

Influence of musical expertise on second language acquisition

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Language and music are universal among human cultures; both are conveyed by sequences of sounds organized in time, and the temporal and rhythmic aspects are highly important features of both domains. It is intriguing to note that although numerous studies have been devoted to analyzing factors affecting second-language acquisition, only a very limited number of studies have examined whether, in the context of language acquisition, a relationship between language and music exists. Music has tended to figure only marginally in a metalinguistic approach to second-language acquisition, although music education is one of the human activities that requires the integration of all human senses and the involvement of all cognitive processes: sensory, perceptual, and cognitive learning, memory, emotion, and auditory and motor processes.

To explore the extent to which music education influences second-language acquisition, two groups of native Polish speakers, musicians and non-musicians, were asked to reproduce thrice-repeated sentences in six languages: English, French, Italian, Spanish, Japanese, and Belgian Dutch. The speech stimuli were developed with a text-to-speech application and differed phonemically, phonostylistically, and in length. All subjects' productions were recorded, and, with data gathered from the speakers through special questionnaires, were examined with a battery of tests and analyses. Additionally, the musical skills of the participating non-musicians were tested. The paper includes the results of a general auditory analysis of the recordings as well as the results of a web-based listening test with a panel of native speakers of the involved languages. All collected data were also analyzed with statistical tools. The results revealed that music education exerted a measurable impact on speech perception and production. Musicians outperformed non-musicians in the study. Surprisingly, the most significant correlation was between the subjects' results and their general self-esteem in their learning abilities. From the results, it appears that the influence of musical expertise extends beyond music processing to speech processing, and the strength of this influence is connected not only to auditory training but also to a higher level of general self-esteem and attitudes toward learning foreign languages (observed more in people with musical backgrounds). Therefore, the superior performance of the musicians in the task may be interpreted as evidence that music education is an enabling factor in the successful acquisition of a second language within a shorter period of time and with fewer boundaries, particularly in relation to speech sounds. It means that music education affects second language acquisition. It also indicates that the impact of musical training is not a myth, but has a scientific basis.

References

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