Digital Applications Supporting Speech Therapy: Speech Therapists and Parents Insights

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Abstract. The paper presents perceptions and feedback from speech therapists and parents embracing the idea of using digital tools in improving the language of the children with speech disorders. The authors investigated the perception of speech therapists and parents and their readiness to use digital tools in speech therapy starting from several digital applications from the domain. The feedback was positive, 88.3% of the parents agree to use digital apps at home, between face-to-face speech therapy sessions coordinated by speech therapists and 75% of parents agree to use them several days a week.

Keywords. Digital application, speech therapist, speech disorder.

1. Introduction

The impact of technology in our lives is one of the most controversial topics, specialists in IT, parenting, education or health vehemently arguing its positive or negative aspects. Regardless of the position we take on this topic, we cannot deny the important role of technology in education. The educational context hit in recent years by the COVID-19 pandemic reinforces this statement, as education could no longer be perceived or achieved without technology. At the same time, we observe how the culminating progress of information and communication technologies has made possible the transfer, the transition from e-learning (with the help of the computer) to/ mobile-learning (with the help of mobile phones, tablets, etc.) [1,2].

The speech therapist had to turn their attention to the potential of creating tools and resources in speech therapy. The advantages of using these digital applications are multiple for speech therapists and children [3]. The integration of digital applications in speech therapy offers significant benefits alongside notable challenges, as reflected in recent studies. Digital tools, including therapeutic games like "Apraxia World," have been shown to enhance children's motivation and improve pronunciation by providing

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an engaging, interactive environment for speech therapy [4]. Automated pronunciation evaluation embedded in these tools has demonstrated superiority over traditional methods, indicating their potential to complement conventional therapy practices [4]. Furthermore, digital games facilitate parental involvement, allowing home practice and reducing the workload of speech-language pathologists (SLPs). These games offer immediate feedback, aiding children in tracking their progress and maintaining motivation. Additionally, the adaptability of digital games allows for customization to address specific speech disorders, thereby increasing the effectiveness of therapy [5].

In [6] as conducted a scoping review on the use of videos and digital media in parentimplemented interventions for children with primary language or speech sound disorders (LD/SSD). Their findings indicate that while these media positively impact parent-child interactions, the research in this area remains limited, particularly concerning asynchronous content and the role of parents as learners. In [7] it was developed a speech production corpus to support the development of computer-based speech therapy tools for Portuguese children with signatism. This corpus, which includes annotated speech samples from children with speech sound disorders, is valuable for creating and evaluating speech therapy technologies.

However, limitations exist. Many digital applications are not designed for sustained long-term use and often lack essential interactive features necessary for maintaining engagement over time [8]. The acceptance and utilization of these technologies by SLPs are influenced by their perceived usefulness, ease of use, and the level of technical support and training provided [1]. The COVID-19 pandemic has expedited the shift towards digital solutions but also underscored the need for improved accessibility and resources to ensure sustainable practice in the long term [2].

For the effective implementation of digital media in therapy, optimal conditions are necessary, including targeted training that improves therapists' practical skills and expectations of these tools. Emphasizing technology training in professional development can enhance therapists' confidence and willingness to integrate digital tools into their practice. The research underscores the potential of digital media to enhance therapeutic practices and the importance of addressing both acceptance and practical implementation challenges [9].

In [10] is described the challenges and opportunities of tele-speech therapy before and during the COVID-19 pandemic. Although the benefits brought by the use of speech therapy platforms and applications are hard to dispute, it is necessary to remember their negative aspects as well. Unfortunately, in Romania most speech therapy platforms are paid. On the other hand, regarding the applications that can be downloaded on the phone or tablet, they can be free but they are mainly in English, some may be adapted and used in speech therapy specific to the Romanian language, others not.

2. Material and Methods

The present study was designed for speech therapists and parents of beneficiaries of speech therapy, to find out the willingness of both speech therapists and parents to use digital applications as a tool in speech therapy. For creating the interview and the questionnaire for the speech therapists and parents in Romania, and for choosing the questions was operationalized the concept of digital applications in speech therapy with the variable attitude of parents towards the use of speech therapy applications. As

indicators were chosen - the perception of usefulness, convenience, efficiency, degree of adaptability of digital applications and parents' involvement in the therapeutic process.

For creating the interview and the questionnaire for the speech therapists and parents in Romania, we studied some digital applications or platforms which can be used for children with speech disorder and, such as Wordwall platform [11], TIMLOGO platform [12], Logopedix platform [13] and, VoxiKids [14].

Because most children are attracted to technology, spending a lot of time using digital technologies, it would be advisable to use them for educational or therapeutic purposes, coordinated by the speech therapist both face to face during the speech therapy session and remotely. For children undergoing speech therapy, the period between therapy sessions can reach up to a week. During this time, if they had access to an interactive digital application, easy to use, attractive and with realistic graphics, the motivation to recover would increase significantly.

In this study participated 70 subjects - 10 speech therapists from County Center for Resources and Educational Assistance (CJRAE) Arad, Romania and 60 parents whose children attend speech therapy sessions. We used Google forms to collect the answers we performed an analysis of the perception related to use digital applications.

3. Results and Discussion

The speech therapist received an interview with 11 questions and the parents of the beneficiaries in speech therapy received a questionnaire with 10 questions.

All the speech therapists said that they are using digital applications in speech therapy, mentioning that they use interactive games, mobile applications, Wordwall platform, Kahoot and different educational platforms available on the market.

Following the interview, it was found that speech therapists are open to using digital applications as a tool in speech therapy. It has also been observed that their use motivates and stimulates speech therapists' commitment to speech therapy, being attractive and engaging for children. As disadvantages, it would be the fact that speech therapists spend a lot of time using digital technology, the reluctance of parents towards digital applications and the rather high cost of their subscriptions.

When the speech therapist was asked what challenges feels in the use of digital applications for speech therapy, they answered that it is related to the fact that they have a problem with the effective management of their use. It depends on the tact and skill of the speech therapist to combine them effectively in the therapy so that they do not dominate but are only a useful tool or reward for the children. Also, another problem is the fact that most speech therapy platforms and applications should be paid, which is understandable, but it is a disadvantage for children.

The questionnaire with 10 questions which was completed by the parents of beneficiaries of speech therapy. The questionnaire was a Google Forms where the parents access the questionnaire using a link, the questions was related if the parents agree to continue speech therapy at home, between speech therapy sessions, under the guidance of the speech therapist; if the parents thinks that the digital application can improve his/her child's commitment and interest in continuing the speech therapy at home, under the guidance of speech therapist. Some of the results was presented in [11] related some of the questions for the parents: 88.3% of the parents agree to use digital apps at home, between face to face speech therapy sessions coordinated by speech therapists and 75% of parents agree to use them several days a week.

The fact that 68.3% of parents believe digital applications could improve their child's commitment and interest in continuing speech therapy at home suggests a strong positive perception of technology as a motivational tool. From a psychological perspective, this aligns with the idea that interactive and engaging digital tools can enhance intrinsic motivation in children by providing immediate feedback, rewards, and an interactive learning environment. The 3.4% of parents who are uncertain may indicate a recognition of potential benefits but also reflect concerns about the adequacy of digital applications in maintaining sustained interest, which might be influenced by the child's individual characteristics, such as attention span and learning style. The small percentage (28.3%) of parents who disagree may stem from skepticism regarding the effectiveness of technology in comparison to traditional methods or a lack of familiarity with digital tools.

The result that 56.7% of parents believe digital applications can be customized to fit their child's individual needs in speech therapy highlights the importance of personalized learning. This indicates that over half of the parents recognize the potential for digital tools to adapt to the specific challenges and progress of their child, which is crucial for effective therapy. However, the 5% who are unsure suggest that while parents may see the value in customization, they may also doubt whether current technologies are advanced enough to offer the level of personalization required for effective speech therapy. The 38% who do not believe in this capability may either have had negative experiences with such technologies or perceive the needs of their child as too complex for digital solutions.

A striking 86.7% of parents would want to use customized digital applications for speech therapy at home, provided they are guided by a speech therapist. This suggests a high level of trust in the combination of professional guidance and personalized technology, indicating that parents are likely to embrace digital solutions when they are assured that these tools are tailored to their child's needs and supported by expert supervision. The relatively low percentages of "I am not sure" (6.7%) and "No" (26.6%) responses could reflect concerns about the actual effectiveness of these tools, logistical challenges, or a preference for in-person therapy.

Most parents (81.7%) believe that digital applications could facilitate more practical exercises and rehearsals for their child at home, indicating a strong recognition of the benefits of repeated practice and reinforcement outside the traditional therapy setting. This aligns with psychological theories that emphasize the importance of repetition and practice in learning and skill acquisition. The 3.3% who are unsure might be questioning the quality or appropriateness of the exercises provided by digital applications. The percentage (15%) who disagree could be indicative of a belief that exercises provided digitally might not meet the unique needs of their child, and could be useless to be used without direct supervision of a specialist.

4. Conclusions

The use of digital applications in speech therapy can bring multiple benefits to both beneficiaries of speech therapy and language therapists. These can be adapted in speech therapy to suit the needs of each speech therapist. Speech therapists can create personalized programs, considering the developmental level and specific abilities of the speech therapist. This allows for tailored, effective and personalized therapy. Digital apps can also provide tools to monitor and evaluate patients' progress in real time. Speech therapists can monitor speech therapists' performance and progress throughout therapy and adjust intervention based on identified needs.

Children, in particular, are drawn to technology and interaction with digital devices. The use of digital tools in speech therapy can increase the engagement and motivation of speech therapists, as they can offer a wide range of exercises and activities; this variety can keep speech therapists interested.

As it is presented in this paper the speech therapists and beneficiaries of speech therapy are open and enthusiastic to use digital tools that will ultimately improve children's language together with other therapies. They considered that in this way it would increase the interests of the children in resolving the tasks they received, learn by playing, offer multi sensorial experience, learn to read, to listen and to respond. The disadvantages are: that the children spend too much time in front of the device, the fee for the digital platform, and the lack of human contact and real-time adaptation of exercises according to the needs and particularities of the child.

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