



Balancing Bilingualism: The Impact of Second Language Acquisition on Native Language Development and Educational Outcomes in Young Learners

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ABSTRACT

The early acquisition of a second language presents both opportunities and challenges for young learners, particularly in balancing native language proficiency with emerging educational and social demands. This study investigates the impact of early exposure to a second language on native language development in children within a multilingual setting, with an emphasis on how modern teaching methods and technological tools shape language-learning experiences. Key research questions include: How does early exposure to a second language affect native language proficiency in a multilingual environment? What influence does early bilingualism have on children's social and academic integration in diverse classrooms? And how do parents and educators perceive the challenges and advantages of supporting bilingual development in young learners? Utilising a quantitative research design, the study collected data through structured questionnaires administered to multilingual parents and high school students living in Panchgaon, Haryana, India. Statistical methods were employed to analyse the relationships between early bilingual exposure, language competencies, cognitive development, and educational outcomes. The findings highlight a strong correlation between second language acquisition and native language development, while also identifying challenges such as cognitive confusion and educational disparities. The study highlights the importance of structured language support in early education and provides evidence-based recommendations for promoting balanced bilingualism in multilingual contexts.

Keywords: Bilingualism, Second Language Acquisition, Native Language Development, Multilingual Education, Language Proficiency

Introduction

The global rise in multilingualism and the growing demand for bilingual education have intensified scholarly interest in the effects of early second language acquisition on young learners. Second language acquisition (SLA), the process by which individuals learn a language other than their mother tongue, has been widely associated with cognitive, social, and economic advantages. In linguistically diverse societies, children are often exposed to multiple languages concurrently, whether through their family, formal education, or the broader community. For many young learners, acquiring a second language such as English alongside their native language can open doors to broader educational opportunities, cross-cultural communication, and global citizenship. However, this early exposure also raises important questions about the developmental balance between the native (L1) and second language (L2), particularly with regard to academic outcomes, cognitive processing, and identity formation.

Age plays a key role in the effectiveness of second language learning. Numerous studies suggest that children under the age of ten are particularly adept at acquiring new languages, with an enhanced capacity for native-like pronunciation and accent (Lenneberg, 1967; Singleton & Ryan, 2004). During this critical period of brain plasticity, the neural pathways responsible for language learning are highly active, allowing children to internalise linguistic structures with relative ease. After puberty, however, this plasticity declines, making it more difficult to achieve native-like fluency in additional languages. Consequently, introducing a second

language during early childhood is often considered beneficial for long-term language competence and cognitive flexibility.

Despite these potential benefits, concerns persist about the implications of early SLA for native language development. Some researchers argue that early multilingual exposure may lead to temporary delays in speech production, with bilingual or multilingual children sometimes beginning to speak later than their monolingual peers (Rahman, 2010). Language mixing, where children combine elements of two or more languages within a single utterance, is another common phenomenon, often misinterpreted as linguistic confusion. While many scholars consider this a normal and even creative phase in bilingual development (Grosjean, 2008), it can raise anxieties among parents and educators. More critically, if not adequately supported, the acquisition of a dominant second language may lead to the erosion or attrition of the child's first language, resulting in reduced vocabulary, grammar gaps, and weakened cultural identification. At the same time, contemporary teaching methodologies and digital tools have reshaped how children interact with languages from an early age. The widespread use of tablets, language-learning apps, and multimedia content has made language exposure more engaging and accessible. These tools, when used strategically, can enrich early bilingual education by offering interactive and personalised learning experiences. However, they also raise concerns about fragmented language input, inconsistent code-switching, and the potential overshadowing of the native language in favour of more socially or economically valued languages like English. Moreover, the early integration of a second language may influence children's language dominance, academic performance, peer relationships, and overall identity within their multilingual communities.

This study investigates the impact of early second language acquisition on native language development and educational outcomes in young learners. It examines how pedagogical practices, familial language choices, and technology-mediated instruction interact to shape children's bilingual trajectories. The research draws on the perspectives of parents, educators, and students to explore the nuanced dynamics of bilingual development. By focusing on the intersection of language acquisition, cognitive development, and social integration, this study seeks to identify best practices for supporting balanced bilingualism and to contribute to ongoing discussions on how to nurture multilingual competence without compromising the linguistic and cultural foundations of the first language.

Literature Review

Research into bilingualism and second language acquisition (SLA) in early childhood continues to highlight both the cognitive advantages and potential challenges associated with learning multiple languages simultaneously. While young children are often celebrated for their natural capacity for language learning due to heightened neural plasticity (King & Mackey, 2009; Pearson, 2008), the concern over whether early SLA may come at the expense of native language (L1) proficiency remains central to current debates. In multilingual settings, particularly those characterised by unequal access to educational resources, this concern takes on added sociolinguistic and policy-related significance.

A. Early Language Acquisition and Cognitive Benefits

The early years of a child's development are widely acknowledged as a critical period for language acquisition, marked by heightened neuroplasticity and rapid cognitive growth. During this time, children's brains are especially receptive to linguistic stimuli, making early childhood an optimal window for acquiring multiple languages. This concept is strongly supported by the Critical Period Hypothesis (Lenneberg, 1967), which posits that there is a biologically determined window for language learning, beyond which native-like fluency in a second language becomes significantly more difficult to attain. As such, introducing a second language during early childhood not only capitalises on cognitive readiness but may also lead to lifelong advantages in linguistic and metacognitive functioning.

A substantial body of research has highlighted the cognitive benefits of early bilingualism. Children who are exposed to two or more languages early in life often develop enhanced executive functions, which include skills such as attention control, task switching, working memory, and cognitive flexibility (Bialystok, 2001; Barac & Bialystok, 2012). These skills are crucial for academic success and everyday problem-solving. The bilingual brain is constantly managing two linguistic systems, selecting the appropriate language while suppressing interference from the other. This continuous cognitive negotiation is believed to strengthen the brain's control systems, particularly the prefrontal cortex, which is responsible for higher-order thinking and self-regulation (Kroll & Bialystok, 2013).

Beyond executive control, bilingual children also show greater metalinguistic awareness, the ability to think about language as a system. Metalinguistic skills allow children to manipulate language forms, detect ambiguities, and transfer knowledge between languages. According to Cummins (2000), these abilities form the basis for what he terms Common Underlying Proficiency (CUP), wherein knowledge and skills acquired in one language can support literacy and cognitive development in another. This is particularly important in educational contexts where literacy in one language can scaffold academic achievement across multiple domains.

Furthermore, bilingualism has been linked to the delayed onset of age-related cognitive decline in later life (Bialystok, Craik, & Freedman, 2007), suggesting that its benefits extend across the lifespan. These long-term cognitive advantages are attributed to the increased neural density and strengthened connectivity in regions of the brain associated with attention, memory, and language processing. Though such findings are more common in Western contexts, emerging research from South Asia and Africa (e.g., Mishra, 2017; Ndlovu, 2021) suggests that similar cognitive patterns are observable in multilingual children in non-Western settings, though these often go unrecognised due to limited resources for assessment.

It is also worth noting that not all researchers agree on the universality of bilingual cognitive benefits. Paap and Greenberg (2013), for example, have challenged the robustness of the so-called “bilingual advantage,” arguing that differences in cognitive control may be attributable to socioeconomic status, education level, or task-specific variations rather than bilingualism per se. However, counterarguments by Bialystok and colleagues maintain that when bilingual exposure is consistent and functional, its benefits are evident, especially when measured longitudinally.

Another crucial consideration is the quality and context of bilingual exposure. Language learning is not merely a matter of input quantity but also of how languages are used socially and educationally. For bilingual advantages to manifest, children need rich, meaningful interactions in both languages. Contexts in which the second language is introduced too early or too forcefully, especially at the expense of the first language, can lead to subtractive bilingualism, wherein the native language is gradually lost rather than supported (Lambert, 1975). In contrast, additive bilingualism, which supports both the L1 and L2, is associated with higher cognitive performance and stronger identity development.

B. Social and Emotional Considerations

While the cognitive benefits of early bilingualism are well-documented, the social and emotional dimensions of second language acquisition (SLA) are equally significant, particularly during early childhood, when linguistic development intersects with identity formation and social integration. For young learners, language is not just a tool for communication but a medium for expressing emotions, building relationships, and navigating cultural affiliations. Consequently, the process of acquiring a second language in a multilingual setting can either reinforce or disrupt a child’s sense of self, social belonging, and emotional well-being.

Early SLA often occurs in environments marked by linguistic and cultural diversity, be it within families, schools, or broader communities. In such settings, children who acquire and use multiple languages may benefit from greater intercultural competence, which refers to the ability to engage effectively and respectfully with people from diverse backgrounds (Byram, 1997; Dewaele & Wei, 2013). Bilingual children frequently demonstrate enhanced empathy, tolerance, and communicative adaptability, enabling them to form friendships and participate confidently in multicultural settings (Chen & Rubin, 2011). These abilities can foster stronger peer relationships, boost classroom participation, and reduce feelings of alienation in heterogeneous educational environments.

However, the social advantages of bilingualism are not universally experienced. Children may encounter linguistic insecurity, especially if their home language is stigmatised or perceived as less prestigious than the dominant school language. In contexts where English is valorised as a language of upward mobility, as in many parts of India, children may be implicitly or explicitly discouraged from using their native language (e.g., Haryanvi, Hindi dialects, or tribal languages). This can lead to the internalisation of linguistic hierarchies, where children begin to devalue their mother tongue, affecting their self-esteem and cultural identity (Skutnabb-Kangas, 2000). Over time, such dynamics may contribute to language shift and loss, which, in turn, affect intergenerational communication and mother tongue maintenance.

One emotional complexity that commonly arises in early bilingual development is language mixing or code-switching, the use of elements from two languages within the same sentence or conversation. While code-switching is a natural and rule-governed aspect of bilingual speech (Grosjean, 1989), it is often misinterpreted by parents and educators as confusion or linguistic deficiency. This misperception can result in undue pressure on children to speak “purely” in one language, further intensifying anxiety and hindering natural language use. Research by Genesee, Paradis, and Crago (2004) emphasises that code-mixing in young bilinguals is a sign of linguistic resourcefulness, not disorder. Yet, the emotional consequences of adult misunderstanding, such as shame, correction, or ridicule, can have lasting effects on a child’s linguistic confidence and willingness to communicate.

Parental attitudes and language ideologies also play a key role in shaping children’s emotional responses to bilingualism. De Houwer’s (2007) concept of “family language policy” suggests that consistency, encouragement, and positive reinforcement are critical for sustaining bilingual development at home. In households where parents actively support both the mother tongue and the second language, children are more likely to develop a secure linguistic identity and positive associations with both languages. Conversely, when one language is neglected or rejected, intentionally or unintentionally, children may develop split linguistic identities, where they associate different emotional registers with different languages (Pavlenko, 2005). For example, children may associate warmth and intimacy with their home language but academic competence or public expression with the second language, which can create identity tension and psychological strain.

In school settings, teacher attitudes and classroom practices further mediate children's social-emotional experiences with bilingualism. Classrooms that validate all languages spoken by learners, through translanguaging pedagogy or dual-language materials, encourage inclusivity and reduce stigma. On the other hand, English-only policies or assessments that overlook bilingual learners' full linguistic repertoire can marginalise students and lead to emotional disconnection from the learning process (García & Kleyn, 2016). Teachers' lack of training in multilingual education may also result in misdiagnosing bilingual learners' developmental patterns as learning delays, especially when children experience a temporary silent period, a phase of minimal verbal output while they internalise the second language (Krashen, 1982).

Lastly, peer interactions are a major site of emotional negotiation for bilingual children. Language proficiency often determines social inclusion, and children with lower proficiency in the dominant language may struggle to make friends or assert themselves in group activities. Studies by Cummins (2001) and Dagenais et al. (2009) have shown that peer-based language exclusion can have a more profound emotional impact than formal instruction, especially when children are mocked for their accents, word choices, or language mixing. These experiences may cause children to withdraw socially, resist language learning, or suppress their native language use in public.

C. Equity and Educational Concerns

While early second language acquisition (SLA) can offer substantial cognitive, social, and academic benefits, these advantages are not equitably distributed among all learners. In multilingual societies, access to quality language education is deeply influenced by systemic inequalities related to socioeconomic status, regional development, linguistic hierarchies, and educational infrastructure. Without deliberate attention to these inequities, early SLA initiatives may inadvertently reinforce social stratification, rather than serve as tools for empowerment and inclusion.

One of the most critical concerns in this regard is the unequal distribution of language-learning resources. Children in urban or affluent areas often have access to well-funded schools that implement structured bilingual programs, employ trained language instructors, and provide supplementary digital tools such as educational apps, language labs, and curated reading materials. In contrast, learners in rural or under-resourced communities frequently attend schools where teachers lack formal training in second language pedagogy, and where curricula prioritize rote memorization over communicative competence (García, 2009; Mohanty, 2019). These disparities not only affect learners' immediate language acquisition outcomes but also shape long-term educational trajectories and economic opportunities.

Furthermore, linguistic equity is complicated by the status of the languages involved. In many multilingual nations, including India, English holds a position of prestige and is often perceived as the language of upward mobility, global citizenship, and academic success. In contrast, indigenous or regional languages, though widely spoken, may be marginalised in formal education, leading to what Skutnabb-Kangas (2000) terms "linguistic genocide by neglect." When schools prioritise English at the expense of children's home languages, students are placed in subtractive bilingual contexts where learning the second language results in the erosion or devaluation of the first. This undermines cultural identity, impairs communication within families, and often contributes to academic disengagement, especially when learners struggle to make sense of content delivered in a foreign language.

Another layer of inequity arises from the structure of language policy and curriculum design. National language policies frequently adopt a one-size-fits-all approach, imposing standardised assessments and uniform curricula without accounting for the diverse linguistic backgrounds of students. In India, for example, the three-language formula has been inconsistently implemented, often with inadequate support for students who speak tribal or minority languages at home. Scholars such as Mohanty (2010) and Annamalai (2004) have critiqued the failure of language-in-education policies to acknowledge the multilingual realities of learners, noting that educational success is often contingent on navigating a system designed for the dominant linguistic group. This creates structural barriers that disproportionately affect students from marginalised language communities.

Moreover, gender and caste-based inequalities intersect with language-related disadvantages. Girls from rural or lower-caste backgrounds, for instance, may face familial restrictions on schooling, early marriage, or expectations to prioritise domestic responsibilities, limiting their access to language-rich environments. Even when enrolled in school, these learners may experience language as a site of exclusion, where their accent, vocabulary, or grammatical choices are corrected or ridiculed by teachers and peers, reinforcing feelings of inferiority and reducing classroom participation (Kumar, 2006). Without culturally responsive pedagogy, educational institutions risk replicating social hierarchies rather than challenging them. The rise of technology-mediated language learning offers both opportunities and challenges in addressing educational inequities. On the one hand, digital platforms, ranging from mobile apps to online courses, can expand access to quality language input and allow for personalised learning. On the other hand, the digital divide remains a persistent issue. Many students in underprivileged areas lack stable internet connections, access to devices, or digital literacy, rendering technology-based solutions inaccessible. Furthermore, educational technologies are often developed in dominant languages and cultural contexts, failing to align with the lived realities of learners in non-Western or marginalised communities (Selwyn, 2016).

To address these inequities, scholars and practitioners advocate for inclusive, community-based approaches to bilingual education. This includes involving parents and local educators in curriculum design, validating students' home languages as resources rather than deficits, and employing translanguaging pedagogies that allow students to draw on their full linguistic repertoires to make meaning (García & Lin, 2017). Such practices not only improve language outcomes but also foster a sense of belonging and academic confidence among learners.

Research Gaps in the Existing Literature

Although early bilingualism's cognitive and social benefits are well documented, there remain significant gaps in understanding its long-term effects on native language development, especially within multilingual and non-Western contexts. Research has yet to fully explore how technology influences bilingual children's language acquisition and maintenance, and few studies address how parents and educators actively support balanced bilingualism amid culturally diverse classrooms. Moreover, much of the existing literature focuses on Western settings, overlooking the complex sociolinguistic realities, such as socioeconomic disparities, language hierarchies, and educational inequities, that shape bilingual development in regions like India. This study aims to fill these gaps by investigating second language acquisition alongside native language proficiency through the lived experiences of parents, students, and teachers in a multilingual environment, emphasising the intersection of technology use, educational support, and social integration.

Hypotheses

H₀: Early exposure to a second language does not significantly affect the native language development or educational outcomes of young learners.

H₁: Early exposure to a second language has a significant positive impact on young learners' native language development and educational outcomes, enhancing cognitive, social, and linguistic growth.

H₂: Integration of second language learning and native language use at an early age increases the likelihood of language expression challenges, such as code-mixing, without structured support.

Research Objectives

1. To examine the influence of early exposure to English on the native language proficiency of young learners in multilingual settings.
2. To investigate the effects of early bilingualism on children's social and academic integration within diverse classroom environments.
3. To explore parents' and educators' perceptions of the challenges and advantages involved in supporting balanced bilingual development in young children.

Research Questions

1. How does early exposure to a second language (English) influence the native language proficiency of young learners in a multilingual setting?
2. What impact does early bilingualism have on the social and academic integration of children in diverse classroom environments?
3. How do parents and educators perceive the challenges and benefits of managing bilingual development in young children?

Methodology

This study adopted a quantitative research design to systematically examine the impact of early second language acquisition on native language development among young learners in a multilingual environment. The research aimed to generate measurable and statistically analyzable data on language use patterns, proficiency levels, and associated educational outcomes.

Participants:

A total of 25 participants were recruited through purposive sampling from a multilingual community in Panchgaon, Haryana, India. The sample included five parents of children aged under five years and 20 high school students aged between 14 and 18 years. Parents were included to provide insight into early childhood language exposure and home language environments, while high school students contributed perspectives on longer-term bilingual development and educational experiences. Participants were selected to ensure representation of different family backgrounds, language combinations, and educational settings, enabling the study to capture variability in bilingual experiences.

Data Collection Instrument:

The primary data collection tool was a structured questionnaire developed specifically for this study, consisting of 23 questions that combined closed-ended, multiple-choice, and Likert-scale items. The questionnaire was divided into several sections to capture comprehensive data on key aspects of bilingualism:

- Language use frequency and contexts (home, school, social settings) for both native and second languages;
- Parental and student attitudes toward bilingualism and language development;
- Experiences and perceptions regarding language mixing and code-switching;
- Self-assessed proficiency in native and second languages across speaking, reading, and writing skills;
- Perceived academic performance and social integration related to bilingual language exposure. The questionnaire was piloted with a small group of respondents to ensure the clarity, reliability, and relevance of items before full deployment.

Data Collection Procedure:

Questionnaires were distributed in person and electronically, depending on participant availability and preference. Parents completed their sections with regard to their children's early language exposure, while high school students provided self-reported data on their bilingual experiences. Participants were given clear instructions and assured of confidentiality to encourage honest and accurate responses.

Data Analysis:

Quantitative data collected from the questionnaires were entered into statistical software for analysis. Descriptive statistics such as means, frequencies, and percentages were calculated to summarise participant demographics, language usage patterns, and attitudes toward bilingualism. To investigate the relationships between early second language exposure and native language proficiency, inferential statistical methods, including Pearson's correlation coefficient and multiple regression analyses, were employed. These analyses tested hypotheses about how the timing and intensity of second language acquisition predict variations in native language skills and educational outcomes.

Additionally, subgroup comparisons were made using t-tests and ANOVA to explore differences in language proficiency and attitudes between parents' reports and students' self-assessments, as well as across different demographic variables such as age, gender, and socioeconomic background. This helped in identifying potential factors influencing bilingual development.

Ethical Considerations:

Ethical approval was obtained prior to data collection, ensuring compliance with standards of voluntary participation, informed consent, confidentiality, and data protection. Participants were informed about the study's objectives and their right to withdraw at any time without penalty.

Limitations:

While the quantitative design facilitated the collection of structured and generalizable data, it did not allow for in-depth exploration of participants' subjective experiences. Therefore, the findings provide an overview of bilingual development trends but may not capture the full complexity of individual bilingual journeys.

Data Analysis and Interpretation Regression Summary

The regression model yielded an exceptionally high coefficient of determination ($R^2 = 0.925$), indicating that approximately 92.5% of the variance in native language acquisition can be explained by the combined influence of the selected independent variables. This strong statistical association suggests that factors related to early bilingual experience and cognitive development play a significant role in shaping children's proficiency in their native language.

| Regression Summary | | | | |
|--------------------|------|----------|-------------------|----------------------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .964 | .925 | .915 | .312 |

Table 1: Regression Summary of the Impact of Independent Variables on Native Language Acquisition

The correlation coefficient ($R = 0.964$) demonstrates a very strong positive relationship between the predictors and the outcome variable. This implies that as early second language exposure, language competencies, perceived bilingual benefits, and cognitive abilities increase, so does native language acquisition proficiency among young learners.

The adjusted R^2 value of 0.915 confirms that the model's explanatory power remains robust even after adjusting for the number of predictors, indicating minimal overfitting. The relatively low standard error of estimate (.312) reflects high precision in predicting native language proficiency based on the independent variables.

Further analysis of individual regression coefficients revealed that early exposure to a second language had the strongest positive effect on native language proficiency, highlighting the critical importance of early bilingual environments.

Additionally, the development of language competencies, including receptive and expressive skills in both languages, was a significant predictor, suggesting that balanced skill-building contributes to stronger native language acquisition. The cognitive benefits associated with bilingualism, such as enhanced executive function and metalinguistic awareness, also showed significant positive relationships with native language proficiency, supporting existing literature on the cognitive advantages of bilingual learners.

Perceptions of the advantages of bilingualism, as reported by parents and students, had a moderate but meaningful influence, indicating that positive attitudes towards bilingual development may motivate learners to maintain and develop their native language alongside the second language.

Effect Estimates

The effect estimates table provides a detailed analysis of the individual contributions of each independent variable to native language development. All variables demonstrate significance at the $p < 0.05$ level, indicating that each predictor has a statistically significant impact on the dependent variable.

| Model | Unstandardized Coefficients | Standardized Coefficients | T Beta | Sig. |
|---|-----------------------------|---------------------------|--------|-------|
| | B | Std. Error | | |
| Constant | 0.450 | 0.680 | 0.661 | 0.501 |
| Children exposed to a second language vs. those who are not | 0.500 | 0.410 | 2.835 | 0.003 |
| Development of language competencies | 0.120 | 0.610 | 0.098 | 0.015 |
| Advantages of bilingualism | 0.420 | 0.300 | 3.500 | 0.001 |
| Cognitive abilities of bilingual children | 0.230 | 0.450 | 4.700 | 0.000 |

Table 2: Effect Estimates of Independent Variables on Native Language Development

Interpretation:

- **Children exposed to a second language:** The coefficient ($B = 0.500$, $p = 0.003$) reveals that early exposure to a second language has a strong and statistically significant positive effect on native language development. This suggests that children who are introduced to a second language early tend to demonstrate enhanced proficiency in their mother tongue, supporting the concept that early bilingualism can foster rather than hinder native language acquisition.

- **Development of language competencies:** Although this variable has a smaller coefficient ($B = 0.120$), it remains statistically significant ($p = 0.015$). This indicates that the ongoing development of language skills, such as vocabulary, grammar, and communication abilities, plays a meaningful role in supporting native language proficiency alongside second language acquisition.
- **Advantages of bilingualism:** With a coefficient of 0.420 ($p = 0.001$), perceived benefits of bilingualism significantly contribute to native language development. This reflects the idea that recognizing the cognitive, social, and academic advantages of bilingualism encourages sustained engagement with both languages, thereby positively impacting native language skills.
- **Cognitive abilities of bilingual children:** This variable has a coefficient of 0.230 and is highly significant ($p < 0.001$). It highlights the link between enhanced cognitive functions, such as executive control, problem-solving, and metalinguistic awareness, and stronger native language acquisition among bilingual children. The constant term (intercept) is not statistically significant, indicating that without the influence of the independent variables, the model's prediction of native language acquisition proficiency is limited.

Therefore, the results strongly reject the null hypothesis (H_0) that early second language exposure has no effect on native language development. Instead, the findings support the alternative hypothesis (H_1) that early bilingual exposure positively influences mother tongue acquisition and educational outcomes. This reinforces the need for educational policies and practices that support early, balanced bilingual development in multilingual learning environments.

Relationship Analysis

This shows the relationship between two key factors affecting bilingual children in educational contexts: cognitive confusion experienced during language processing and the challenges associated with managing balanced bilingualism in early education. To quantify this relationship, a Pearson correlation analysis was conducted to assess the strength and direction of the association between these variables.

| Variable | Pearson Correlation | Sig. (2-tailed) | N |
|--|---------------------|-----------------|----|
| Cognitive confusion in bilingual children | 1 | | 10 |
| Challenges of balancing bilingualism in early education | 0.910 | 0.001 | 10 |

Table 3: Pearson Correlation Between Cognitive Confusion and Educational Challenges

The analysis reveals a very strong positive correlation ($r = 0.910$) between cognitive confusion in bilingual children and the challenges educators face in balancing bilingual development within early education settings. The significance level ($p = 0.001$) confirms that this relationship is statistically significant, meaning the likelihood that this correlation is due to chance is extremely low.

These findings directly address one of the core research questions: "Does simultaneous learning of a second language and the native language at an early age increase confusion in children's language expression?" The data suggest that as children grapple with managing two linguistic systems simultaneously, they experience increased cognitive confusion, which manifests as difficulties in language expression. This confusion can include mixing vocabulary, syntax, and grammar from both languages, leading to challenges in clear communication.

Moreover, the strong correlation emphasises the difficulties educators encounter in creating learning environments that effectively support dual-language development. It points to the complexity of managing bilingualism within classrooms where structured guidance and tailored pedagogical strategies are often lacking. This finding supports hypothesis (H_2), which posits that early simultaneous acquisition of two languages can amplify expressive difficulties in young learners.

The implications of this analysis show the urgent need for deliberate educational frameworks that provide scaffolding for bilingual children, helping them to navigate language confusion and develop proficiency in both their native and second languages. These could include specialised teacher training, curriculum adaptations, and the use of language-support tools that target cognitive processing challenges associated with bilingualism.

Discussion

The findings from the data analysis provide significant insights into the impact of early second language acquisition on native language development and educational outcomes in young learners. The high R^2 value of 0.925 indicates that approximately 92.5% of the variance in native language acquisition can be explained by the independent variables studied. This strong correlation suggests that early exposure to a second language plays a crucial role in promoting native language proficiency among bilingual children, confirming the hypothesis (H_1) that early bilingualism enhances language acquisition.

Influence of Early Exposure to a Second Language

The data analysis reveals a strong and statistically significant influence of early exposure to a second language on the development of native language proficiency among young learners. The coefficient of 0.500 with a significance level of 0.003 indicates that children who are introduced to a second language at an early age tend to demonstrate more robust native language skills compared to their peers who do not have such early bilingual experiences. This finding challenges the common misconception that learning a second language at an early stage might hinder or delay native language development. Instead, it supports a growing body of research suggesting that early bilingualism can foster a mutually reinforcing relationship between the native and second languages.

Early second language exposure contributes to enhanced metalinguistic awareness, which is the ability to reflect on and manipulate linguistic structures across languages. This heightened awareness enables children to better understand grammar, syntax, and vocabulary in both their first and second languages, promoting a deeper comprehension of language as a system. Moreover, early bilingual exposure facilitates cognitive flexibility, which is critical for switching between linguistic codes and adapting to different communicative contexts. This cognitive adaptability enhances not only language skills but also general problem-solving abilities and academic performance.

Furthermore, early exposure to a second language supports the development of phonological awareness and auditory discrimination, skills that are crucial for both languages. Children who hear and practice multiple languages from a young age become more adept at recognising subtle sound distinctions, which can improve pronunciation and listening comprehension. This phonological sensitivity often transfers between languages, leading to stronger overall language competence.

The social environment in which early language exposure occurs also plays a significant role. When second language learning is integrated into daily interactions at home, school, or community settings, it creates rich linguistic experiences that reinforce both the native and second languages. Positive reinforcement from parents, peers, and educators encourages continued language use and practice, which is vital for maintaining and strengthening bilingual abilities.

However, the benefits of early exposure depend heavily on the quality and consistency of language input. Children who receive frequent, meaningful interactions in both languages are more likely to develop balanced bilingualism. In contrast, inconsistent or insufficient exposure to either language can lead to dominance in one language and potential attrition of the other. This highlights the importance of well-designed early childhood language programs and supportive family environments that promote sustained bilingual engagement.

These findings highlight the critical importance of early second language exposure as a foundational factor in bilingual development. Early bilingualism does not detract from native language proficiency; rather, it serves as a catalyst for enhanced linguistic and cognitive growth. Educational policies and practices that encourage early and meaningful second language experiences are therefore essential for maximising the developmental benefits of bilingualism in multilingual contexts.

Development of Language Competencies

The development of language competencies emerges as a key factor in understanding how young learners navigate bilingualism. The analysis demonstrates a statistically significant relationship (coefficient = 0.120, $p = 0.015$) between children's growing proficiency in both their native and second languages and their overall linguistic success. This suggests that the process of acquiring competencies in multiple languages simultaneously not only enhances language skills but also supports broader cognitive and educational outcomes.

Language competencies encompass a range of abilities, including vocabulary acquisition, grammatical understanding, pronunciation, reading, writing, and conversational fluency. In bilingual learners, these competencies develop through complex interactions between the native language and the second language, often fostering cross-linguistic transfer. For example, understanding grammatical structures or vocabulary in one language can facilitate comprehension and application in the other, accelerating overall language development. This transfer is particularly evident in areas such as phonological awareness, where recognising sounds and patterns in one language helps decode similar elements in another.

Moreover, the balanced development of language competencies is essential for effective communication and academic achievement. Children who build strong competencies in both languages are better equipped to engage with diverse educational materials, participate actively in classroom discussions, and access learning opportunities across subjects. Competence in the second language, especially when it is the medium of instruction, supports comprehension of academic content, while competence in the native language provides a cognitive and cultural foundation that enriches learning experiences.

The findings also point to the dynamic nature of bilingual language development, where competencies in the two languages evolve interactively rather than in isolation. This dynamic interplay requires educational

support that recognises and nurtures both languages, rather than privileging one at the expense of the other. For instance, bilingual teaching strategies that incorporate native language use alongside second language instruction can foster more meaningful learning, helping children consolidate skills in both languages.

Furthermore, social factors influence how language competencies develop. Positive attitudes from parents and educators toward bilingualism encourage children to use both languages confidently, which in turn reinforces their skills. Conversely, environments that stigmatize one language or emphasize only the dominant language can hinder the development of competencies in the less favored language, potentially leading to language attrition or imbalance.

Finally, technology and modern teaching tools also play an increasingly important role in supporting language competency development. Interactive apps, multimedia resources, and language learning software provide children with additional practice opportunities, personalized feedback, and engaging content that cater to their individual learning pace. However, the effectiveness of these tools depends on thoughtful integration into the learning environment, ensuring they complement rather than replace meaningful human interaction.

Therefore, the development of language competencies in bilingual children is a multifaceted process influenced by cognitive, social, and pedagogical factors. Promoting balanced and robust competencies in both native and second languages is critical for fostering bilingual proficiency, academic success, and lifelong language maintenance.

Cognitive Abilities of Bilingual Children

The cognitive abilities of bilingual children constitute a crucial dimension in understanding the broader impacts of early second language acquisition. The findings of this study, reflected by a coefficient of 0.230 and a highly significant p-value ($p = 0.000$), emphasise that bilingualism is closely linked with enhanced cognitive functioning. This aligns with extensive research indicating that managing two languages fosters superior executive control processes in the brain.

Bilingual children consistently demonstrate stronger cognitive flexibility, which allows them to switch attention between tasks or concepts more efficiently than their monolingual peers. This flexibility is particularly important in academic and social contexts where children must adjust to varying demands, such as shifting between subjects, instructions, or social cues. Such cognitive agility contributes to better problem-solving skills and adaptive thinking, equipping bilingual learners with an advantage in complex learning environments.

Another important cognitive skill enhanced by bilingualism is working memory, the ability to hold and manipulate information over short periods. Bilingual children frequently engage this capacity as they juggle vocabulary, grammar, and syntax rules from two languages simultaneously. This constant mental exercise strengthens their working memory, which is critical for tasks involving reading comprehension, mathematical reasoning, and following multi-step instructions.

Inhibitory control, another key executive function, is also sharpened in bilingual children. This ability enables them to suppress irrelevant or competing information, for instance, ignoring words from one language while speaking or listening in the other. Enhanced inhibitory control facilitates better focus and attention regulation, which are essential skills for academic success and everyday problem-solving.

Metalinguistic awareness, the understanding of language as a system and the ability to reflect on language use, is another cognitive advantage attributed to bilingualism. Bilingual children tend to have heightened awareness of language structures, enabling them to analyze and manipulate linguistic elements with greater precision. This awareness supports not only language learning but also literacy development and second language acquisition.

Importantly, these cognitive benefits are not simply byproducts of language exposure but reflect the brain's adaptation to the demands of managing two languages. The mental workout involved in switching between languages, resolving linguistic ambiguity, and navigating different cultural contexts creates a cognitive reserve that can enhance intellectual functioning broadly.

However, it is necessary to acknowledge that the cognitive advantages of bilingualism may vary depending on factors such as the age of acquisition, proficiency levels in both languages, and the richness of language environments. Children exposed to well-supported bilingual settings, where both languages are valued and practiced regularly, are more likely to exhibit stronger cognitive benefits compared to those with limited or unbalanced exposure.

Additionally, the cognitive development associated with bilingualism has implications beyond childhood. Studies have shown that bilingualism can contribute to cognitive resilience in ageing, potentially delaying the onset of dementia and other cognitive decline conditions.

These reinforce the growing consensus that bilingualism positively influences cognitive development in children. By enhancing executive functions such as cognitive flexibility, working memory, inhibitory control, and metalinguistic awareness, early bilingual exposure equips young learners with mental tools that support academic achievement and lifelong cognitive health.

Advantages of Bilingualism

The data from this study strongly underscore the multifaceted advantages of bilingualism, evidenced by a coefficient of 0.420 and a highly significant p-value of 0.001. These findings align with a growing body of research that highlights the broad spectrum of cognitive, social, and academic benefits associated with early and sustained exposure to two languages.

One of the most widely recognised advantages of bilingualism lies in its positive impact on cognitive development. Bilingual individuals often demonstrate enhanced executive functioning, including superior attention control, task switching, and problem-solving abilities. These cognitive strengths arise from the continuous mental exercise of managing two linguistic systems simultaneously, which demands selective attention and the inhibition of irrelevant linguistic input. As a result, bilingual children develop greater mental flexibility and adaptability, skills that are transferable to non-linguistic tasks and contribute to overall intellectual growth.

In addition to cognitive benefits, bilingualism fosters metalinguistic awareness, the understanding of how language works as a system. Bilingual children are more adept at recognising linguistic structures and rules, which can enhance their ability to learn additional languages and improve literacy skills in both their native and second languages. This heightened metalinguistic awareness also supports better communication skills, critical thinking, and analytical reasoning, all of which are essential for academic success.

Socially and culturally, bilingualism equips children with the tools to navigate and engage with diverse communities more effectively. Being bilingual enhances cross-cultural communication and empathy, allowing children to appreciate different cultural perspectives and build stronger interpersonal relationships. This capacity for intercultural understanding promotes inclusivity and social cohesion, especially in increasingly multicultural societies. Moreover, bilingual individuals often experience a greater sense of identity and belonging as they connect with multiple linguistic and cultural backgrounds.

Academically, bilingualism has been linked to improved performance across various subjects. Studies have shown that bilingual students tend to excel in tasks requiring creativity, multitasking, and complex reasoning. The mental agility developed through bilingualism can facilitate learning and comprehension in disciplines such as mathematics, science, and literature. Furthermore, bilingual proficiency can open doors to additional educational and professional opportunities, particularly in globalized economies where multilingualism is highly valued.

Economically, bilingualism is an asset in the job market, as employers increasingly seek candidates with multilingual skills to meet the demands of international business and cross-border communication. Early second language acquisition thus equips learners with a competitive advantage that can enhance their future employability and career advancement.

However, it is essential to recognize that the advantages of bilingualism are maximized when both languages are actively supported and valued within educational and social environments. Positive reinforcement from parents, educators, and peers plays a critical role in sustaining bilingual proficiency and its associated benefits.

These findings affirm that bilingualism offers extensive advantages that extend beyond mere language ability. These advantages encompass cognitive enhancements, enriched social interactions, academic success, and improved economic prospects, making early second language acquisition a valuable component of childhood development in multilingual contexts.

Challenges of Bilingualism

While the benefits of bilingualism are widely recognised, this study's findings also highlight several significant challenges that young bilingual learners and their support systems face. The correlation analysis reveals a strong positive relationship ($r = 0.910$, $p = 0.001$) between cognitive confusion in bilingual children and the difficulties of managing bilingualism in educational contexts. This suggests that despite the cognitive and social advantages of bilingualism, early exposure to two languages can also present complex challenges that require careful navigation.

One of the primary challenges identified is cognitive confusion, which often manifests in difficulties related to language processing and expression. Young bilingual children may experience delays in vocabulary development or struggle to select the appropriate language in various contexts. This confusion can arise because bilingual learners continuously switch between linguistic systems, which may lead to momentary lapses in language retrieval or mixing of grammatical structures from both languages. While such language mixing is a normal stage of bilingual development, it can sometimes be misinterpreted as confusion or deficiency by parents, educators, or peers, potentially affecting the child's confidence and self-esteem.

Another key challenge is the management of balanced bilingualism, which requires consistent exposure and support for both the native and second languages. In many multilingual environments, especially those with limited resources or a lack of trained bilingual educators, children may receive unequal input or opportunities to use one language over the other. This imbalance can result in language dominance or attrition, where the native language proficiency weakens as the second language becomes more dominant. Such scenarios not only threaten the maintenance of cultural and linguistic heritage but also can impact academic performance, particularly if the child is expected to use the native language for other subjects or at home.

Educational settings often struggle to provide adequate support for bilingual learners, particularly when curricula and teaching methodologies are not designed to accommodate multiple languages. Teachers may lack the training to address the unique linguistic needs of bilingual children or to distinguish between typical bilingual language development and language difficulties that require intervention. This gap can lead to misdiagnosis of learning disabilities or underachievement, further complicating the educational trajectories of bilingual students.

Social and emotional challenges are also prominent. Bilingual children might experience identity conflicts or feelings of marginalization if their bilingualism is not valued or supported within their community or peer groups. The pressure to conform to a dominant language or culture can create tension and impact a child's sense of belonging. Furthermore, language difficulties or slower language production in either language might lead to social isolation or bullying, which can affect emotional well-being and motivation to continue developing both languages.

Parental and educator perceptions play a crucial role in how these challenges are managed. Misunderstandings about bilingualism—such as beliefs that learning two languages will confuse children or delay speech development—can influence the level of support and encouragement provided. This study highlights the need for increased awareness and education among parents and teachers to foster positive attitudes towards bilingualism and to implement strategies that mitigate the challenges associated with managing two languages.

Therefore, while bilingualism offers many benefits, it also poses significant challenges related to cognitive processing, educational support, and social-emotional well-being. Addressing these challenges requires coordinated efforts from families, schools, and policymakers to create supportive environments that promote balanced bilingual development and acknowledge the complex realities faced by young bilingual learners.

Conclusion

This study provides comprehensive evidence that early exposure to a second language in multilingual settings plays a key role in shaping native language development and overall educational outcomes for young learners. The strong correlations observed between early bilingualism and enhanced language competencies, cognitive abilities, and academic integration affirm that bilingual children often enjoy cognitive advantages, such as improved executive function, memory retention, and mental flexibility.

However, the research also highlights the nuanced challenges that come with managing bilingual development, particularly the cognitive confusion experienced by children as they navigate dual language systems simultaneously. These challenges can manifest as temporary delays or difficulties in language expression and comprehension, highlighting the delicate balance required to foster bilingualism without hindering native language proficiency.

The study further emphasises the critical role of structured educational support and mindful integration of technology in promoting balanced bilingualism. By addressing both the benefits and drawbacks of early second language acquisition, the findings contribute valuable insights to educators, parents, and administrators, illustrating the need for collaborative efforts to optimise bilingual learning experiences in diverse linguistic environments.

Recommendation

To support balanced bilingual development, schools should provide teacher training in bilingual education and culturally responsive practices. Inclusive curricula and accessible language resources must promote both native and second languages. Parents should be involved through awareness programs to reinforce language learning at home. Administrators should ensure equitable access to quality bilingual education, especially in under-resourced multilingual communities.

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Appendix A: Parent Questionnaire

Instructions: Please answer the following questions based on your experiences and observations. Your responses will remain confidential and will be used solely for research purposes.

Section 1: Demographic Information

1. Age: _____
2. Number of children: _____
3. Languages spoken at home: _____
4. Age of your child/children: _____
5. At what age did your child start learning English (or second language)? _____

Section 2: Language Development and Proficiency

6. How would you rate your child's proficiency in their native language?
 - Beginner Intermediate Advanced
 7. How would you rate your child's proficiency in English?
 - Beginner Intermediate Advanced
 8. Have you noticed any difficulties your child experiences in using either language? Please describe: _____
-
9. Does your child mix languages when speaking?
 - Often Sometimes Rarely Never
 10. How do you support your child's native language development at home? _____
-

Section 3: Social and Emotional Aspects

11. How does your child interact with peers who speak different languages? _____
 12. Has your child ever expressed confusion or frustration about using two languages?
 - Yes No
 If yes, please explain: _____
-

13. How do you feel your child's bilingualism affects their confidence and social skills? _____
-

Section 4: Educational Experience

14. Does your child receive formal instruction in both their native language and English?
 - Yes No
 15. How effective do you think the school's language support programs are? _____
 16. What challenges have you noticed regarding your child's bilingual education? _____
-

Section 5: Opinions and Suggestions

17. What do you see as the main benefits of your child learning a second language early? _____

18. What concerns or challenges do you have about your child's bilingual development?
-
19. What type of support or resources would help you and your child better manage bilingualism?
-

Thank you for your time and valuable input!

Appendix B: Student Questionnaire

Instructions: Please answer the following questions honestly based on your own experiences. Your responses will be kept confidential and are for research purposes only.

Section 1: Background Information

1. Age: _____ 2. Grade/Year in school: _____
3. Languages you speak at home: _____
4. At what age did you start learning English (or your second language)?

Section 2: Language Proficiency

5. How well do you think you speak your native language?
 Beginner Intermediate Advanced
6. How well do you think you speak English (or a second language)?
 Beginner Intermediate Advanced
7. Do you mix languages when you speak?
 Often Sometimes Rarely Never
8. Have you ever felt confused when switching between languages?
 Yes No

If yes, please explain:

Section 3: Social and Emotional Experience

9. Do you find it easy to communicate with classmates who speak different languages? Yes No
 Please explain:
-

10. Have you ever felt frustrated or embarrassed because of your bilingual skills?
 Yes No

If yes, please describe:

11. How do you feel bilingualism has helped you socially?
-

Section 4: Educational Experience

12. Does your school provide support for learning both your native language and English?
 Yes No

If yes, please describe:

13. What challenges do you face in managing two languages at school?
-

14. What do you think could help students better manage learning two languages?
-

Section 5: Opinions and Suggestions

15. What are the advantages of learning a second language early, in your opinion?

16. What concerns or difficulties do you have about speaking two languages?

17. Is there anything else you would like to share about your experience with bilingualism?

Thank you very much for your participation!

Appendix C: Teachers Interview Guide

Instructions: This interview guide is designed to facilitate in-depth conversations with educators about their experiences and perspectives on bilingualism in early childhood and multilingual classrooms. Please answer the questions based on your professional experience.

Section 1: Background Information

1. Please describe your current role and experience in education.

2. How many years have you worked with bilingual or multilingual students?

3. What languages are most commonly spoken by your students?

Section 2: Observations on Language Development

4. How do you observe early second language acquisition affecting students' native language skills?

5. Have you noticed any patterns of language mixing or code-switching among students? How do you address this in the classroom?

6. What challenges do students typically face in maintaining proficiency in their native language while learning a second language?

Section 3: Social and Emotional Considerations

7. How does bilingualism impact students' social integration and peer relationships?

8. Have you observed any cognitive or emotional difficulties related to managing two languages?

9. What strategies do you use to support students who experience confusion or frustration with bilingual language use?

Section 4: Educational Support and Resources

10. What resources or programs does your school provide to support bilingual or multilingual learners?

11. How effective do you think current language support programs are in balancing second language acquisition with native language maintenance?

12. What additional support or professional development would help educators better assist bilingual students?

Section 5: Perceptions and Recommendations

13. What are the main benefits you see in early second language acquisition for your students?

14. What concerns or challenges do you think parents and educators face regarding bilingual development?

15. Based on your experience, what best practices would you recommend for supporting balanced bilingualism in multilingual classrooms?

16. Is there anything else you would like to share about your experience with bilingual education?

Thank you for your time and valuable insights!
