

## ANALYSIS OF THE IMPACT OF USING VOICE CONNECTING BOX ON CHILDREN'S CONCENTRATION AND FOCUS IN LEARNING THE TRUTHS OF SOUND LANGUAGE IN AL-QURAN EDUCATION

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### Abstract

This study examined the effectiveness of Voice Connecting Box (VCBox), an audio management technology, in enhancing concentration and pronunciation accuracy during Quranic learning among elementary school children. Using a mixed-methods approach with a randomized controlled design, 60 students (ages 7-12) were divided into experimental (n=30) and control (n=30) groups, with the experimental group using VCBox during 12 weeks of Quranic learning sessions. Data were collected through Hijaiyah Pronunciation Accuracy Tests (HPAT), systematic classroom observations, questionnaires on learning environment perceptions, and qualitative interviews. Results demonstrated that the experimental group showed significantly greater improvement in pronunciation accuracy scores (16.74 points vs. 5.66 points,  $p < 0.001$ ) and focus duration (from 12.3 to 21.8 minutes vs. 12.5 to 15.1 minutes for control group). Strong correlations were identified between sound detail awareness and pronunciation accuracy ( $r = 0.82$ ), and between focus duration and learning outcomes ( $r = 0.78$ ). Qualitative analysis revealed four dominant themes: enhanced auditory awareness, reduced cognitive load, personalized learning experience, and implementation challenges. These findings indicate that controlling auditory input through VCBox significantly improves children's concentration and pronunciation accuracy in Quranic learning by optimizing the auditory environment and reducing cognitive load. This research contributes to the integration of cognitive neuroscience principles into Islamic education practices and supports technology-enhanced approaches for improving Quranic learning outcomes.

**Keywords:** Voice Connecting Box (VCBox), Quranic learning, pronunciation accuracy, cognitive load, auditory processing

### INTRODUCTION

Learning the Quran for children requires a high level of concentration and auditory sensitivity. The ability to listen, distinguish, and pronounce the sounds of the hijaiyah letters correctly is an important foundation in reading the Quran (Arshad et al., 2020). In the context of Islamic religious education, the accuracy of pronunciation (makhrāj) and the application of correct tajwid rules are crucial aspects that determine the quality of a person's reading of the Quran (Mohamed et al., 2024). However, in the digital age full of auditory distractions, children face great challenges in maintaining focus and concentration during the learning process.

Recent neuroscience research suggests that children are more susceptible to auditory distractions than adults. According to Klatte et al. (2013), "Background noise, such as overlapping conversations or classroom noise, significantly reduces children's ability to process auditory information by up to 40%, compared to only an 11% reduction in adults." (Klatte et al., 2013, p. 326). This situation certainly has a negative impact on children's ability to absorb fine details in language learning and pronunciation, including in the context of learning the Qur'an.