Argument of the Utility of Educational Software in the Structuring of the Speech Pediac Intervention Program

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Abstract: Objectives: The purpose of the research was to investigate the attitude of specialists in the field of special psychopedagogy and psychology in relation to the usefulness of using educational software in speech therapy in communication processes. **Prior work:** In the literature, there are studies that support reduced intervention times, the attractiveness of learning activities for students, the ease with which the therapist can manage the assessment, the intervention, but also the child's progress through the use of educational software. **Approach:** A questionnaire was created based on the specialized literature by analyzing several materials. **Results, implications and value:** Following the analysis and centralization of the answers given to the present questionnaire, the need for the training of specialists regarding the use of technology in the speech therapy process emerges. However, efforts are being made to improve the efficiency of work in the corrective-restorative process of language on the part of psychopedagogues and psychologists, as evidenced by the high averages from most of the questionnaire items.

Keywords: educational resources; Logopedix; mental impairments; questionnaire

1. Introduction

The digital revolution is rapidly transforming health care and clinical teaching and learning. Compared to other medical fields, the interdisciplinary fields of speech and language pathology (Lincă, 2016, 2018, 2019), phoniatrics, and otolaryngology have

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been slower to adopt digital tools for therapeutic, teaching (Matei & Lincă, 2019), and learning purposes—a process that has recently been accelerated by the COVID-19 pandemic (Abassi et al., 2020; Foloștină et al., 2020; Dai et al., 2017).

Although many current teaching and learning tools have restricted or institutional-only access, there are many openly accessible tools that have remained largely unexplored (Matei, 2022; Liu, 2022).

In order to find, use and evaluate such resources, it is important to be familiar with the structures, concepts and formats of existing digital tools (Carantina & Totolan, 2007; Linca & Matei, 2023).

In the literature, there are studies that support reduced intervention times, the attractiveness of learning activities for students, the ease with which the therapist can manage the assessment, the intervention, but also the child's progress through the use of educational software (Alazzam el al., 2021; Matei & Lincă, 2019).

The purpose of this research was to investigate the attitude of specialists in the field of special psychopedagogy and psychology in relation to the usefulness of using educational software in speech therapy in communication processes.

The general hypothesis of this study is: We assume that through the use of educational software in the therapeutic process of language correction, the work of the psychopedagogue and the psychologist becomes effective.

2. Materials and Methods

A questionnaire was created based on the specialized literature through the analysis of several materials.

This tool consists of two parts. The first part was related to the demographic information of the specialists in the field of special psychopedagogy and psychology, being made up of items that tracked data such as age, gender, type of employment contract, type of institution, background, seniority, etc. and the second part was made to collect information related to the attitude towards the usefulness of using educational software in speech therapy.

The questionnaire had items with predefined answers on a five-point Likert scale, ranging from 5=total agreement to 1=total disagreement for items aimed at achieving some objectives in the speech therapy process, on the one hand, but also a Likert

scale of from 1 to 10 for the items aimed at satisfying some educational needs of students through the use of educational software in the therapeutic process.

In order to determine the validity and content of the questionnaire, a series of 23 items were translated and adapted to the specifics of the Romanian language. A psychopedagogue and a clinical psychologist, as well as a pediatric neurologist and a translator contributed to the adaptation of the tool. Following the instructions of the translator, the necessary changes were made and subsequently, the items were applied to a sample of 30 specialists in the field of psychology and special psychopedagogy. Thus, the Cronbach alpha internal consistency index had a value of 0.79, which leads us to conclude that the instrument measures what it intended, so we can use it in our research.

The total score can have values between 22 and 125, and the meaning of each is:

- Between 22 and 58 we can talk about a low score, that is, the respondent has a negative attitude towards the use of software in speech therapy;

- Between 59 and 94 we can talk about an average score, that is, the respondent has a neutral attitude towards the use of software in speech therapy;

- Between 95 and 125 we can talk about a high score, that is, the respondent has a positive attitude towards the use of software in speech therapy.

In the case of our sample of 214 participants, the Cronbach alpha index was 0.86, which leads us to conclude that this instrument measured what it intended.

3. Results

Thus, we will present the results obtained following the application of this questionnaire in order to achieve the stated hypothesis and the proposed goal.

214 specialists from the field of special psychopedagogy and psychology participated in the study, 82 male and 132 female, 84 aged between 20 and 40, and 130 aged between 41 and 60.

194 of the participants come from the urban environment, and 20 from the rural environment, 51 have university education, while 163 have postgraduate education. 186 have a contract for an indefinite period, and 28 are employed for a fixed period.

75 of the participants have a working experience from a few months to 10 years, while 139 have a working experience of more than 10 years.

Most of the participants work in state institutions, 175 of them, and come from secondary schools, 106. From the private sector, most work in psychology offices 39.

164 specialists work in inclusive centers and schools.

96 of the specialists work with students with mild mental deficiency, and 56 with students with language deficiencies with/without expressive disorders, in a neurological context, clinically and paraclinically objectified.

The laptop is one of the devices most used in speech therapy, but also the most present in psychological or speech therapy offices, 176 and 178 respectively of the participants own such an object. Also, 171 of the participants use an educational software, and most use the Logopedix software, 117 specialists.

111 of the participants, 45 men and 66 women, with more than 10 years of experience in education use educational software, while only 26 with the same experience do not use any educational software.

106 participants claim that the volume of therapeutic activity using the educational software is higher, and 39 claim that it is significantly higher, while 27 of the participants claim that they can talk about the same volume and 24 claim that the volume is lower. 60 of the participants who claim that the volume of therapeutic activity using educational software is greater have more than 10 years of experience in education.

64 of the specialists with more than 10 years of experience and 35 of those with 1 to 10 years of experience working with students with mild mental impairment claim that the volume of therapeutic activity using educational software is greater.

120 of the specialists participating in our study state that they use an educational software to a large extent, and 29 state that they use an educational software to a very small extent. A neutral attitude is supported by only 28 of the specialists. At the same time, 188 of the specialists state that they easily use the educational software, as evidenced by the responses ticked in the agreement and total agreement area.

192 of the study participants said they relate more easily with students through educational software from 5 to 10, above average.

Depending on the impairment being worked with, 61 of the participants working with mild mental impairment and 35 working with language impairment had above-average scores in terms of the effectiveness of the educational software in

establishing an easier communication relationship with the student with/without expressive disorders, in a neurological context, clinically and paraclinically objective and have more than 10 years of experience.

45 of the participants work with students with language impairments with/without expressive disorders, in a neurological context, clinically and paraclinically objectified, and 93 of those who work with students with mild mental impairment are above average satisfied with the educational software they use in therapy speech therapy, they obtaining scores between 5 and 10 p.

On the item On a scale of 1 to 10, how much do you consider that using educational software can make your work easier? 189 of the specialists gave values between 5 and 10 p while only 25 of the participants claim that an educational software does not make their work easier. 20 of the specialists who do not see a work efficiency through the educational software work both with students with language impairments with/without expressive disorders, in a neurological context, but also with students diagnosed with neuro-developmental disorders (e.g. autism). In addition, 77 of the participants, who claim that an educational software is effective, very often strive to use all the capabilities of an educational software to the maximum.

Regarding the identification of students' pronunciation disorders, educational software helps 145 of the specialists a lot, and 39 of them do not, according to the answers given.

The effectiveness of educational software in identifying language disorders is limited by the type of underlying disorder the student has. For example, 15 of the 25 specialists who work with students diagnosed with autism, Rett syndrome, Asperger syndrome, in relation to the degree of impairment of intellect, affectivity and activity claim that the educational software does not identify the language problems of these children. However, in all other cases, most of the participants claim the opposite, the educational software helps to identify language disorders especially in students with mental deficiency of all grades.

149 of the participants claim that they can impose sounds with the help of educational software.

In the case of neurodevelopmental disorders, it is most difficult to set sounds with the help of educational software, 14 of the 25 specialists working in the given context face such a difficulty. On the other hand, if we talk about mental deficiency or other

language disorders in a neurological context, objectively clinical and paraclinical, most of the specialists support the usefulness of software.

155 of the participants claim that they managed to correct the children's language disorders identified with the help of educational software.

89 of these specialists work with mild mental impairment, and 30 of them with language impairment with/without expressive disorders, in a neurological context, clinically and paraclinically objective. Instead, 27 of the participants claim that they cannot correct the identified language problems with the help of software, and of these, 12 work with students with neurodevelopmental disorders and 10 with language deficiencies with/without expressive disorders, in a neurological context, clinically objective and paraclinical.

When you had to do a summative/final assessment, was it easy for you to use the educational software? 154 of the participants claim that they were able to do so, while 28 did not. 88 of those who managed to make a final assessment, work with mild mental impairment. On the other hand, in the case of children with autism, Rett syndrome, Asperger's syndrome, in relation to the degree of impairment of intellect, affectivity and activity, 11 of the specialists claim that it is not possible to talk about a final evaluation with the help of any educational software.

Were you able to correct or complete the language deficiencies identified in the child/student using the educational software? 153 of the participants claim that this fact is possible, while 28 claim the opposite. Most of those who have this difficulty work with students with neurodevelopmental disorders (10), but also with language deficiencies with/without expressive disorders, in a neurological context, clinically and paraclinically objectified (12).

This function, however, can be used successfully in most students with mild mental retardation (87).

154 of the participants state that it is easier for them to manage their time in corrective-recovery activities with the help of educational software.

By means of the educational software, 159 participants established a relationship of trust speech therapist/therapist - child/student, while 30 of the specialists have a neutral attitude related to this subject.

182 of the specialists state that the stress/anxiety of the child/student was reduced using the educational software, and 32 support the opposite, as evidenced by the distribution of scores below and above the average, i.e. above the score of 5. In

addition, digital tools are useful to communicate with students for 163 participants. On the other hand, 23 of the participants deny this fact, and 28 have a neutral attitude.

For 188 participants, the use of educational software in speech therapy is important, while for 36 of the specialists this aspect is irrelevant, as evidenced by the scores below and above the average.

184 of the specialists would recommend the use of technology in speech therapy to others.

139 of the participants (68 women and 71 men) have a positive attitude towards the use of educational software in speech therapy, 57 have a neutral attitude (48 women and 9 men), and 18 (16 women and 2 men) have a negative attitude.

In addition, 83 of the participants aged between 41 and 60 support the integration of technology in speech therapy, as well as 56 specialists whose age is between 20 and 40. 88 of the participants with a master's degree and with more than 10 years of experience in education have a positive attitude towards the use of software in speech therapy, and the fewest, 5 bachelor's and 2 PhD graduates, have a negative attitude. Most of those who have a neutral attitude have completed master's studies, 40.

4. Conclusion

Following the analysis and centralization of the answers given to the present questionnaire, the need for the training of specialists regarding the use of technology in the speech therapy process emerges. However, efforts are being made to improve the efficiency of work in the corrective-restorative process of language on the part of psychopedagogues and psychologists, as evidenced by the high averages from most of the questionnaire items.

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