

## Exploring The Effects Of Multilingualism On Cognitive Development And Academic Achievement

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### Abstract

*Multilingualism, the ability to speak and understand multiple languages, has become ever more widespread in today's globalized world. In the context of our increasingly globalized world, multilingualism, characterized by proficiency in multiple languages, has become a focal point of research in linguistics, psychology, and education. With a large number of individuals speaking multiple languages, researchers are now focusing on understanding how being multilingual may impact cognitive abilities and academic performance. Researchers widely acknowledge that multilingualism not only helps individuals but also has probable advantages for society at large (Li, Dewaele, & Housen, 2002: 3). This paper seeks to explore the manifold effects of multilingualism on cognitive development and academic achievement. The paper delves into the cognitive ramifications of multilingualism, examining aspects such as memory, problem-solving, and creativity. The discussion encompasses language proficiency, literacy skills, and the transferability of linguistic knowledge across different academic subjects. It highlights the need for a nuanced understanding, considering the individual differences, linguistic contexts, and broader societal implications. Emotional dimensions are also considered, with an exploration of how multilingualism may impact emotional intelligence and socio-emotional development.*

**Keywords:** multilingualism, effect, cognition, academic, emotions, multilingual speakers.

### Introduction

#### Improved Metalinguistic Awareness

Early exposure to multiple languages fosters an enhanced metalinguistic awareness, allowing individuals to develop a deeper understanding of language structures and facilitating the transfer of this knowledge to various domains. Research conducted by Grin, Sfreddo, and Vaillancourt (20<sup>1</sup>10) highlights the positive impact of multilingualism on both individual and business economic development. Their study explores the intricate relationship between multilingualism and economic variables, particularly how language skills in the workplace influence corporate profits. Employers recognize the value of linguistic proficiency in their employees and remunerate them accordingly based on their qualifications. The intensity to

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which individuals are exposed to multiple languages in their cultural environment significantly influences their multilingual abilities. Growing up in a linguistically diverse community or in a family where more than two languages are spoken can lead to more frequent language switching and code-switching, which may enhance metalinguistic awareness and cognitive flexibility. Baetens-Beardsmore (2003) identified two fundamental types of fears underlying conflicts related to bilingualism, often intertwined: those rooted in social concerns and those centered on individual apprehensions. Educational fears revolve around concerns about children's ability to navigate two languages in an educational setting. The distinction is drawn between "elite bilingualism," a conscious choice by middle-class parents who can actively support the educational process, and transitional bilingual education, aiming to integrate young students into monolingual education swiftly.

On the other hand, political-ideological fears are tied to the perceived threat to national identity. Such concerns are prevalent in traditionally monolingual societies, where bilingual individuals may be viewed as harboring conflicting identities and ambiguous political beliefs. This anxiety frequently originates from a discomfort with the unknown, as highlighted by Dewaele (2015).

The second category outlined by Baetens-Beardsmore (2003) encompasses cultural fears, where parents express concerns about potential language and cognitive challenges faced by their children. Additionally, worries may arise about the children's ability to preserve cultural bonds with their heritage. Cultural fears are intricately linked to identity conflicts that could result in marginalization and alienation within the community.

In societies where the official language is considered a "language of wider communication," monolingual perspectives tend to dominate. This linguistic "myopia" is associated with a limited cultural awareness of the value of languages, often perpetuated by government policies exclusively endorsing the official language (Edwards, 2003). Contrarily, Dewaele (2015) observes that the trend towards introducing foreign languages early in schools, including kindergartens, contributes to high proficiency. However, research indicates that success in language acquisition is influenced by various factors like the quality of language input, the influence of language usage, and the competence to facilitate effective communication. Thus the recognition of both educational and political-ideological fears highlight the importance of addressing concerns related to language policies and national identity. Moreover, the acknowledgment of cultural fears emphasizes the need for promoting cultural awareness and inclusivity to mitigate potential identity conflicts. As societies navigate the complexities of bilingualism, a nuanced understanding of these fears is crucial for fostering inclusive language policies and nurturing a more diverse and interconnected global community.

### **Cultural Attitudes towards Multilingualism**

Cultural attitudes and beliefs about multilingualism can shape the value placed on language diversity. In some cultures, being bilingual or multilingual is highly regarded and seen as a sign of intelligence and cultural identity. Instead, in certain contexts, individuals may face pressure to assimilate into a dominant monolingual culture, leading to different attitudes towards learning the language and its usage. This valuable research highlights the significance of encouraging multilingualism through well-informed policies, benefitting individuals, businesses, and societies alike. Policymakers can use these findings to implement measures that foster language diversity, leading to positive economic outcomes and societal growth.

The changing economic landscape has led to a transformation in communication dynamics, giving rise to both localized, often multilingual interactions, and global, instantaneous, and standardized exchanges. Communication becomes both local (often multilingual) and global (instantaneous and standardised). Local communication and global interaction 'These new economic processes allocate decision-making responsibilities to more local zones of production'. (Castells, 2000) These developments in the economic realm have resulted in decision-making being decentralized to more localized zones of production. Consequently, effective communication, discussion, and involvement at the local level have become crucial. To ensure seamless coordination across large economic enterprises, it is essential to foster local literacy and communication skills. With an increasing number of workplaces embracing multilingualism, the ability to communicate in multiple languages has become a necessity for effective collaboration and understanding.

### **Communicating Emotions: Multi-linguals' Language Choices**

Jessner opines that multilingualism is the individual's ability to practice more than one language, encompassing the cognitive, psychological and affective effects and experiences that accompany this knowledge (Jessner, 2008). She focuses on viewing it not just as the ability to use multiple languages but as an all-inclusive notion that comprehends various cognitive, psychological, and affective dimensions that come with possessing this linguistic knowledge. Multilingualism can have a profound impact on an individual's psychological development. Learning and using multiple languages can shape the way they perceive the world and their identity. It might influence their self-concept, as they navigate different linguistic and cultural contexts, leading to a more nuanced understanding of their own cultural background and that of others. People often have emotional connections and attachments to languages based on personal experiences, cultural affiliations, or memories associated with a particular language. Multilingual individuals may experience a sense of pride, belonging, or even nostalgia linked to their linguistic repertoire. Multilingual individuals may encounter various experiences and effects related to their language abilities. These could include improved communication skills, enhanced cross-cultural understanding, increased empathy for speakers of other languages, and greater tolerance towards linguistic diversity.

A very popular field in research on bilingualism and multilingualism is how bilingual and multilingual people perceive and express their feelings and which languages they prefer each time (Pavlenko, 2012). She opines that L1 is usually the language used to express emotions, since each language a multilingual owns may have distinct emotional connotations, and this depends on the interlocutors and the context. She also adds that the emotional processing in L1 is more automatic and that multi-linguals show an increased electro dermal reaction to words that express emotions. Thus multilingualism is not merely a practical skill of comprehending multiple languages, but a complex phenomenon that shapes the very core of an individual's cognition, psychology, and emotions.

### **The Acquisition of Multilingualism on Cognition**

Language is the medium through which two or more than two people talk or communicate with one another. Most people know at least one language and we can find some people who acquire the skill to speak in more than one language. Such persons are called multilingual. Multilingual thus, is the ability of a person or a group of people to use multiple languages. Researchers have shown interest in exploring the relationship between learning outcomes and factors such as multilingualism (Nayak et al., Stephens & Moxham, 2019), growth mindsets (Lou & Noels; Yeager et al., 2019) and learning styles and self-regulation strategies. These factors are part of learners' learning patterns, which comprise 'a coherent whole of learning activities that learners

typically employ, their beliefs about learning and their learning motivation, a whole that is characteristic of them at a particular time’

Multilingualism may potentially affect various other learning pattern factors because it involves the acquisition of diverse language and non-language skills and experiences and leads to changes in an individual’s cognitive and affective states (Fielding ; Jessner, 2021). The resultant, however, may not be very appealing. For instance, Folke et al (2016) in their study of monolingual and bilingual adults found that monolinguals demonstrated ‘higher metacognitive abilities compared with the bilingual group’ and that differences could not be explained based on variations in ‘non-verbal reasoning, working memory or age’.

### **Cognitive Development & Academic Achievement**

Cognitive development and academic attainment are closely entwined and have a reciprocal relationship. Cognitive development refers to the progressive growth and enhancement of an individual’s rational capabilities, as retention, attention, problem-solving, language skills, and logical reasoning. On the other hand, academic achievement refers to the level of success a student attains in educational settings, often measured by grades, test scores, and academic performance. These skills have far-reaching impacts, influencing various aspects of an individual's life, such as educational accomplishments, job performance, income potential, overall physical and mental well-being, and even longevity. As cognitive abilities progress, they lay the groundwork for improved academic performance, while academic experiences, in turn, contribute to further cognitive development. By recognizing and nurturing this connection between the academic and cognitive abilities the educators and parents can create an environment that optimizes both cognitive growth and academic success in children. This probably may act as a powerful predictor of future success and well-being in multiple facets of life.

While certain studies, such as those by Bai et al. (2021) and Heslin & Keating (2016), propose a positive influence of growth-oriented mindsets on self-regulation, the overall body of research in this domain remains limited, as highlighted by Bai & Wang (2023). Heslin and Keating (2016) believe that when people observe poor performance as a result of limited innate ability, they may question the value of investing effort in cultivating a talent they believe they inherently lack. Beyond self-regulation, various mindsets, including intelligence mindsets, have been examined in conjunction with motivation, resilience, and achievement (Dweck & Yeager, 2019; Lou & Noels, 2019).

Studies addressing achievement indicate a generally positive relationship with growth mindsets, although not consistently significant (Lou et al., 2022; Yeager et al., 2019). Notably, despite a significant number of learners studying multiple languages in educational settings (Baïdak et al., 2017; Calafato, 2021), there is a notable gap in research concerning mindsets related to multilingualism and their impact on achievement. Additionally, there is a lack of comparative research on learner mindsets across different subjects and their potential effects on academic performance.

While some studies, like Glerum et al. (2020), suggest that mindsets may not significantly affect achievement in either language or non-language subjects, these studies are limited in number and often focus solely on individual mindsets without noticing other aspects pertaining to the learning patterns. Consequently, there arises a necessity for more comprehensive investigations that delve into the nuanced relationship between mindsets, multilingualism, and academic achievement across various subjects.

### **Higher Proficiency in Language Learning**

Multilingual individuals tend to demonstrate greater ease in acquiring additional languages due to their experience with language learning and the ability to recognize patterns across languages. Studies prove that there is a significant association between participants' degree of multilingualism and their learning styles and self-regulation strategies. Notably, those with higher multilingual proficiency tended to favor a learning mode characterized by concrete experiences (CE) and relied less on self-regulation strategies focused on content. This finding aligns research by Psaltou-Joycey and Kantaridou (2009), who identified a positive correlation between multilingualism and a preference for real-world experiences over structured learning environments. The study also indicated that proficiency played a role, with trilingual learners demonstrating advanced language skills employing learning approaches more often than fewer proficient trilingual counterparts. Proficient participants engaged in effective foreign language (FL) learning practices, such as speaking with native speakers, watching foreign programs, reading foreign texts, and writing in the FL. Psaltou-Joycey and Kantaridou observed that higher proficiency led individuals to consciously work at developing all four linguistic skills in naturalistic contexts, emphasizing authentic use of the target language (p. 469).

### **Cross-Cultural Competence**

Multilingualism is associated with increased cross-cultural competence and empathy, allowing students to navigate diverse social and academic environments more effectively. Achieving multilingual proficiency is indeed a notable accomplishment, influenced by various factors such as place of birth, socio-economic environment, education, and individual intelligence. Cognition, as described by Neisser (1967), involves the intricate process of transforming, reducing, elaborating, storing, recovering, and utilizing sensory input. Multilingualism is often associated with exposure to diverse knowledge sources and a broadened perspective on various issues. However, it's worth noticing that though many individuals are bilingual, proficiency in more than two languages is less common, partly due to educational systems where English serves as the prime mode of teaching, despite the prevalence of local languages.

The prevalence of English as a global language has both universalized communication and relegated many other languages to regional status (Franson, 2011). Cummins (1984) proposed the Common Underlying Proficiency Hypothesis, suggesting that proficiency in multiple languages can enhance cognitive and academic skills by leveraging shared linguistic competencies. This common proficiency encompasses the interconnected skills and knowledge that facilitate faster learning.

Socioeconomic factors, such as migration to a new country, often necessitate learning the host country's language for survival. Furthermore, the increasingly interconnected world and the dominance of English in online information have heightened the demand for multilingualism. While some languages have attempted to compete with English in the online sphere, they often fall short, emphasizing the importance of English expertise regardless of one's mother tongue.

The association between cognitive abilities and language skills is an area of active research, revealing both positive and negative impacts. Diaz (1983) suggests that bilingualism in children can enhance meta-cognitive skills and flexible thinking. However, other studies (e.g., Pearson, Fernandez, & Oller, 1993; Umbel & Oller, 1995) have revealed that bilingualism might lead to delays in lexical acquisition, indicating potential challenges in language learning.

In summary, achieving multilingual proficiency is influenced by various factors, including socio-economic background, educational opportunities, and individual cognitive abilities.

While multilingualism offers numerous benefits such as enhanced cognitive skills and expanded perspectives, it also presents challenges, particularly in language acquisition. Ongoing research continues to explore the intricate interplay between cognitive abilities and linguistic proficiency.

### **Challenges and Considerations:**

#### **Language Dominance**

Language dominance deals with the varying levels of the skill-set that multilingual individuals possess. David Graddol (Graddol, 2010) outlines a significant shift in English language learning from the traditional approach of 'English as a foreign language' progression to a new model known as the 'global English curriculum.' This shift varies among learners and countries but presents a recognizable description of foreign language learning progress. The global English curriculum represents an aspirational and idealized framework, departing qualitatively from the old paradigm and aiming to achieve advanced phases of proficiency at much younger ages. There has been a considerable shift in English language learning towards a global curriculum, challenges arise in educational settings where one language is privileged or more commonly used. This dynamic can hinder individuals' abilities to fully articulate themselves, grasp academic material, and participate in classroom interactions. Consequently, such disparities can exacerbate unequal educational opportunities and outcomes, highlighting the critical intersection between language dominance, multilingualism, and the evolving approach to English language education. Addressing language dominance issues requires promoting equitable bilingual or multilingual education that recognizes and nurtures all languages ensuring that individuals can thrive academically and develop a strong sense of identity and cultural pride.

#### **Maximizing Cognitive and Academic Gains through Bilingual Education Programs**

The primary focus of contemporary research on multilingualism revolves around investigating the impact of linguistic experiences, such as exposure to a bilingual environment, on individuals' linguistic and cognitive development (Bialystok, 2001). The successful implementation of bilingual education programs demands meticulous planning and ongoing professional development for educators. This approach ensures that the programs yield optimal cognitive and academic outcomes. As highlighted by research on the cognitive advantages of multilingualism (Bialystok, Craik, & Luk, 2012), well-executed bilingual education initiatives can enhance executive function, problem-solving abilities, and metalinguistic awareness among students. Moreover, careful consideration must be given to the equitable distribution of resources and opportunities within bilingual education frameworks. Neglecting certain languages or showing preference for one over others can exacerbate disparities and impede students' holistic development. Therefore, a comprehensive approach to bilingual education is essential to harness its full potential and promote inclusive learning environments (Evans & Stanovich, 2013; Peng et al., 2018). Well-executed bilingual education can lead to numerous cognitive benefits, such as improved executive function, problem-solving skills, and metalinguistic awareness. It is essential to ensure equitable access to resources and opportunities in bilingual education.

#### **Academic Content Comprehension**

Understanding complex academic content and technical language across multiple languages can be demanding, potentially affecting academic achievement. Multilingual learners might face challenges in building a robust vocabulary and grasping complex concepts, especially if they lack exposure to academic language in all their languages.



In a multilingual classroom, educators may misinterpret children's English proficiency, as noted by Vincent (1996: 195). The absence of accents and the ability to converse in everyday topics might falsely indicate high proficiency. However, this can overshadow the lack of academic language skills necessary for understanding complex concepts. This challenge is compounded by the presence of numerous home languages, where learners may excel in conversational fluency in the national language but struggle with abstract academic language. Recognizing this distinction is vital for providing tailored support in multilingual educational environments.

Acknowledging the challenges posed by multilingualism, it's equally important to appreciate its cognitive advantages and enriching effects on language and cultural understanding. Educators can facilitate this by offering tailored assistance, fostering inclusivity, and recognizing the distinctive strengths of multilingual learners. Through these efforts, educators empower multilingual students to surmount obstacles and thrive academically.

### **Identity Academic Language Proficiency and Cultural Connection**

Multilingualism can play a crucial role in shaping an individual's cultural identity and sense of belonging. Feeling connected to one's cultural heritage through language can positively impact motivation and engagement in academic pursuits. The level of know-how in academic languages (e.g., the mode of instruction in schools) can significantly influence academic achievement. For multilingual learners, developing strong academic language ability may lead to success in various subjects.

### **Parental Involvement and Support**

Children employ cognitive abilities in acquiring academic skills, has been highlighted by Evans & Stanovich (2013) and Peng et al. (2018). Consequently, the relationship between cognitive and academic development is bidirectional. Engaging in academic tasks throughout schooling potentially provides extended training for cognitive abilities. Building on this premise, the reciprocal connections between cognitive abilities and proficiency in reading and arithmetic are particularly evident during primary and secondary education phases, where systematic teaching and intensive practice occur (Peng et al., 2019). Active parental involvement in promoting multilingualism and supporting language learning can significantly influence children's cognitive development and academic achievement. Research indicates that such involvement establishes an environment conducive to academic engagement, fostering the enhancement of cognitive abilities. Additionally, the practice of multiple languages under parental guidance strengthens linguistic skills and reinforces cognitive functions essential for academic success. Supportive home environments that value and encourage language diversity can lead to positive outcomes.

### **Conclusion:**

As time progresses, the surge in research on multilingualism reflects the contemporary relevance of this dynamic phenomenon. The escalating interest in multilingualism mirrors the realities of our era, marked by increased global mobility, cross-cultural communication, and the coexistence of multiple official languages in some countries. The imperative to speak beyond one's mother tongue has become essential for adapting to diverse facets of life.

Multilingualism research, because of its inherent complexity and involvement of numerous variables across interdisciplinary fields, remains in high demand. While there has been a substantial development in establishing a more realistic understanding of multilingualism, certain methodologies still adhere to a monolingual criterion, particularly regarding proficiency. Looking ahead, future research in multilingualism is poised to unravel the

intricacies of language interaction, subconscious language selection in emotional expression, the emergence of languages in recollection, and the nuances of code-switching. A deeper exploration into multilingual speech production is anticipated, shedding light on language choice, dominance, and the directionality of language switches, contributing valuable insights to our comprehension of this multifaceted linguistic phenomenon. The relationship between multilingualism, cognitive development, and academic achievement is intricately connected to cultural and social factors. The interplay of language exposure, cultural attitudes, language policies, socioeconomic factors, social support, identity, and parental involvement shapes how multilingualism influences cognitive abilities and educational outcomes. The ability to switch between languages and understand diverse linguistic structures contributes to enhanced executive functions, language learning proficiency, and cross-cultural competence. However, addressing challenges related to language dominance and socioeconomic factors is crucial in promoting equitable access to the cognitive benefits of multilingualism. Educators and policymakers should consider the valuable role multilingualism plays in cognitive development and academic success, and work towards fostering supportive learning environments for all students, regardless of their linguistic backgrounds.

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