

Using a Computerized Stuttering Treatment Program to Supplement Fluency Shaping Therapy

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Fluency-shaping procedures for stuttering have been accepted as effective and reliable strategies for enhancing the distorted speech patterns of individuals who stutter. It has been well documented that therapeutic techniques incorporating rate reduction, respiratory control, gentle voice onsets, as well as proper articulatory postures are effective forms of treatment for stuttering when applied in a systematic and comprehensive program. Inherent in fluency shaping programs are principles of learning that include reduced response variability and immediate instructional feedback as the client progresses through the various steps of the treatment approach.

Recently, one of the authors (Kroll) has been involved in the development of a computer program that presents speech therapy techniques to the client using speech recognition and analysis. The program, known as Dr. Fluency, was first introduced to Canada at the Clarke Institute of Psychiatry and continues to be tested at the Stuttering Centre of the Speech Foundation of Ontario. Clients are introduced to the various units of the program as they proceed through intensive treatment. They are then asked to provide feedback as to the effectiveness of using the computer as compared to completing their speech exercises without computer assistance.

The study surveyed 29 individuals who stutter as they participated in the intensive behavioural treatment program. All subjects were male and ranged in age from 14 to 50 years. Stuttering severity ranged from mild to severe. The 29 subjects represented a total of five treatment groups. A 19-item questionnaire utilizing a five point rating scale was developed by the authors. This questionnaire asked subjects to rate their opinions regarding computers in general as well as the Dr. Fluency Program specifically (see attached). The questionnaire was completed on the last day of the fluency shaping treatment program.

This paper will highlight some of the major findings of the survey. Results will be discussed with reference to subjects' ratings of visual learning, computer feedback, and overall satisfaction level with computerized training.

- 69% of the subjects indicated that they learn better through visual demonstration than through verbal explanation
- 90% of the subjects indicated that the Dr. Fluency demonstrations preceding each unit are helpful
- 86% of subjects indicated that the computer's on-line easy onset curves were more effective than traditional biofeedback devices (e.g., voice monitor)
- 86% of the subjects indicated that their accuracy in achieving specific speech targets such as prolonged syllables was facilitated by utilizing Dr. Fluency
- 86% of the subjects indicated that all feedback provided by the Dr, Fluency program was generally useful

The data from this study indicate that the Dr. Fluency stuttering treatment program provides a powerful tool for facilitating fluency-shaping training. Subjects expressed a high level of satisfaction with both the demonstration and trailing aspects of the program. It has been reported by clients in the past that fluency-shaping exercises are not generally highly interesting. It is felt that the Dr. Fluency program serves to better motivate clients as they progress through treatment and as they are provided with a complete and accurate indication of their progress. The authors hope to incorporate more aspects of the program within training sessions and eventually to replace existing conventional hardware.

Percentage of Clients Who Believe They Learn Better Through Visual Demonstration than through Verbal Explanation

