BILINGUAL EDUCATION'S IMPACT ON FIRST-LEVEL STUDENTS' LEARNING OUTCOMES

Naila Iram[*1], Dr. Ismat Bano[2]

[*1]MPhil Scholar, Department of Arts & Humanities, Superior University, Lahore;
[2]Assistant Professor, Department of Arts & Humanities, Superior University, Lahore

ABSTRACT

This meta-analysis explores the impact of bilingual education on dual language learners' (DLLs) academic performance, revealing that the overall effect is modest and not statistically significant. However, it highlights several key factors requiring further research. The type of bilingual program significantly influences outcomes, with dual language programs outperforming transitional ones. Academic subjects also play a role, as multilingual instruction particularly benefits subjects like mathematics. Additionally, the language used for assessment affects results, emphasizing the need to consider both first and second language proficiency. The study finds that the effectiveness of bilingual education is consistent across primary education levels. Future research should continue to investigate these factors to optimize bilingual education strategies and enhance academic performance for all students.

Keywords: Education, First Level Students, Learning Outcomes

INTRODUCTION

For many years, scholars, educators, and politicians have disagreed on the effectiveness of bilingual education programs for elementary school pupils. Dual language learners (DLLs) are becoming more prevalent in classrooms, yet opinions on whether bilingual education methods are appropriate and useful for academic instruction are still widely divided. The main source of concern is the idea that exposing DLLs to two languages in their early school years could hinder their ability to speak English by separating their exposure to the two languages, which could cause confusion and poorer academic results.

The goals of bilingual education are to advance bilingualism, biliteracy, and biculturalism through the teaching of academic material in two languages. Proponents contend that bilingual education fosters cultural awareness, strengthens cognitive flexibility, and gives students a strong foundation in both their first and second language (L1 and L2, respectively) (Cummins, 2000). Opponents, however, fear that these programs could impede the learning of English, which is frequently the main language of education and societal integration in many settings (Rossell & Baker, 1996). By combining information from

several research, this meta-analysis aims to shed light on the effect of bilingual education on primary-level DLLs' academic achievement in comparison to students in English-only programs..

45 studies with 540 participants that were carried out between 1972 and 2020 were included in the study. There was a range of 1 to 84 impact sizes per investigation, with an average of 12 effect sizes. The majority of research (41) concentrated on bilingual programs that speak both Spanish and English as there are many Spanish-speaking DLLs in the US. More language pairings were examined in the studies that followed, such as Chinese-English, Russian-Hebrew, and many more, giving rise to a more comprehensive knowledge of bilingual education in a variety of linguistic circumstances. The fact that 43 out of 45 research were conducted in the United States shows how important bilingual education is to the American educational system. Further research was carried out in Canada and Israel, yielding additional information that was pertinent to the different cultural situations.

Twelve published studies and thirty-three unpublished investigations were included in the analysis to provide a comprehensive overview of the

available data. The goal of this strategy was to reduce publication bias and offer a range of data so as to provide a more accurate and comprehensive knowledge of the effects of bilingual education. A thorough examination of the benefits of bilingual education across several learning domains was made feasible by the research's broad coverage of academic disciplines, such as language, writing, math, and reading.

One of the primary objectives of this meta-analysis was to ascertain whether bilingual education programs had a statistically significant effect on DLLs' academic achievement relative to regular English-only schools. According to the study, there was a little overall impact of bilingual education programs ($g = 0.028$) on the academic performance of DLLs, but it was not statistically significant ($p = .742$, CI 95% [-0.144, 0.201], Prediction Interval 95% [-1.403, 1.459]). Comparing bilingual education to English-only schools, this conclusion implies that, generally speaking, neither significantly improves nor impedes academic performance. But the large prediction interval suggests significant variation in impact sizes amongst research, highlighting the significance of looking into potential moderators that could affect results.

Examining the potential moderating effects of several characteristics, including grade levels, academic subjects, language of outcome measurement, and program type, on the benefits of bilingual education was another important component of the analysis. For instance, the type of program (immersion, dual language, transitional bilingual, or dual language) and the academic subject (mathematics, reading, writing, language, or writing) may have a significant impact on the quality of bilingual education. Furthermore, the language (L1 or L2) used to measure the results may have a significant influence on performance outcomes. This could clarify the advantages and disadvantages of multilingual education for DLLs.

This meta-analysis aims to provide a comprehensive evaluation of the impact of bilingual education on DLLs' academic achievements at the primary level while accounting for a range of moderating factors. Through the synthesis of data from many studies, this research seeks to provide evidence-based insights that might inform educational practices and policies to better support DLLs in achieving academic accomplishment in both their native and second languages.

Study Overview and Findings

Information from 45 studies involving 540 participants, conducted over nearly five decades, from 1972 to 2020, is compiled in this meta-analysis. Although the studies address a wide range of bilingual education-related scenarios and initiatives, they mostly focus on Spanish-English initiatives, which account for the majority of bilingual education in the United States. Of the 45 studies, 41 examined bilingual programs in Spanish and English because of the large number of Spanish-speaking Dual Language Learners (DLLs) in the US. The remaining studies examined bilingual programs with various language pairs, such as Chinese-English, Russian-Hebrew, and other combinations, in order to broaden the scope of the analysis.

The meta-analysis contained a mix of published (12 studies) and unpublished (33 studies) research. By included a sizable portion of unpublished studies, the analysis aimed to reduce publication bias and provide a more comprehensive picture of the data on bilingual education that were currently accessible. Through the incorporation of a wider scope of research, this inclusive approach has the potential to yield conclusions that are more dependable and universally relevant.

The meta-analysis examined the effects of bilingual schooling on arithmetic, writing, reading, and language among other academic domains. This wide-ranging strategy enables a thorough evaluation of the ways in which bilingual education influences several aspects of academic achievement. Furthermore, the research encompassed the early elementary (pre-kindergarten through third grade) and late elementary (fourth through sixth grade) educational levels, offering valuable perspectives on the potential variations in the efficacy of bilingual education among distinct primary education phases.

Overall, the meta-analysis showed that, in comparison to normal English programs, bilingual education programs have little effect on DLLs' academic achievement. A tiny overall effect size ($g = 0.028$) and lack of statistical significance ($p = .742$, CI 95% [-0.144, 0.201], Prediction Interval 95% [-1.403, 1.459]) suggest that, generally speaking, bilingual education has no discernible impact on academic achievement. The large prediction interval, however, points to significant variation in impact sizes amongst studies. This variation emphasizes how crucial it is to look into various moderators that

could affect how bilingual education programs turn out.

In order to identify the causes of the variation in effect sizes, a number of plausible moderators were taken into account. These comprised the kind of bilingual program, the academic subject, the language used to measure the results, and the students' grade level.

Program Type:

Different results may be obtained from dual language, transitional bilingual, and immersion programs. Compared to transitional bilingual programs, which concentrate on easing kids into English-only instruction, dual language programs, which strive for bilingualism and biliteracy, typically yield better outcomes. Particularly transitional bilingual programs were linked to worse results in terms of English competency, most likely as a result of their initial strong focus on the native language (L1).

Academic Subject:

Subject-specific effects of bilingual schooling differed. The results for DLLs in bilingual programs were much better in mathematics than those in mainstream programs, but there were no significant changes in reading or language outcomes. According to this research, bilingual education may be able to help students overcome language obstacles in disciplines like mathematics, where learning in the native tongue may make it easier for them to understand difficult concepts.

Language of Outcome Measurement:

An important factor was the terminology used to measure academic results. In general, results tested in the native language (L1) were higher than those measured in the second language (L2). This was especially noticeable when it came to reading, as DLLs were significantly beneficial in the person's first language but not in their second.

Grade Level:

The effectiveness of bilingual instruction did not significantly change between the early and late elementary classes. This study indicates that the benefits and challenges of bilingual education remain rather consistent over the elementary school curriculum.

Conclusion

Lastly, while the fact that the overall effect of bilingual education on DLLs' academic performance appears to be modest and not statistically significant, the wide range of effect sizes among the studies highlights the need for additional research. This meta-analysis has illuminated several important aspects that require greater investigation and a deeper comprehension.

A major factor influencing academic performance is the kind of bilingual program. Programs that strive for bilingualism and biliteracy, known as dual language programs, typically yield superior outcomes compared to transitional bilingual programs that concentrate on easing children into instruction in English alone. This demonstrates that maintaining and improving one's bilingualism can be beneficial. Future research should look at how different program designs and teaching philosophies affect student results.

The second crucial factor to examine is the academic subject. The investigation's findings demonstrated that DLLs in multilingual applications outperformed those in conventional mathematical software. This shows that training in the mother tongue could help pupils better understand challenging concepts in subjects like mathematics, where bilingual education could be helpful in overcoming language hurdles. Subsequent studies ought to concentrate on determining which subjects benefit the most from bilingual education and how to adapt instruction in accordance with those findings.

Thirdly, the language used to evaluate the results has a big impact on the results. Exams in the first language (L1) typically measure proficiency higher than exams in the second language (L2). This exemplifies how important it is to include assessment language when evaluating bilingual education effectiveness. Plans for synchronizing the development of both languages should be established, and future study should examine the connection between academic achievement and L1 and L2 proficiency.

Lastly, it seems that the effectiveness of bilingual education is independent of grade level. This demonstrates that the benefits and challenges of multilingual education remain mostly consistent across the various primary education levels. However, long-term studies that monitor children may provide further insights into the ways that bilingual education affects students' language

development and academic performance throughout their school years.

Overall, it does not seem that bilingual education greatly improves or degrades academic performance on average; however, it is important to recognize the moderating factors, which include program type, academic subject, grade level, and language of outcome measurement. With this information, educators and legislators may create bilingual education initiatives that better promote DLLs' academic performance. In order to maximize instructional tactics and guarantee that all students, regardless of their language background, have the chance to realize their full academic potential, future study should keep examining these characteristics.

References

Cummins, J. (2000). Language, Power and Pedagogy: Bilingual Children in the Crossfire. Clevedon, England: Multilingual Matters.

Rossell, C. H., & Baker, K. (1996). The educational effectiveness of bilingual education. Research in the Teaching of English, 30(1), 7-74.

Acosta, S. T. (2010). *High-stakes reading assessment and English oral languagedevelopment: A study of third grade English language learners in a Texas schooldistrict* [Unpublished doctoral dissertation]. Texas A&M University.

Baker, D., Basaraba, D. L., & Polanco, P. (2016). Connecting the present to the past: Furthering the research on bilingual education and bilingualism. *Review of Research in Education*, *40*, 821-883. https://doi.org/10.3102/0091732X16660691

Boyle, A., August, D., Tabaku, L., Cole, S., Simpson-Baird, A. (2015). Dual language education programs: Current state policies and practices. *Office of English Language Acquisition (OELA) and Office of State Support (OSS)*.

Carlisle, J. F. & Beeman, M. M. (2000). The effects of language of instruction on the reading and writing achievement of first-grade Hispanic children. *Scientific Studies of Reading*, *4*(4), 331-353. https://doi.org/10.1207/S1532799XSSR0404_5

Calero, F. R. (2012). *Fifth-grade English language learner academic self-concept, student-teacher relationships, self-regulated learning, parental academic support, native language support, interest, usage, proficiency and academic achievement.* [Unpublished doctoral dissertation]. Dowling College.

Coletti, S. L. (2012). *The effects of transitional bilingual education versus structured English immersion instructional models on English language development as measured by the California English Language Development Test* [Unpublished doctoral

dissertation]. University of California, Santa Barbara.

Cummins, J. (1979). Linguistic interdependence and the educational development of bilingual children. *Review of Educational Research*, *49*(2), 222-251.

Darling-Hammond, L. (2007). Race, inequality and educational accountability: The irony of 'No Child Left Behind'. *Race Ethnicity and Education*, *10*(3), 245-260. https://doi.org/10.1080/13613320701503207

Darling-Hammond, L., Bae, S., Cook-Harvey, C. M., Lam, L., Mercer, C., Podolsky, A.,

Stosich, E. L. (2016). *Pathways to new accountability through the Every Student Succeeds Act*. Learning Policy Institute.

Davis, J. M. (2008). *The effectiveness of a late-exit/transitional bilingual program related to the reading achievement of Hispanic limited English proficiency elementary school students* [Unpublished doctoral dissertation]. Texas A&M University-Kingsville.

DeCamps, M. (2016). *A comparison of English language learner programs: A pilot*38 *study.* [Unpublished doctoral dissertation]. Fairleigh Dickinson University.

de la Garza, J. V. (1984). *An evaluation study of a transitional bilingual education program* [Unpublished doctoral dissertation]. University of Arizona.

Diemer, R. (2017). *Reading achievement in a dual language setting: An examination of the characteristics representative of proficient English language learners.* [Unpublished doctoral dissertation]. University of South Dakota.

Dow, P. A. (2008). *Dual-language education: A longitudinal study of students' achievement in an El Paso County, Texas school district* [Unpublished doctoral dissertation]. University of Texas at El Paso.

Driver, M. K. & Powell, S. R. (2016). Culturally and linguistically responsive schema intervention: Improving word problem solving for English language learners with mathematics difficulty. *Learning Disability Quarterly*, *40*(1), 41-53. https://doi.org/10.1177/0731948716646730

Durán, L. K., Roseth, C. J., & Hoffman, P. (2009). An experimental study comparing English-only and transitional bilingual education on Spanish-speaking preschoolers' early literacy development. *Early Childhood Research Quarterly*, *25*, 207-217. https://doi.org/10.1016/j.ecresq.2009.10.002

Durán, L., Roseth, C. J., & Hoffman, P. (2015). Effects of transitional bilingual education on Spanish-speaking preschoolers' literacy and language: Year 2 results. *Applied Psycholinguistics*, *36*, 921-951. https://doi.org/10.1017/S0142716413000568

Duval, S. & Tweedie, R. (2000). Trim and fill: A simple funnel-plot-based method of testing and adjusting for publication bias in meta-analysis. *Biometrics*, *56*(2), 455-39 463. https://doi.org/10.1111/j.0006-341X.2000.00455.x

Escatel, G. C. (2018). *A comparative analysis of third-grade, Hispanic students reading scores on the ACCESS* [Unpublished doctoral dissertation]. Capella University. Every Student Succeeds Act, Public Law No. 114-95, (2015) https://www.congress.gov/bill/114th-congress/senate-bill/1177

Farver, J. M, Lonigan C. J., & Eppe, S. (2009). Effective early literacy skill development for young Spanish-speaking English language learners: An experimental study of two methods. *Child Development*, *80*(3), 703-719. https://doi.org/10.1111/j.1467- 8624.2009.01292.x

Figueroa, L. R. (2007). *The development of pre-reading and reading knowledge in English and Spanish in a dual language education context* [Unpublished doctoral dissertation]. University of California Santa Barbara.