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Paper in Conference Proceedings
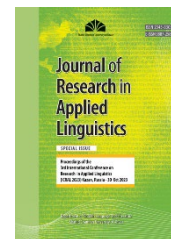
A Review of Methods to Overcome Speed and Rhythm Disorders of English Speech in Children

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Abstract

Since antiquity, tempo-rhythmic speech disorders in the English language have been recognized, and ancient and medieval treatises (Plutarch, Aristotle, Avicenna) have addressed this issue. An extensive investigation into speech fluency disorders in the English language started in the 19th century. Treatment approaches were tested, and the causes of the disorders were primarily identified and categorized. The exact mechanism underlying the onset and progression of tempo-rhythmic disorders of the English language, particularly stuttering, remains unclear despite the best efforts of numerous scientists. This is linked to illness relapses and the potential loss of positive dynamics following remedial training. An overview of techniques for treating children's tempo and rhythm disorders of speech is provided in this article. The authors focus on methods related to rhythmization of speech, selecting the best speaking tempo and intonation at the first stage of correction, and employing technical means that are in the contentious area of foreign studies.

Keywords: English language; Tempo-Rhythmic; Speech Disorders.

1. Introduction

The lexical and grammatical structuring, the articulatory-respiratory program, and a complex of prosodic features all work together to form the tempo-rhythmic organization of oral speech. The scientific literature states that between 1% and 5% of people worldwide are unable to start and maintain their speech production at the ideal rate and rhythm during oral communication. The conversational flow is disrupted by a slow or fast pace, convulsive or non-convulsive hesitations, and unjustifiably long pauses, which leave a bad impression on the other person. This makes patients uncomfortable speaking, makes them feel inadequate, and makes them want to be alone. Tempo-rhythmic speech disorders are classified as mild, moderate, or severe depending on severity and nosology, which separates them into non-convulsive and convulsive categories.

Speech pathologists, who have spent centuries researching speech fluency disorders, have tried a variety of methods, strategies, and tools to try and treat the condition. Drug therapy, herbal medicine, stress management, reflexotherapy, hypnosis, auto-training, logorhythmics, theatricalization, physiotherapy, massage, speaking under a metronome, chanted speech, relaxation techniques, and breathing exercises are some of the techniques used to treat tempo-rhythmic disorders of the English language. The techniques of family psychological and educational rehabilitation for stutterers, as well as self-therapy and self-regulation of logoneurosis Fraser et al. (1993), are described. Treating tempo-rhythmic pathology as a complex multifaceted phenomenon is made possible by the use of an integrated approach, which has been recognized as effective by many authors in recent years. Consequently, to implement the influence at various levels: articulatory, psychological, tempo-rhythmic, physiological, and organizational. Popular techniques for treating tempo-rhythmic speech disorders in the English language, and most importantly, stuttering in children, are based on this integrated approach. Let's focus on the key areas where these exercises are flawed.

2. Literature Review

A severe psychophysical speech disorder, stuttering can persist for years due to chronification and lack of necessary support. It typically affects children during a period of intensive speech function development. The British Stammering Association estimates that 1-3 percent of Europeans experience some kind of neurotic speech disorder. In Ukraine, a similar circumstance likewise arises. The pathophysiology and etiology of stammering, however, have not yet received enough attention. This also holds true for the pathogenetic and pedagogical correction mechanisms. Fluency disorders and particular alterations in speech rhythm, pace, and melody are among the speech disorders linked to stammering. It is well recognized (Ivanova-Lukyanova, 2000) that rhythm, which is intimately linked to pace, controls intonational structures in oral speech. Speech rhythm serves a communicative purpose by correlating meaning with rhythm and being grounded in physiological principles.

Degree to which its nature is understood (Yurova, 2012). Stuttering correction is very important when considering its many facets and the importance of the outcomes. New educational technologies are emerging these days to help teach preschoolers who stammer. Theater activities are a significant part of the stammering correction techniques that involve the use of various forms of art because they meet the child's needs in a sensitive way when it comes to gaming, help them understand the world more clearly, and encourage wide group interaction (Sorokina, 2002). These findings are based on a content analysis of special literature. Nevertheless, there is currently no scientific evidence to support the use of tempo rhythmic organization of speech in gaming exercises and theatrical activities as a method of speech correction, particularly for stammering correction (Behas et al., 2019).

3. Methodology

The study employed a variety of theoretical approaches, including the analysis of correctional programs and techniques, the study of scientific literature, the classification of tempo-rhythmic disorders of the English language, and observation of contemporary pedagogical practices (such as finger gymnastics and art therapy); the study of video materials on the correction of speech pathologies, including webinars from the Speech Center in Zelenograd, the online speech center "foreign Speech," and webinars featuring eminent speech pathologists. The study's methodology was derived from the works of (Wiesel, 2018; Shipkova, 2019) on neuropsychology and neurophysiology.

4. Results

Working on intonation is a crucial component of all the strategies used to treat tempo-rhythmic speech disorders. While some authors believe that stutterers should be taught expressive, emotional speech from the very beginning of their lessons, others approach this more gradually by having students practice monotonous, monodynamic speech—that is, speech that is dynamically neutral and devoid of tone rises and falls. While such detached speech may sound a little forced, it enables one to rapidly lessen the quantity and force of the convulsive contractions of the speech apparatus that occur when stuttering. Numerous authors discuss the necessity of 2-4 times the normal speech utterance rate in remedial classes for stutterers. According to experimental data, stuttering is negligible at a speech rate of roughly 50 syllables per minute. For instance, Wiesel (2018) contends that a person must speak at a normal or nearly normal pace when performing any kind of work. The development of speech utterance rhythm is a crucial aspect of achieving expressive intonation. The use of a metronome makes this easier. Accordingly, Wiesel (2018) is hesitant to regard speech rhythmization as the primary focus of remedial work with stutterers, giving them a secondary role of additional techniques. First, the researcher uses body-oriented techniques to teach a child how to correctly segment phrases into their semantic components, or syntagmas (Povarova, 2004).

Many writers agree that the best way to correct any tempo-rhythmic disruptions in fictional characters is to sing or recite poetry both with and without music. Exercises involving logorithms, playing easy instruments, marching and walking while performing jumps, squats, and dancing to music are beneficial. However, it is important to consider the contingent's specifics when carrying out these exercises. "Tonic sets of movements for the arms, legs, and torso in combination with breathing voice exercises, which are carried out first at an average and then at an accelerated pace" are part of the physical training in bradilalia, according to Johnson et al. (2019). Dialogic speech is realized when practicing both plot and non-plot mobile games. Conversely, it's advised to perform tachilalia gymnastic exercises slowly, while counting, to pleasant music, methodically, and fluidly. According to L.S. Volkova, developing slow, rhythmic breathing and voice formation, rhythmic reading, composed, rhythmically ordered speech, sentiments of collectivism during verbal

communication, and auditory attention are all necessary for overcoming tachilalia. She suggests performing remedial work gradually.

The first phase involves the students being in a silent mode in order to eliminate their unsettling excitability. Kids should stick to the most essential phrases when they're not in class or at home. The easiest speech material is the first to be assimilated slowly in the classroom. The assimilation of a slow pace on the loud reading material is the second stage. After a speech exercise, the class works both individually and in groups. It is suggested that all psychomotor processes be slowed down, including movements, the formation of associations, and responses to the outside world. The third step involves editing the ideas that have been expressed. This includes precise recounting of what was read both with and without a plan, as well as practice pronouncing a single word in several ways. The creation of a group narrative is the fourth step. Everyone pays close attention to their friend, and when the speech therapist signals, they all join in on the story. Reading aloud slowly to oneself, learning to read rhythmically, practicing speaking while striking the hand, foot, or clapping, recording one's voice, and listening to the appropriate speech are all included. Preparing to speak in front of an audience is the fifth step. The majority of remedial methods focus on helping kids who stutter overcome it.

5. Discussion

Wiesel developed the first techniques for working with preschoolers who stutter (2018). The foundation of classes is the idea of gradually increasing the complexity of speech exercises. Seven distinct speech types are identified by Johnson et al. (2019) and progressively incorporated into the correctional process: conjugated speech, reflected speech, answers to questions about well-known pictures, independent description of well-known pictures, oral retelling of a short story, spontaneous speech, and normal speech. The process of re-educating stuttering children's speech is broken down into three stages by Johnson et al. (2019): 1) exercises in joint and reflected speech, in pronouncing memorized phrases and poems; 2) exercises in oral description of pictures, answering questions, compiling an independent story on a set of pictures or on a given topic, or recounting the content of a story or fairy tale read by a speech therapist; and 3) consolidation of the acquired skills of fluent speech in normal conversation with nearby children and adults, during games, classes, and conversations. Many contemporary systems make use of Johnson et al. (2019)'s methodological concepts and techniques. Fraser et al. (1993) provide a method for breathing exercises, voice exercises that are playful, and tasks for teaching speech coordination with different movements intended to correct speech tempo. This part of the work is given top priority by the author.

The approach used by Fraser et al. (1993) is predicated on teaching autonomous speech during a manual activity. Fraser et al. (1993) divided speech education into five phases: the propaedeutic stage, which uses visual objects and actions to accompany speech; the finalizing speech about the action performed; the preceding speech, which does not rely on the previous action; and the standardization of active speech or contextual speech. Pellinger & Assumption (1995) offer a method for plot games, acknowledging the situational nature of stuttering and the disruption of children's speech's communicative function. The first step in the correction, according to the authors, is to role-play plots with a fictional interlocutor. This allows for the proper speech behavior in real-world peer communication scenarios. Following that, common topics are covered, and at the conclusion of the course, role-playing games are introduced. The speech therapist encourages speech activity, gives instructions on actions to take, and suggests the game's plot. Fraser et al. (1993) developed a technique primarily intended for use with pediatric patients in medical facilities. According to the author, a speech therapist should always be creative in their work, so each child should receive a unique approach in order to determine the best ways to help them overcome stuttering.

Fraser et al.'s (1993) methodology reveals the importance of differentiated psychological and pedagogical methods of instruction and training. The following sections comprise her intricate work system for stuttering children between the ages of 2 and 7: 1) the game activity methodology; 2) logorhythmic classes; 3) educational classes; and 4) the effect on children's microsocial environments. The following categories of games are employed: creative games designed by kids and recommended by speech therapists; games with singing; games on the go; games with rules; staging games based on poetry and prose texts; games on table tennis; games with rules. The lesson is structured with a single plot so that each section reflects the subject matter of the program. The Pellinger & Assumption (1995) methods involve the use of game techniques to facilitate relaxation exercises. These techniques include relative silence mode, correct speech breathing formation, communication in short sentences, activation of a detailed phrase, staging, and free verbal communication.

It's important to pay attention to the stuttering treatment techniques that make use of electronics and computer programs. The foundation of feedback masking (MAF) is the idea that stutterers are capable of speaking clearly when they are unable to hear their own words. The patient's speech is muffled in headphones by special devices that produce noises at a specific frequency. Approximately half of those treated with noise stop stuttering, according to the MAF developers. DAF is the second hardware correction technique. The patient's voice is output to the headphones by a computer program, and the delay is measured in fractions of a second. Stutterers are taught to draw out vowels and slow down their speech at the first stage, which involves using lengthy sound delays. This gets rid of even the worst stuttering. The device adjusts speech for longer delays first, then adjusts for shorter delays, speeding up speech until it returns to normal. Experts calculate that the method is 60% effective. FAF is an additional acoustic technique. With this technique, the patient's voice tone is altered in headphones relative to his natural voice at a different frequency. The same 60% is thought to be the method's effectiveness. FAF is most frequently used in conjunction with DAF to boost its efficacy, which allows for the complete cure of stuttering in 80% of patients. Both adult and pediatric stuttering can be corrected with these techniques.

6. Conclusion

Numerous techniques for treating tempo-rhythmic speech disorders in the English language have been developed by foreign scientists. The range of suggested techniques and influencing factors makes it possible to apply the best correction strategy for each unique situation. The impact can be amplified by adding strategies from the art therapy toolkit, such as breathing exercises by Fesenko and Lokhov (2015), the phonopedic method by Fraser et al. (1993), sophisticated vocal-speech and emotional-motor culture education methods by Fesenko and Lokhov (2015), and theatrical activities. A metronome was used in the Stager et al. (1997) methodology to facilitate the development of the skill of fluent speech. The majority of the lessons focused on pronouncing speech structures very slowly while following the beat of a metronome. The patient's stuttering was lessened by breaking words down into syllables, and the rhythm was soothing to them. Scientists in St. Petersburg have proposed a novel approach to treat stuttering in adults and children (Fesenko and Lokhov, 2015). Through a complex process involving directed external influences through feedback, they were able to restore the disrupted structural interaction and psychopharmacologically activate brain reserves. Game techniques are used in the treatment process, which is based on the effects of light and sound impulses, rhythmic speech, and suggestive influences. The method has many detractors despite the authors' citation of data demonstrating its high efficiency.

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