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Evidence for a bi(multi)lingual advantage on working memory performance in South African university students

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Abstract

Due to linguistic diversity within South Africa, multilingualism is becoming increasingly prominent. Since South Africa is host to 11 official languages, it is the norm rather than the exception that South Africans are exposed to more than one language. This has social, educational and cognitive implications. Specifically, research indicates that the acquisition of additional languages to an individual's mother tongue has a positive effect on working memory – the short-term storage and manipulation of information during the performance of cognitive tasks – which may confer a 'bi(multi)lingual advantage' and could improve academic performance. Consequently, the aim of this study was to determine whether working memory ability differs significantly between students who are monolingual or multilingual, while statistically controlling for intellectual ability and socio-economic status between these groups. Participants were 78 undergraduate students, comprising English first- (monolingual, M_{age} = 20.06 years, *SD* = .88) and second- or additional-language (multilingual, M_{age} = 20.03 years, *SD* = 1.03) speakers, matched for age, gender and socio-economic status. Language groups were compared on the Automated Working Memory Assessment (Alloway, 2007) and subtests of the Wechsler Adult Intelligence Scale – Third Edition (Wechsler, 1997). One-way between-group ANCOVAs showed that (a) the multilingual group outperformed the monolingual group across five of six non-verbal subtests, namely Mazes Memory and Block Recall (non-verbal simple span), and Odd One Out, Mister X and Spatial Recall (non-verbal complex span), (b) the multilingual group outperformed the monolingual group on two verbal subtests, namely Digit Recall (verbal simple span) and Listening Recall (verbal complex span), (c) the language groups performed equivalently on verbal simple and complex tasks of Word Recall, Non-word Recall, Counting Recall and Backwards Digit Recall. The findings contribute to the extant literature confirming a 'bi(multi)lingual advantage' in executive functioning. Theoretical and practical implications are discussed in light of academic performance.

Keywords: working memory, monolingualism, multilingualism, bi(multi)lingual advantage, South Africa