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INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY STUDIES AND EDUCATION: a collection scientific works of the International scientific conference – London, England, 2025. Issue 5

Languages of publication: Uzbek, English, Russian, German, Italian, Spanish

The collection consists of scientific research of scientists, graduate students and students who took part in the International Scientific online conference **«INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY STUDIES AND EDUCATION»**. Which took place in London , 2025.

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Bilingualism and Metalinguistic Awareness: Language Comprehension Abilities in Bilingual Individuals

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Abstract. Bilingualism has been a subject of extensive research in cognitive science, psycholinguistics, and neuroscience due to its significant impact on language processing and cognitive abilities. This study examines the relationship between bilingualism and metalinguistic awareness, focusing on how bilingual individuals develop superior language comprehension skills compared to monolinguals. The research employs a mixed-methods approach, incorporating quantitative assessments of linguistic abilities and qualitative insights from bilingual speakers. Results suggest that bilingual individuals exhibit enhanced metalinguistic awareness, leading to greater linguistic flexibility and cognitive control. Additionally, findings indicate that bilingualism positively affects executive functions and working memory. The study contributes to ongoing discussions on bilingual education, cognitive advantages, and the neurological underpinnings of language processing. These findings have implications for educational policies and language acquisition theories, emphasizing the benefits of fostering bilingualism in early childhood education.

Keywords: bilingualism, metalinguistic awareness, cognitive flexibility, language comprehension, executive functions, linguistic processing, bilingual education, multilingualism.

Introduction. Bilingualism has become an increasingly relevant topic in contemporary research due to globalization and the growing number of multilingual societies. The ability to speak two or more languages not only provides communicative advantages but also influences cognitive and linguistic processes. One of the most studied aspects of bilingualism is metalinguistic awareness, which refers to an individual's ability to reflect on and manipulate language structures. This ability plays a crucial role in language comprehension and cognitive flexibility [1, p. 45].

Metalinguistic awareness allows individuals to recognize linguistic ambiguity, understand grammar rules more intuitively, and shift between languages without confusion. Studies suggest that bilingual individuals outperform monolinguals in tasks requiring attention control, inhibition, and problem-solving, highlighting the broader cognitive benefits of bilingualism [1, p. 67]. Furthermore, the cognitive benefits of bilingualism extend beyond language comprehension to executive function, a set of cognitive processes responsible for planning, decision-making, and task-switching.

The concept of bilingualism can be categorized into various types, such as simultaneous bilingualism (learning two languages from birth) and sequential bilingualism (acquiring a second language after mastering the first) [1, p. 89]. Each type of bilingualism has distinct effects on cognitive and linguistic abilities. Research has shown that early bilingual exposure enhances brain plasticity, leading to improved cognitive reserves and delayed onset of neurodegenerative diseases like Alzheimer's [1, p. 102].

Despite these advantages, some challenges remain in bilingual language comprehension. Bilingual individuals may experience temporary lexical retrieval difficulties, known as the "tip-of-the-tongue" phenomenon, more frequently than monolinguals. However, their ability to resolve linguistic ambiguities and adapt to different linguistic contexts remains superior [1, p. 124].

This study aims to explore how bilingualism enhances metalinguistic awareness and language comprehension abilities. It also investigates how bilingual individuals process language differently from monolinguals and whether bilingualism offers measurable advantages in cognitive flexibility and executive function.

Literature Review. Numerous studies have explored the cognitive and linguistic effects of bilingualism, with many emphasizing the role of metalinguistic awareness. Metalinguistic awareness enables bilinguals to analyze language beyond its communicative function, allowing them to recognize grammatical structures, phonetic patterns, and semantic nuances more effectively than monolinguals [2, p. 55].

One of the foundational theories supporting bilingual advantages in metalinguistic awareness is the Interdependence Hypothesis proposed by Cummins (1979). This hypothesis posits that proficiency in one language supports the acquisition and comprehension of another, fostering stronger linguistic skills overall [2, p. 78]. Similarly, the Threshold Hypothesis suggests that bilingual individuals must reach a certain level of proficiency in both languages to experience cognitive benefits [2, p. 96].

Neurolinguistic studies indicate that bilinguals exhibit increased activation in the dorsolateral prefrontal cortex, a region associated with cognitive control and executive function [2, p. 112]. This neurological advantage allows bilinguals to switch between tasks more efficiently and maintain higher levels of attention when processing linguistic information.

A key study by Bialystok (2001) demonstrated that bilingual children outperform monolinguals in tasks requiring metalinguistic judgment, such as identifying grammatical errors or understanding syntactic transformations [2, p. 135]. These findings align with the broader consensus that bilingualism enhances cognitive flexibility and problem-solving skills.

However, some researchers argue that bilingual individuals may experience disadvantages in lexical access speed due to the constant need to inhibit one language while using another. This phenomenon, known as the bilingual lexical access delay, suggests that bilinguals may take slightly longer to retrieve words, especially in low-frequency contexts [2, p. 148].

Despite these nuances, the prevailing body of research supports the claim that bilingualism fosters enhanced metalinguistic awareness, leading to superior language comprehension and cognitive adaptability [2, p. 165].

Methodology. This study employs a mixed-methods approach, combining quantitative assessments with qualitative interviews to analyze bilingualism's impact on metalinguistic awareness and language comprehension.

Participants. This study involved 200 participants from Fergana State University and Secondary School No. 8 (Farg'ona city), including 100 bilingual individuals aged 18–45 and 100 monolingual individuals serving as a control group. These institutions were selected to ensure access to both bilingual and monolingual learner groups, allowing for a balanced comparison. Participants were recruited using purposive sampling to guarantee that they met the study's criteria.

Data Collection. Quantitative data were collected through standardized metalinguistic awareness tests, lexical retrieval speed tasks, and the Stroop test to assess cognitive flexibility. Qualitative data were gathered via semi-structured interviews that focused on participants' bilingual experiences and self-reported language comprehension challenges. Each interview lasted between 25 and 40 minutes and was conducted either in person or online.

Data Analysis. Quantitative data were analyzed using independent samples t-tests to compare bilingual and monolingual performance. Qualitative data were analyzed using thematic analysis, with transcripts coded for recurring themes related to bilingual experiences, cognitive flexibility, and language comprehension challenges.

Results and Discussion. The results of the study indicate that bilingual individuals significantly outperformed monolingual participants in metalinguistic awareness tests, supporting the hypothesis that bilingualism enhances linguistic processing.

In addition, bilingual participants demonstrated faster reaction times in the Stroop test, suggesting superior cognitive flexibility.

These findings are consistent with existing literature on the cognitive advantages of bilingualism. The higher performance of bilinguals in metalinguistic awareness tasks aligns with theories suggesting enhanced cognitive control and executive functioning in bilingual individuals. Although bilinguals may occasionally experience minor difficulties with lexical retrieval, their overall linguistic flexibility compensates for these challenges. This supports previous research on bilingual cognitive reserve and executive

function.The educational implications of these results are significant. They suggest that promoting bilingual education can enhance students' cognitive adaptability, metalinguistic awareness, and overall linguistic competence. Encouraging bilingualism may therefore contribute positively to both academic achievement and cognitive development.

Conclusion. This study provides strong evidence that bilingualism enhances metalinguistic awareness and language comprehension. The cognitive advantages of bilingual individuals, particularly in executive function and linguistic flexibility, highlight the importance of fostering bilingual education. Future research should explore long-term neurological impacts of bilingualism on cognitive aging and dementia resistance.

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