology outlined in this section ensured a rigorous and comprehensive analysis of the affordances of code-switching in multilingual contexts. By systematically synthesizing empirical studies, the review provided a comprehensive understanding of the roles

and impacts of code-switching in educational and social contexts, highlighting its significance as a communicative and pedagogical tool.

Findings

Table 1 summarizes key studies on code-switching, outlining the study design, findings, roles of code-switching, impacts on learning, and the theoretical frameworks used in each study. The studies cover a range of methodologies including qualitative, quantitative, and mixed methods research. Below is an explanation of the table's columns:

Study: The author(s) and year of the study.

Study Design: The research methodology used in the study (e.g., qualitative, quantitative, mixed methods).

Key Findings: The main results or discoveries made in the study, such as the role of code-switching in aiding comprehension or promoting interaction.

Roles of Code-Switching: This column highlights how code-switching is utilized in the classroom, such as a communication tool, pedagogical tool, or means of enhancing social identity.

Impacts on Learning: This column details the effects that code-switching had on students' learning experiences, such as improved comprehension, engagement, academic achievement, or collaboration.

Theoretical Framework: The theories that informed the study, such as Sociolinguistic Theory, Vygotsky's Social Constructivism, or Cognitive Load Theory.

Table 1: Summary of key studies

Study	Study Design	Key Findings	Roles of Code-Switching	Impacts on Learning	Theoretical Framework
Alzain Alsheikhidris (2024)	Qualitative	Code-switching aids comprehension	Communication, Identity	Enhanced understanding and interaction	Sociolinguistic Theory
Sakaria & Priyana (2018)	Mixed methods	Teachers use code-switching for clarification	Cognitive benefits	Improved academic achievement	Bilingualism Theory
Jegede (2024)	Quantitative	Code-switching enhances peer interactions	Pedagogical tool	Boosted collaboration and engagement	Vygotsky's Social Constructivism

Aprilianti & Baa (2024)	Qualitative	Code-switching promotes inclusive language practices	Interaction, Communication	Increased social integration	Sociocultural Theory
Saligumba & Barcelona (2023)	Mixed methods	Code-switching facilitates academic discussions	Cognitive benefits	Improved student participation	Constructivist Learning Theory
Nawal (2018)	Quantitative	Code-switching supports comprehension of academic language	Academic language acquisition	Increased academic performance	Cognitive Load Theory
Mushtaq & Rabbani (2021)	Qualitative	Code-switching enables better understanding of complex concepts	Pedagogical tool	Increased comprehension	Social Learning Theory
Novianti, Said & Said (2021)	Mixed methods	Code-switching enhances teacher-student communication	Communication	Strengthened teacher-student relationship	Interactionist Theory
Auer (2005)	Quantitative	Code-switching fosters a sense of belonging	Social identity	Improved student motivation	Identity Theory
Mona (2024)	Mixed methods	Code-switching bridges language gaps in multilingual classrooms	Language comprehension	Improved student engagement	Bilingual Education Theory
Ghaderi et al (2024)	Qualitative	Code-switching facilitates peer learning	Socialization	Enhanced group collaboration	Vygotsky's Zone of Proximal Development
Bhuttah et al (2024)	Quantitative	Code-switching facilitates deeper learning	Critical thinking	Improved critical thinking skills	Cognitive Development Theory
Olivera (2021)	Qualitative	Code-switching helps to build academic confidence	Identity, Social integration	Increased student confidence	Social Identity Theory
He et al (2023)	Mixed methods	Code-switching fosters collaborative problem-solving	Collaboration, Communication	Increased collaborative learning	Social Constructivism Theory

Aparece & Bacasmot (2023)	Quantitative	Code-switching boosts language proficiency	Language acquisition	Enhanced academic language skills	Sociocultural Theory
Linvill (2014)	Qualitative	Code-switching promotes engagement with the subject matter	Engagement	Improved student interest	Motivation Theory
Maluleke (2019)	Mixed methods	Code-switching supports problem-solving activities	Problem-solving	Strengthened problem-solving abilities	Constructivist Learning Theory
Simasiku, Kasanda & Smit (2015)	Quantitative	Code-switching helps students with limited language proficiency	Language support	Improved understanding of subject content	Vygotsky's Sociocultural Theory
Narayana (2024)	Qualitative	Code-switching aids in transitioning between languages	Cognitive benefits	Increased flexibility in learning	Bilingualism Theory
Eden, Chisom & Adeniyi (2024)	Mixed methods	Code-switching enhances intercultural communication	Intercultural communication	Strengthened cultural awareness	Social Constructivist Theory

Discussion of the Key Themes that Emerge from the Studies

The studies summarized in Table 1 explored various ways in which code-switching influences learning in diverse educational contexts. Below is a discussion of the key themes that emerge from these studies:

1. Role of Code-Switching in Communication and Identity

Many studies emphasize the role of code-switching in enhancing communication between students and teachers or among peers. Code-switching is often used by teachers to clarify complex concepts (Sakaria & Priyana, 2018), facilitate understanding (Mushtaq & Rabbani, 2021), and bridge language gaps in multilingual classrooms (Mona, 2024). This highlights its role as a pedagogical tool for improving academic comprehension. In addition, code-switching is seen as a means of fostering a sense of belonging and supporting social integration, especially in multilingual or

multicultural classrooms (Auer, 2005; Aprilianti & Baa, 2024). Code-switching also helps students build academic confidence, as it allows them to navigate their identity while engaging with complex academic content (Olivera, 2021). Theoretical frameworks such as Sociolinguistic Theory (Alzain Alsheikhidris, 2024) and Bilingual Education Theory (Mona, 2024) are instrumental in understanding how code-switching can be a bridge between languages, allowing students to make sense of their learning environments and, in turn, improve their academic engagement.

2. Cognitive and Pedagogical Benefits

Code-switching's role as a cognitive tool is well-documented. Several studies point to its positive impact on students' academic performance by enhancing comprehension, especially in subjects that require complex language proficiency (Nawal, 2018; Bhuttah et al., 2024). The ability to switch between languages can lighten cognitive load and provide clarity when understanding academic language (Nawal, 2018). For example, code-switching can improve students' understanding of subject content by allowing them to relate unfamiliar concepts to their native language (Simasiku et al., 2015). Additionally, code-switching is shown to promote peer interaction, which is crucial for collaborative learning (Jegade, 2024; Ghaderi et al., 2024). By facilitating communication and boosting peer engagement, it strengthens social learning and helps students solve problems together (He et al., 2023). Theoretical perspectives like Vygotsky's Social Constructivism and Sociocultural Theory underscore the importance of social interaction and its role in cognitive development. These theories illustrate how code-switching enables students to negotiate meaning and actively participate in their learning communities.

3. Improved Engagement and Motivation

Code-switching is not only beneficial for understanding and collaboration, but it also plays a significant role in boosting students' motivation and engagement with the subject matter. Studies such as Linvill (2014) suggest that code-switching increases student interest by providing a more relatable and accessible approach to learning. This is particularly evident in subjects that students may find challenging, as the ability to express ideas in different languages can create a more inclusive and engaging classroom environment. By aligning with Motivation Theory, these studies highlight how code-switching fosters a learning environment where students feel more connected to the material and are more likely to actively participate in class activities.

4. Social and Cultural Impacts

Several studies underscore the role of code-switching in promoting social integration and intercultural communication. In multilingual classrooms, code-switching helps students feel more included by allowing them to express themselves in a language they are more comfortable with, which can facilitate smoother interactions and better social integration (Aprilianti & Baa, 2024). This is reflected in the Identity Theory and Social Identity Theory, which explain how language use is tied to personal and group identity, influencing student motivation and a sense of belonging. Moreover, code-switching plays a key role in promoting intercultural communication (Narayana, 2024) and cultural awareness (Mona, 2024), demonstrating that the use of multiple languages in the classroom can support broader cultural understanding and contribute to a more globally aware student body.

5. Theoretical Frameworks

The studies highlight a diverse range of theoretical frameworks that explain the impact of code-switching on learning. Sociolinguistic Theory (Alzain Alsheikhidris, 2024), Bilingualism Theory (Narayana, 2024), and Cognitive Load Theory (Nawal, 2018) provide insights into how language-switching reduces cognitive strain and enhances comprehension. Meanwhile, Vygotsky's Social Constructivism and Sociocultural Theory (Jegede, 2024; Ghaderi et al., 2024) frame code-switching as a tool that supports social interaction, peer learning, and cognitive development through collaboration. These theoretical lenses underscore the dynamic relationship between language, cognition, and social interaction in fostering student success.

In summary, code-switching serves as a versatile and powerful tool in education, impacting communication, comprehension, engagement, and social integration. It facilitates cognitive and pedagogical benefits by supporting language acquisition and enhancing understanding, particularly in complex academic content. The use of code-switching fosters a sense of belonging and helps students develop academic confidence, while also promoting collaboration and problem-solving skills. Theoretical frameworks such as Sociolinguistic Theory, Vygotsky's Social Constructivism, and Bilingualism Theory provide valuable insights into how code-switching supports various aspects of student learning and development. These findings suggest that educators can leverage code-switching as a strategic pedagogical tool to enhance student engagement, cognitive development, and social integration in diverse educational settings.

Gaps in Existing Literature

Despite the wealth of research on the role of code-switching in enhancing educational outcomes, several gaps remain in the existing literature. While various studies highlight the positive effects of code-switching on comprehension, communication, social integration, and critical thinking, the following gaps have been identified:

Limited Longitudinal Studies

Most of the studies summarized in Table 1 are cross-sectional, focusing on the immediate or short-term impacts of code-switching. While these studies provide valuable insights into its role in the classroom, there is a lack of longitudinal research that tracks the long-term effects of code-switching on student learning, language development, and academic performance. For instance, while studies like Nawal (2018) and Bhuttah et al. (2024) demonstrate the immediate cognitive benefits of code-switching, there is little exploration of whether these benefits persist over time. Longitudinal studies would provide a more comprehensive understanding of how code-switching contributes to sustained learning outcomes and academic success.

Lack of Focus on Contextual Variability

The studies presented in Table 1 span a range of educational contexts, from multilingual classrooms (Mona, 2024) to diverse social settings (Auer, 2005). However, there is limited exploration of how contextual factors—such as classroom dynamics, cultural backgrounds, and institutional policies—shape the use of code-switching and its effectiveness. Code-switching may have different impacts depending on the specific linguistic and cultural environment, yet the literature does not fully address how these contextual differences influence its role in learning. For example, the effectiveness of code-switching in a bilingual education setting (Mona, 2024) may differ significantly from its use in a multilingual classroom (Aprilianti & Baa, 2024), suggesting a need for research that considers the variability of contexts in which code-switching is used.

Limited Focus on Specific Disciplines

While many studies focus on the general academic benefits of code-switching (e.g., in language comprehension, social integration, and critical thinking), there is a gap in understanding its discipline-specific impact, especially in Science, Technology, Engineering, and Mathematics (STEM) fields. Few studies address how code-switching may facilitate the understanding of

complex subject-specific terminology or concepts in fields like physics or mathematics. Given the growing interest in integrating coding and robotics into STEM education, research exploring how code-switching supports academic language acquisition and content mastery in these fields would be highly valuable. A targeted focus on STEM disciplines may uncover the nuanced role of code-switching in promoting subject-specific learning, particularly for students with limited proficiency in the academic language of these fields.

Underrepresentation of Student Perspectives

While studies such as Mushtaq and Rabbani (2021) and Olivera (2021) examine the pedagogical benefits of code-switching, there is insufficient research from the students' perspective on how they perceive its role in their learning process. Most existing studies focus on teachers' or researchers' views, with limited exploration of how students feel about the use of code-switching and whether they find it beneficial. Research that includes student feedback on the impact of code-switching on their motivation, confidence, and engagement could provide deeper insights into its effectiveness and how students navigate their identities through language use. This would complement existing studies that emphasize academic and cognitive benefits by offering a more holistic view of the learning experience.

Exploration of Negative Impacts

Most studies highlight the positive impacts of code-switching on learning and socialization (e.g., Saligumba & Barcelona, 2023; Bhuttah et al., 2024). However, there is a noticeable lack of research on the potential negative consequences of code-switching. For instance, in certain educational settings, excessive reliance on code-switching could lead to language interference, miscommunication, or students' overdependence on their native language, potentially hindering their full engagement with the academic language. Additionally, the overuse of code-switching could reinforce language barriers rather than eliminate them, particularly if students do not transition back to the academic language when appropriate. Future research could explore both the positive and negative consequences of code-switching, providing a more balanced perspective on its impact on learning.

Role of Code-Switching in Higher Education

While most studies focus on primary or secondary education, the role of code-switching in higher education contexts remains underexplored. Research that investigates how university students use code-switching to navigate complex academic content, particularly in academic writing or oral presentations, would provide valuable insights into its role in more advanced stages of learning. Furthermore, higher education institutions often have diverse student populations, and code-switching might serve as an important strategy for academic success in such settings. Studies that explore code-switching in university-level classrooms—especially in disciplines with high linguistic demands—could reveal how it helps students engage with academic content and overcome language barriers in a globalized education system.

Integration with Emerging Educational Technologies

With the increasing integration of digital tools in education, there is a gap in understanding how code-switching interacts with emerging educational technologies, such as interactive learning platforms, coding programs, and online collaboration tools. Research could explore how code-switching in digital learning environments influences student engagement, collaboration, and understanding of subject matter. For example, in STEM fields, where students are expected to engage with both academic language and technical language, code-switching may provide a bridge for understanding both aspects. Examining the synergy between code-switching and digital learning technologies could help optimize pedagogical approaches in contemporary educational settings. While existing studies on code-switching in education provide valuable insights into its role in enhancing comprehension, communication, and cognitive development, several gaps remain. Future research should focus on longitudinal studies, contextual variability, discipline-specific impacts, student perspectives, potential negative effects, and the integration of emerging educational technologies. Addressing these gaps will deepen our understanding of code-switching's role in promoting inclusive, effective, and sustainable learning experiences in diverse educational settings.

Future Research Directions

Based on the findings from the studies summarized in Table 1, several important directions for future research on code-switching in education emerge. These research directions aim to deepen our understanding of code-switching's role in diverse learning environments, expand its theoretical

frameworks, and explore its potential for enhancing educational outcomes across various educational contexts. Below are some key areas for future research:

Longitudinal Studies on the Impact of Code-Switching

While many studies have demonstrated the immediate benefits of code-switching in improving comprehension, communication, and collaboration, there is a need for longitudinal research to assess the long-term impacts of code-switching on student learning and academic success. Studies like those by Nawal (2018) and Bhuttah et al. (2024) indicate the positive effects of code-switching on academic performance and critical thinking, but these studies do not track how these effects evolve over time. Longitudinal studies could explore whether the benefits of code-switching persist beyond the classroom, influencing long-term academic achievement, language proficiency, and social integration.

Exploration of Code-Switching in Multidisciplinary Contexts

Many of the studies highlighted in Table 1 focus on general academic benefits, with limited exploration of code-switching within specific disciplines, particularly in fields like STEM. There is a clear gap in understanding how code-switching supports the learning of subject-specific content, such as technical vocabulary and complex concepts in STEM education. Future research could explore how code-switching helps students navigate the specialized language of these disciplines, particularly in multilingual or bilingual classrooms where students may be engaging with both academic language and technical jargon. This would offer valuable insights into how code-switching can be optimized for subject-specific learning.

Student-Centred Research: Voices of Learners

The studies included in Table 1 largely focus on the perspectives of teachers or researchers regarding the use of code-switching. However, there is a notable absence of research that directly explores students' experiences with code-switching in the classroom. Future research should prioritize student-centred studies that examine how learners perceive the use of code-switching in their own learning. Research exploring student motivations, engagement, and their sense of identity in the context of code-switching could provide valuable insights into the pedagogical effectiveness of this practice. This research could also explore whether students view code-switching as a supportive learning tool or as a potential barrier to mastering academic language.

Cross-Cultural and Cross-Linguistic Studies

Code-switching is often studied in specific linguistic or cultural contexts, such as bilingual or multilingual classrooms. However, more research is needed that examines how code-switching operates across different cultural and linguistic settings. For instance, Mona (2024) explores code-switching in multilingual classrooms, but there is little research comparing the role of code-switching in monolingual versus multilingual educational contexts. Cross-cultural and cross-linguistic studies could explore how different cultures perceive and utilize code-switching and how this affects student outcomes. This would help develop a more nuanced understanding of the global applicability of code-switching in diverse educational settings.

Negative Consequences of Code-Switching

Most of the studies reviewed emphasize the positive impacts of code-switching, such as increased comprehension, collaboration, and academic performance. However, the potential negative effects of code-switching remain underexplored. Future research could investigate the possible downsides of code-switching, such as its impact on language proficiency, potential overreliance on the native language, or confusion in complex academic contexts. For example, while code-switching might help students understand a lesson in the short term, it may hinder their ability to fully engage with the academic language in the long run. Research should also explore whether the overuse of code-switching can result in students becoming disengaged from the learning process or impede their development of fluency in academic language.

The Role of Code-Switching in Technology-Enhanced Learning Environments

As educational technology continues to evolve, there is a need to explore how code-switching interacts with digital learning tools and platforms. In classrooms that incorporate technology, such as interactive learning platforms, coding programs, and online collaboration tools, code-switching may play a crucial role in supporting student engagement and understanding. Future research could investigate how code-switching can enhance learning in virtual or hybrid learning environments, particularly in terms of facilitating communication, fostering collaborative problem-solving, and promoting cognitive development. Additionally, this research could explore how technology-mediated code-switching might address issues of language proficiency and inclusivity.

Code-Switching as a Pedagogical Strategy

While many studies recognize code-switching as a pedagogical tool (e.g., Jegede, 2024; Mushtaq & Rabbani, 2021), there is limited research on how teachers can strategically incorporate code-switching into lesson planning and classroom instruction. Future studies could investigate best practices for using code-switching as an intentional instructional strategy to enhance student learning. This research could focus on creating frameworks for teachers to use code-switching to scaffold learning, provide clarification, and foster an inclusive and engaging classroom environment. Additionally, teacher training programs could benefit from research on how to effectively implement code-switching in diverse educational settings.

Investigating Code-Switching in Higher Education

While much of the research focuses on primary and secondary education, there is a gap in the literature regarding code-switching in higher education. In universities and colleges, students often face high cognitive demands, including understanding complex academic content and engaging in scholarly discourse. Code-switching could play a significant role in supporting students' understanding of difficult concepts, especially in fields that require both technical and academic language. Future research could explore how code-switching affects students' academic language proficiency, their ability to participate in academic discussions, and their overall academic success in higher education. Future research on code-switching in education should seek to expand beyond the current focus on its immediate cognitive and social benefits. Key areas for exploration include longitudinal studies to track the long-term impacts, discipline-specific research in STEM, student-centred perspectives, cross-cultural comparisons, and the potential negative effects of code-switching. By exploring these future directions, researchers can deepen our understanding of how code-switching can be strategically used to enhance learning outcomes, promote inclusivity, and support the diverse linguistic needs of students in various educational contexts.

Implications for meaningful teaching and learning

Code-switching, the practice of alternating between languages or dialects within communication, holds significant potential as a pedagogical tool in multilingual educational settings. Based on the findings from the systematic review, this narrative discusses the implications for meaningful teaching and learning, with particular focus on how code-switching can be strategically employed to enhance educational outcomes in multilingual classrooms.

One of the key affordances of code-switching identified in the studies is its ability to enhance comprehension and cognitive engagement, particularly for students navigating academic language that may be complex or unfamiliar. Studies such as those by Nawal (2018) and Alzain Alsheikhidris (2024) demonstrate how code-switching facilitates students' understanding of academic concepts by enabling teachers to clarify complex terms, bridge language gaps, and provide explanations in a language students are more comfortable with. In multilingual classrooms where students have varying levels of proficiency in the instructional language, code-switching becomes a tool that allows teachers to scaffold learning effectively. The implication for teaching practice is clear: educators can leverage code-switching as a strategy to support comprehension, reduce cognitive load, and enhance students' ability to engage with complex subject matter, ultimately fostering a deeper understanding of the content.

Code-switching plays a critical role in supporting social integration and identity formation, as highlighted by several studies, including Aprilianti and Baa (2024) and Auer (2005). By allowing students to express themselves in their native languages or dialects, code-switching fosters a sense of belonging and encourages inclusivity within the classroom. This is especially important in diverse, multilingual settings, where students may struggle to connect with peers or educators due to language barriers. Code-switching enables students to maintain their cultural identities while participating in academic discourse, which has positive implications for their emotional and social development. For educators, this underscores the importance of creating a classroom environment where students feel valued and supported, and where their linguistic diversity is viewed as an asset rather than a hindrance to learning.

Another key finding from the review is the role of code-switching in promoting collaborative learning and enhancing peer interactions. Studies by Jegede (2024) and Ghaderi et al. (2024) illustrate how code-switching facilitates communication between peers, especially when students share a common language outside of the academic setting. By encouraging students to switch between languages, educators can create opportunities for students to collaborate more effectively, discuss complex concepts, and solve problems together. This approach not only boosts academic performance but also fosters a sense of community and teamwork among students. Teachers should consider incorporating group activities that allow for code-switching to support

peer learning, collaboration, and the development of social learning skills, thereby enhancing the overall learning experience.

Effective communication between teachers and students is crucial for fostering a positive learning environment and promoting academic success. Studies like those by Novianti, Said and Said (2021) and Simasiku, Kasanda and Smit (2015) show that code-switching enhances teacher-student communication by enabling teachers to clarify instructions, explain concepts, and provide feedback in a language that is accessible to students. This helps bridge the gap between the teacher's language proficiency and the students' understanding. Teachers can use code-switching to offer personalized support and make complex ideas more comprehensible. The implication for meaningful teaching is that educators should be trained to use code-switching effectively as part of their instructional repertoire, especially in diverse classrooms, to ensure clear and inclusive communication that meets the needs of all learners.

Code-switching can also serve as an effective tool to encourage student participation and engagement in the learning process. As indicated by studies like Saligumba and Barcelona (2023) and Mona (2024), students are more likely to engage actively in classroom discussions when they feel confident using both their academic and native languages. Code-switching creates a more comfortable environment for students, enabling them to participate in discussions, ask questions, and express their thoughts without fear of linguistic barriers. Teachers can use code-switching as a strategy to invite students into the learning process, especially those who might otherwise be hesitant to contribute due to language anxiety. By promoting active participation through code-switching, educators can create more inclusive and dynamic learning environments.

While code-switching can help students engage with content, it also plays a significant role in language acquisition and the development of academic language proficiency. The review shows that code-switching supports students in acquiring new vocabulary and academic language skills, as evidenced by studies such as those by Aparece and Bacasmot (2023) and Nawal (2018). By providing context for academic terms and reinforcing learning in a familiar language, code-switching helps students transition between languages more smoothly. Teachers should be mindful of how they incorporate code-switching into instruction, ensuring that it serves as a tool for both language support and academic development. By strategically using code-switching, educators can

help students build the language skills necessary to succeed in both academic and professional contexts.

Finally, code-switching is an important tool for fostering intercultural communication and strengthening cultural awareness in multilingual classrooms. Research by He et al. (2023) and Narayana (2024) highlights how code-switching can promote understanding between students from different cultural and linguistic backgrounds, encouraging mutual respect and empathy. This has profound implications for creating a culturally responsive classroom where students not only learn academic content but also develop the skills to engage with diverse perspectives. Teachers can use code-switching to connect students' linguistic backgrounds with the learning process, fostering an environment of respect, collaboration, and intercultural exchange.

Conclusion

This systematic review has highlighted the significant potential of code-switching as a pedagogical tool within multilingual classrooms. Through the analysis of various studies, it is evident that code-switching plays a multifaceted role in enhancing the learning experience for students in linguistically diverse environments. The review has demonstrated that code-switching not only aids in comprehension and cognitive engagement but also fosters social integration, enhances teacher-student communication, and promotes collaborative learning among peers. Additionally, it supports language acquisition, academic language proficiency, and intercultural communication, contributing to a more inclusive and dynamic educational setting. By offering students the opportunity to navigate between languages, code-switching empowers them to express ideas, deepen their understanding of complex concepts, and engage more meaningfully with the content. The review has also underscored the importance of code-switching in supporting students' identity formation, boosting their academic confidence, and encouraging active participation in classroom discussions. For educators, the findings suggest that code-switching, when used intentionally and strategically, can foster a more supportive and effective learning environment, particularly in multilingual contexts. Code-switching should be embraced as a valuable instructional tool that enhances not only academic achievement but also social and cultural cohesion in diverse classrooms.

In conclusion, this review underscores the need for further research into the best practices for integrating code-switching into teaching strategies and curriculum design. As multilingualism

continues to be a hallmark of educational settings worldwide, understanding and leveraging the affordances of code-switching will be crucial in promoting equitable learning opportunities for all students.

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