

# **A Case Study on Integrating Soundbeam Technology and Music Activities to Enhance a Child with Disabilities Development of Motor Skills and Attention Span**

## **Abstract**

Soundbeam has had dramatic effects in the field of disability and special education. Even children with significant impairments are, with the most minimal movements, able to create exciting and beautiful sounds. The purpose of the study is to examine the use of Soundbeam Technology in enhancing young children with disabilities motor skills and attention span. The methodology of the study used a quantitative analysis to measure validity based on assessment scales used in the observation forms by four observers and a qualitative study using interviews with parents and researcher's teaching log. A 4 year-old participant with Williams Syndrome was selected by purposive sampling to participate in the research. The duration was 20 weeks with 30-minute instructional sessions twice per week. Both qualitative and quantitative methods were used to obtain the results. The results showed the efficacy of using Soundbeam and music activities to develop the young child's motor skills. Especially while using visual software and Soundbeam equipment together, the participant became more interested in movements. Furthermore, the young child's attention span was also improved through the assessment of music activities.

**Keywords:** Soundbeam, Music Activities, Williams Syndromes, Motor Skills, Attention Span

# 整合聲音光束科技和音樂活動促進一位特殊幼兒肢體動作 與注意力之個案研究

## 中文摘要

聲音光束在特殊教育領域具有極其引人注目的效果，即使是僅具有最低肢體動作能力，相當重度之幼兒，也能創造出令人興奮與美麗的聲音。本研究之目的在檢驗聲音光束科技對於促進特殊幼兒肢體動作與專注力之功效。本研究主要採質性研究之「個案研究法」，資料蒐集方式以參與觀察與訪談為主，除了以質性方式蒐集與分析資料之外，再以量化數據為輔，量化數據由四位受過專業訓練之研究生根據量表評分，質性則以家長與幼稚園教師訪談紀錄和研究者教學日誌為資料蒐集來源。研究對象以立意取樣，選取為一位四歲患有威廉氏症之幼兒參與研究教學。研究期限為 20 週，每週兩次，一次為 30 分鐘。根據質與量之資料分析出結果。結論顯示聲音光束與音樂活動對特殊幼兒肢體發展的正向效果，尤其是當加入視覺軟體於聲音光束音樂活動中，研究對象之學習動機不僅加強，對於其專注力更有加強之功效。

**關鍵字：**聲音光束、音樂活動、威廉氏症、肢體動作、專注力