

# **Efficacy of technology-aided speech therapy for the management of speech sound disorders**

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## **Background:**

Children with speech sound disorders constitute a significant proportion of Speech-Language Pathologists' (SLPs) caseloads. With a workforce shortage of SLPs, the use of technology in speech-language pathology may offer a solution to service access issues, particularly for families living in rural and remote areas. Despite the prolific number of technology-aided speech therapy (TAST) programs that have been developed in this field, few are supported by empirical research to demonstrate their clinical efficacy. The purpose of this critical review is to describe the current state of knowledge in the field of TAST and future directions for its use in the management of SSDs.

## **Methods:**

Studies reporting the efficacy of TAST programs were identified via a systematic, computerised database search. Key study characteristics, results, main findings and details of the TAST program under evaluation were extracted from each study. The methodological quality of each of the studies was evaluated using a structured critical appraisal tool.

## **Results:**

12 studies were identified and 12 technology-aided speech therapy programs were evaluated. The results showed that technology-aided speech therapy is associated with positive clinical changes for some children with speech sound disorders.

## **Discussion:**

The TAST programs evaluated within the 12 studies hold promise for the speech-language pathology profession; however they do highlight a need for collaborative research between computer engineers and clinicians, particularly during design and development stages of TAST programs. Evaluation using rigorous experimental designs is required to understand the benefits of using TAST in the management of speech sound disorders.