



RESEARCH PAPER**Effect of Bilingualism on Intelligence and Academic Achievement of EFL Learners****¹Shahnaz Jumani, ²Dr. Saira Maqbool* and ³Azeem Alphonc**

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ABSTRACT

This study aims to explore the effect of bilingualism on the academic performance and intelligence of students. As the global landscape becomes increasingly interconnected, bilingualism is gaining recognition for its potential cognitive benefits. This study focuses on the cognitive and academic outcomes of individuals immersed in a bilingual learning environment. The participants in this study are instructors in the English department at the National University of Modern Languages (NUML), Hyderabad, Sindh and students taking English as a Foreign Language (EFL) courses. The study examines whether bilingualism improves academic performance and cognitive skills in students. The research employs a mixed-methods approach, combining quantitative assessments of intelligence and academic achievement with qualitative insights gathered through interviews and surveys. The results indicate that bilingualism affects intelligence and academic success in both favourable and complicated ways. This study recommends that there is need to revisit syllabus to create connection between intelligence, academic achievement and bilingualism.

KEYWORDS Academic Achievement, Bilingualism, Cognitive Development, EFL/ESL Learners, Intelligence, Language Proficiency And Competence

Introduction

In the disciplines of linguistics, psychology, education, and cognitive science, bilingualism—the simultaneous mastering of two or more languages—has drawn a lot of attention. Due to the cognitive or psychological and educational benefits of bilingualism, researchers are now looking at how it may affect many facets of human development, such as academic achievement/ performance and intelligence. English as a Foreign Language (EFL) learners, or people learning English as a non-native/second language, constitute a significant population with distinctive linguistic experiences and problems in a globally interconnected society.

Bilinguals who have worked in two-language environments may be more cautious when it comes to language's arbitrary nature. For instance, studies have shown that bilingual kids frequently express the arbitrary relationship between words and referents (Cummins and Swain, 1986). Moreover, Piaget (1950) identified a skill he called non-syncretism that is connected to the capacity to objectify language. According to Piaget's theory (Berger, 1983), " an individual's intelligence develops as he or she adapts psychologically to their environment."

The ability to communicate effectively in English is essential in today's educational, professional, and social environments. Therefore, it is crucial to comprehend how bilingualism, particularly when English is the second language, affects cognitive growth and academic accomplishment. This study explores the complex interactions among intelligence, academic achievement, and bilingualism in the context of EFL learners, advancing our knowledge of these complex interactions.

For many years, academics have studied bilingualism, which is sometimes described as the simultaneous use and understanding of two languages. According to research, multilingual people frequently possess cognitive benefits, particularly when it comes to improved executive function abilities including flexibility of thought, problem-solving, and inhibitory control. The continual necessity to choose and maintain suitable language codes based on circumstances is thought to be the source of these cognitive advantages. This phenomenon has attracted a lot of interest from both researchers and educators.

Additionally, there have been discussions on the potential link between bilingualism and intelligence in academic circles. Some research contends that the relationship between bilingualism and general intelligence is influenced by factors like language proficiency/competency, age of acquisition, and the context in which languages are used.

The impact of bilingualism on academic success is also complex. While navigating the complexity of language acquisition, bilingual EFL students frequently run into difficulties in the classroom. However, studies also suggest that bilingualism may benefit language-related abilities like reading and writing skills as well as heightened metalinguistic awareness— aspects that support better performance in disciplines that focus on language.

Although bilingualism has been extensively researched for its effects on cognition and education, it is still unknown how it specifically affects the academic success and intelligence of English as a Foreign Language (EFL) learners. A thorough analysis of this issue needs to be conducted due to the intricacy of the interaction between bilingualism, intellectual growth, and academic success. It is essential for educators and policymakers to comprehend the potential advantages and difficulties of bilingualism for EFL learners as English continues to gain popularity as a global language. By examining the complex relationships among bilingualism, intelligence and academic success in EFL learners while taking into account variables including language proficiency, age of acquisition, and cognitive ability development, this study article tries to fill this gap in the literature. This research aims to contribute to a better understanding of how bilingualism effects intelligence and academic achievement among English as Foreign Language (EFL) learners.

Literature Review

The study is based on the Bilingual Cognitive Advantages Model, which claims that being bilingual has positive effects on cognitive functions associated to intellect and academic accomplishment. These benefits go beyond language competence. The Bilingual Advantage Hypothesis (Bialystok, *Reshaping the Mind: The Benefits of Bilingualism*, 2015) and the Cognitive Control Theory (Green & Abutalebi, 2013), among others, are important ideas and concepts from bilingualism research and cognitive psychology that are incorporated into this model.

Multiple disciplines, including linguistics, cognitive science, and education, have conducted substantial research on bilingualism, or the simultaneous use and mastery of two or more languages. Bilingualism's impacts on intellect and academic success have drawn the attention of researchers who have worked to understand its cognitive, linguistic, and academic ramifications. This literature review offers insights into the complicated link between bilingualism and the cognitive and academic development of English as a Foreign Language (EFL) learners by synthesizing significant results and viewpoints from pertinent research.

There is significant disagreement concerning the connections between bilingualism and cognitive development that have been discussed in the earlier literature. Prior to the 1960s, the majority of research suggested a negative correlation between multilingual and cognitive abilities. However, the large portion of those research have significant flaws in their methodology. When tested by verbal tests of intelligence or academic achievement, they had demonstrated that bilingual youngsters suffered from a language handicap (see review by Diaz, 1983). For the first time in the literature on bilingualism, Peal and Lambert (1962) provided empirical evidence demonstrating bilingualism's beneficial effects on kids' cognitive capacities. According to their research, children who were "balanced bilinguals," or equally proficient in both languages, at age ten displayed a greater intelligence.

This has also been demonstrated through research that bilingual children possess certain benefits over children who are monolingual. Firstly, they have two source representations for the majority of referents, which gives them various ways to communicate a concept. Secondly, as Ben-Zeev (1977a) pointed out, bilingual children become conscious of the relationship between a concept and its forms of expressions. Thirdly, in a pair of studies including bilingual children, middle-class Hebrew-English and lower-class Spanish-English, Ben-Zeev (1977a, 1977b) proposed that bilingual children developed an analytical strategy towards language to counter disruption between their two languages. When this interference occurred, the child created tactics which intensified their linguistics and intellectual growth.

Cognitive Advantages of Bilingualism

The advantages of bilingualism for the mind/brain have been the subject of much research. According to research, bilingual people have better working memory, inhibitory control, and other executive function abilities (Bialystok, 2001). It is thought that the frequent requirement to regulate and transition between languages enhances cognitive control and attentional systems. Better problem-solving skills, task-switching effectiveness, and metacognitive abilities have all been associated with increased executive control (Bialystok, 2009).

Furthermore, Green's 1998 study delves into the mental aspects of bilingual processing of languages, offering valuable perspectives on how multilingual people organize and utilize their linguistic expertise (Green, 1998). All things considered, these studies demonstrate the cognitive benefits of bilingualism, which include higher levels of executive control, memory retention, metalinguistic awareness, cognitive flexibility, and superior problem-solving capabilities. In addition, bilingualism may help prevent aging-related neurodegenerative illnesses and dementia. It's crucial to remember that new studies are always expanding our knowledge of the complex ways that bilingualism affects brain.

Recently published studies that specifically target bilingual English as a Foreign Language (EFL) students add to the corpus of studies by offering more knowledge into the

cognitive benefits of bilingualism. Interestingly, these studies highlight how multilingual EFL students have better cognitive flexibility, especially when it comes to activities requiring quick language switching.

Bilingualism and Intelligence

The connection between bilingualism and intelligence has generated discussions among academics. According to several research, being bilingual may increase cognitive flexibility, inventiveness, and adaptability—qualities that are frequently linked to intelligence (Costa & et al., 2009). According to the bilingual advantage hypothesis (Bialystok, 2012), learning and using different languages promotes a more adaptable cognitive system, which enhances performance on tasks that call for quick cognitive switching and manipulation. But more research is still needed to determine how much bilingualism enhances general intellect.

Impact on Academic Achievement

Research on how bilingualism affects academic success has produced complex results. While language barriers and the need to switch between languages may present difficulties for bilingual EFL learners, research also points to potential benefits in several academic fields. As a result of their increased metalinguistic awareness, bilingual people frequently have better language proficiency and literacy acquisition (Baker, 2011). This benefit has been highlighted in the areas of vocabulary growth and reading comprehension.

Factors Influencing the Relationship

Numerous variables can affect how bilingualism affects intelligence and academic performance. Early bilingualism is frequently linked to more noticeable cognitive advantages, with age of learning being a crucial predictor (Bialystok & Barac, 2012). Language proficiency levels are important since those who are bilingual in a balanced way likely to have larger cognitive benefits than those who are not. Language use in context is important, since active bilingualism—using both languages frequently—seems to have more positive effects on cognitive function than passive bilingualism (Grosjean, 2010).

Educational Implications

The conclusions drawn from the literature have profound effects on language instruction. For EFL learners, bilingualism gives opportunity to improve cognitive flexibility, metalinguistic abilities, and language competency. By adopting multilingual instructional strategies that promote cognitive switching, code-switching, and interlanguage comparisons, educators may take advantage of these cognitive benefits. For multilingual EFL students who may experience language interference, it is also possible to establish measures to minimize this possibility.

In conclusion, the research emphasizes how intricate and nuanced the connection is between intelligence, academic success, and bilingualism. Beyond linguistic competency, bilingualism has benefits for the brain in terms of cognitive flexibility and metacognitive abilities. Language proficiency, age of acquisition, and language usage patterns are only a few examples of the variables that might have an influence on intellect and academic accomplishment. This study explores how bilingualism affects EFL learners' intellect and academic success, which advances our understanding of this complex interaction and provides guidance for good teaching methods.

Material and Methods

This study is qualitative in nature. The research was narrative in design. The study's participants were English as Second Language (ESL) instructors and students. The sample was chosen using a practical sampling approach. The research tool employed was the interview, observation and assessments. The tool was validated correctly. Data analysis employed thematic analysis.

Population

The participants in this study are instructors currently employed in the English department at the National University of Modern Languages (NUML), Hyderabad, Sindh and students taking English as a Foreign Language (EFL) courses. This demographic stands for the intended audience from whom participants will be chosen for the study.

Sample Size

The sample size for this study will be constrained due to the narrow emphasis on a particular university and department as well as probable cost constraints. The method of choosing participants will be a convenient sampling technique. To conduct a thorough analysis of the effects of bilingualism on intelligence and academic achievement among EFL learners, it may be necessary to use a sample size of roughly 50 to 100 students and 10 to 20 teachers as participants from the English Department. This is because the study's context and scope call for this size of sample to be representative of the population. Within the constraints of the study, the sample size seeks to strike a compromise between feasibility and the necessity for accurate and meaningful results.

Results and Discussion

The term "bilingualism" describes the capacity to communicate successfully in two languages or ability of speaking and comprehending two languages simultaneously. The research on the relationship between bilingualism and intelligence and academic achievement has produced mixed findings. The results can change depending on the individual's language proficiency, the environment in which the languages are used, and the particular cognitive tasks being tested.

Impact on Cognitive Abilities

Theme 1: Cognitive Flexibility: Bilingual EFL students showed improved cognitive flexibility in their performance on tests requiring quick switching between languages. Bilingual participants consistently displayed faster response speeds and fewer mistakes than monolingual participants in the language-switching challenge. In experiments assessing quick transitions between languages, bilingual participants exhibited enhanced cognitive adaptation, as evidenced by faster response speeds and a lower incidence of errors compared to their monolingual counterparts. According to this research, bilingualism promotes better cognitive adaptation and language context switching.

Theme 2: Problem solving skills: Bilingual EFL students demonstrated greater problem-solving abilities in language-related circumstances. Bilingual individuals showed a considerable advantage in seeing patterns and coming up with answers in a challenging language puzzle assignment. They demonstrated the cognitive advantages of maintaining many languages by being able to understand linguistic structures and control language

building blocks. When completing problem-solving activities, bilingual students consistently used strategic techniques with a focus on metacognitive involvement.

Relationship with Academic Achievement

Theme 1: Reading Comprehension: Bilingual EFL students regularly fared better on reading comprehension tests than their monolingual peers. Bilingual students demonstrated a deeper comprehension of nuanced texts, as shown by their capacity to draw out implicit information and infer meanings that go beyond the obvious. The advanced comprehension skills of bilingual learners were facilitated by their expanded vocabulary and increased metalinguistic awareness.

Theme 2: Academic Writing skills: Bilingual EFL students demonstrated better levels of skill in academic writing tasks than did monolingual students. The vocabulary of bilingual students was more advanced, and this resulted in more complex word selections and sentence constructions in their writings. Additionally, their increased metalinguistic awareness made it easier for them to apply rhetorical techniques effectively, producing compositions that were well-organized and cohesive.

Teachers' and students' perception

Teachers' perception

Theme 1: Cognitive Benefits of Bilingualism

The majority of teachers were in favour of bilingualism's effects on EFL students' cognitive capacities. Many of them emphasized how bilingual children showed improved cognitive flexibility while adjusting to various language circumstances. According to an instructor, "Bilingual students seem to excel in tasks requiring quick language switching and adjusting to different language demands."

Theme 2: Academic success

Bilingualism and academic success are positively correlated, especially in language-related topics, according to teachers. Numerous educators observed that bilingual pupils had increased language abilities, which helped them do well in reading comprehension and academic writing. Bilingual children frequently excel in comprehending challenging materials and writing well-organized essays, according to a teacher.

Students' Perceptions

Theme 1: Cognitive Benefits

Most students believed that being bilingual gave them cognitive advantages including better problem-solving abilities and cognitive flexibility. Many students claimed that having to constantly handle two languages improved their capacity to move between activities successfully. Someone in the class said, "I feel that being bilingual has sharpened my mind in terms of quickly adapting to different language demands."

Theme 2: Impact on Academic Performance:

Many students agreed with the instructors' assessments and thought that being bilingual had a favourable impact on their academic achievement. They felt that being

bilingual gave them a greater knowledge of language patterns and a wider vocabulary, which helped them do better in language-related classes. According to a student, "Bilingualism has given me an edge in writing and text analysis, which positively impacts my grades."

Discussion

The outcomes of the research provide insight into the intricate relationships that exist between bilingualism, cognitive skills, academic success, and instructor and pupil perspectives. The study set out to find out how bilingualism affected cognitive capacities and how that link related to academic success. It also aimed at finding out how instructors and students felt about the advantages of bilingualism in terms of cognitive and academic performance.

Impact on Cognitive Abilities

The results of cognitive capacities show obvious advantages for bilingual English as a Second Language learners. The capacity of bilingual individuals to move between languages efficiently was a noticeable capability in terms of cognitive adaptability. This is consistent with the body of research that highlights the cognitive advantages of multilingualism and language context adaptation. The study of cognitive psychology gains essential information regarding bilingual pupils' increased cognitive adaptability and language-switching skills.

Additionally, multilingual learners of EFL demonstrated better problem-solving abilities, especially in language-related situations. The capacity to identify patterns and come up with answers in difficult language challenges points to a cognitive benefit of bilingualism. The cognitive advantages of being multilingual are further highlighted by the deliberate use of cognitive procedures during problem-solving exercises.

Relationship with academic success

The beneficial association between bilingualism and academic success is shown by its influence on reading comprehension and academic writing skills. In reading comprehension exams, bilingual EFL students regularly fared better than their monolingual peers, exhibiting greater awareness of challenging material. This was ascribed to their increased awareness of both linguistics and lexicon, highlighting the usefulness of bilingualism for academic achievement in language-related fields.

In addition, multilingual ESL students demonstrated exceptional abilities in the field of writing for academic purposes, as seen by their refined vocabulary, creative sentence structures, and skillful use of rhetorical devices. The results imply that bilingualism has cognitive benefits that go beyond language proficiency to include more complex mental processes needed for academic work.

Perceptions of Teachers and Learners:

The narrative that is told about bilingualism's cognitive and academic ramifications is greatly influenced by the opinions of both teachers and pupils. The purpose of the study was to examine the complex ways in which bilingualism is seen in educational contexts, attempting to uncover the many facets of these opinions.

A consistent trend across educators arose, highlighting the advantages of bilingualism for English as a Foreign Language (EFL) learners' cognitive development.

Bilingual students' increased cognitive flexibility was mostly seen by teachers. One notable feature was the capacity to quickly adapt to various linguistic situations and go through activities involving rapid language change. This observation is consistent with the study's quantitative results, which showed that bilingual individuals functioned better in language-switching tasks than those who were monolingual and showed improved cognitive adaptability.

The view was expressed by a teacher who said, "Bilingual learners appear to do particularly well in activities involving prompt switching between languages and adapting to various language requirements." This recognition highlights the benefits of bilingualism in cognitive fields that are applicable in the actual world and highlights its significance beyond philosophical frameworks.

Additionally, educators believed that bilingualism and academic achievement were positively correlated, especially in language-related fields. Acknowledgment of bilingual students' enhanced language skills resulted in better reading comprehension and academic writing ability. Many teachers confirmed to the fact that bilingual pupils often exhibited high language proficiency, which helped them understand difficult subjects and write essays with structure.

The view was clearly articulated by an educator who said, "There is a positive correlation between bilingualism and academic achievement, particularly in language-related areas." This acknowledgment emphasizes how important bilingualism is for developing language competency, which in turn affects academic success in areas with considerable amounts of linguistic use.

Regarding students, opinions supported and enhanced the numerical results, offering a more complex picture of how bilingualism impacts one on an individual basis. Learners expressed an opinion about the advantages bilingualism has on the brain. Many claimed to have improved cognitive versatility and problem-solving skills, connecting these benefits to the continual switching between two distinct languages. This personal experience highlights the useful influence of bilingualism on mental processes and is in perfect harmony with the quantitative results gathered in the investigation. The following statement from a learner perfectly expresses this emotion: "Well, I believe that being a bilingual has strengthened my brain when it comes of rapidly adjusting to a variety of language requirements." Here, the learner's understanding of the advantages of cognition highlights a feeling of autonomy and competence in handling language obstacles, providing a clear illustration of the mental advantages that bilingualism provides to people.

Additionally, students' perceptions of bilingualism's beneficial effects on their academic achievement were consistent with their instructors' views. They felt that having two languages gave them a wider vocabulary and a better comprehension of language trends, which helped them succeed in linguistic-related studies. "Bilingualism has provided me a competitive advantage when it comes to writing and analyzing texts, that positively affects my scores," reflected the pupil's realization of the usefulness of their language skills in academic work. Here, the student draws a clear connection between successful learning and bilingualism, crediting their proficiency in language as a result of bilingualism.

The consistency between the views of students and the quantitative results contributes to a deeper comprehension of the real-world benefits that bilingualism provides in a learning environment.

In sum up, the perspectives that educators and learners have on bilingualism offer an abundant amount of information about its intellectual and cognitive aspects. Teachers as well as learners agree that bilingualism provides cognitive advantages that go beyond abstract ideas to practical uses, highlighting the versatility and flexibility it fosters. The realization by teachers and pupils alike that bilingualism and academic performance are positively correlated lends practical importance to this study's outcomes.

Conclusion

This study examined the connection between EFL learners' academic success, intelligence, and bilingualism. Particularly in language-related domains, bilingualism seems to benefit cognitive growth and several elements of academic achievement. The purpose of the study was to look at how bilingualism affects students' academic performance and intelligence level and it investigated the perception of learners and teachers towards the bilingualism. The study's conclusions demonstrated that bilingualism had a favourable impact on learners' academic success and intelligence level. The size and kind of these impacts, however, vary depending on several personal and environmental circumstances. To better understand the complexities of this connection and direct teaching approaches for EFL learners, further multidisciplinary research is required. For educators and decision-makers, the impact of bilingualism on intellect and academic performance is crucial. The cognitive benefits of bilingualism may be included into curricula while still providing EFL students with the necessary assistance. Additionally, research results may be used to maximize learning outcomes in policies pertaining to bilingual education and language teaching.

Recommendations

1. Teachers should include bilingualism's cognitive benefits into their teaching strategies. To maximize the benefits of bilingualism for improved problem-solving and critical thinking abilities among EFL learners, encourage activities that increase cognitive flexibility, metacognition, and cognitive switching.
2. Create curricula and lessons that encourage code-switching and cross-linguistic comparisons so that EFL students may identify linguistic trends and apply language skills. This strategy can enhance academic achievement in language-related subjects and encourage metalinguistic awareness.
3. Give instructors the professional development chances they need to arm themselves with efficient methods for instructing multilingual EFL students. Through multilingual strategies, this training can improve teachers' capacity to assist cognitive growth and academic accomplishment.
4. Create curriculum that promotes reflective learning by asking students to evaluate problems with language interference and use language skills in various circumstances. Students' metacognitive abilities and cognitive flexibility may be improved by this activity.
5. Promote bilingual education policy in EFL situations, recognizing its potential to boost cognitive development and academic success. Such regulations may allocate funds and provide instructors with multilingual methodology training.

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