王維君 陳靜潔

摘要

　　自閉症兒童因先天腦部功能損傷，造成廣泛性的發展障礙，在溝通與社會互動，及興趣表現上有嚴重問題，導致在學習及生活適應上皆有顯著困難。音樂多元感官的特性，可增強自閉症學童的專注與記憶力，提升其情緒控制力及人際互動；而電腦輔助教學及行動載具，易吸引自閉症學童的注意，提升其學習意願，更可提供反覆練習與即時回饋的個別化學習。因此本研究旨為探討人機互動音樂教學於自閉症兒童之應用，並針對其語言溝通、感知及運動功能、負向行為矯正與音樂能力之提升為目標。本研究招收九位六至 12 歲自閉症兒童為研究對象，運用自行開發及市售符合教學對象與需求的數位互動軟體，設計一系列音樂活動，進行三個月個別的人機互動式音樂課程，並於音樂活動介入之前後，評量前述四大指標之成效。研究結果發現，人機互動音樂活動的介入，對於提升自閉症兒童語言溝通、感知及運動功能、負向行為矯正與音樂能力四項指標皆有顯著之效益。希冀本研究結果能提供給自閉症家屬、音樂教育者、心理輔導人員及音樂治療師具體依據與研究參考。

關鍵詞：人機互動、自閉症、音樂治療、音樂教育、移動式系統應用程式

Abstract

Because of the inborn neural damage, children with autism have difficulties in social interaction, and verbal communication, which in turn causes more problems in learning and adapting to social environments. Music, with its multi-sensory nature, might be useful to autistic children for increasing concentration and memory, emotion control and better interpersonal relationship. Computer-assisted instruction via portable devices is more likely to draw autistic children's attention to learning than conventional ones. They are beneficial for students to practice repeatedly and to get immediate feedback. This study therefore proposed to explore the effect of human-computer interactive music instruction on elementary school children with autism. It was aimed at increasing oral communication, enhancing perceptual and psychomotor function, correcting problematic behavior, and improving music ability. A series of computer-based music activities were designed and given to individual teaching as an experiment. Nine elementary school children with autism were recruited and participated in this study for three months. Results showed that these nine autistic children made obvious improvements in aspect of oral communication, perceptual and psychomotor function, music ability and problematic behavior modification. The findings will give some insight to those who are concerned about autistic children.

Keywords: human-computer interaction, autism, music therapy, music education, APP