



Faculty of  
Psychology and  
Educational Sciences  
"Ovidius" University  
of Constanta, Romania



# BLACK SEA JOURNAL OF PSYCHOLOGY



[www.bspsychology.ro](http://www.bspsychology.ro)



9 772068 464001



## **The speech therapy software LOGOPEDIX's application in correcting language disorders in students with C.E.S.**

**Crisan Elena**

Speech therapist, C.J.R.A.E. Constanța

[elena81crisan@gmail.com](mailto:elena81crisan@gmail.com)

**Abstract.** The specialized literature indicates the existence of successful practices in the use of information and communication technologies in general and particular education, thus modifying and diversifying the structure of the educational and recovery act. Research in the field of special psychopedagogy has identified several factors favoring the usefulness of educational software in educating students with C.E.S. In the special education units, a series of teaching aids, both classical and modern, are used in the remediation of language disorders, among which we can mention educational and speech therapy software, accessible, attractive through the intensity of colors, the presence of effects special features, transitions, animation, sound background, which attract students to the therapy and transform the speech therapy activity into an enjoyable and motivating moment. The use of multimedia in the educational system: - trains multiple senses, supports active learning and increases the value of lessons, adapts to the individual, allows the student to learn at his own pace, connects abstract knowledge to the real world, breaks the barriers between the classroom and real life, allows time migration and space. In our society's current stage of development, information technologies are successfully applied in various fields of human activity, including the recovery/education of children with C.E.S. The computer is a unique tool for individualizing and improving the learning process, which is especially necessary when working with these children.

**Keywords.** Speech therapy software, C.E.S., language disorders, Logopedix

### **Theoretical approaches regarding the usefulness of educational software from the perspective of correcting language disorders**

The correction of speech and language disorders, in general, stimulates the psychic development of the individual, and his integration into activity and life leads to the affirmation of the personality on a social and cultural level. Speech therapists are increasingly challenged to provide and perform high-quality speech therapy to correct individuals with language disorders. Any practicing speech therapist recognizes that this technique of sustained repetition of the correct pronunciation of sounds, syllables, words, and sentences leads to decreased interest and motivation



for practice, as it causes a certain monotony, fatigue, and regression in correction. Combining traditional techniques with the new logo-therapeutic computerized technology would stimulate the child's motivation for systematic practice and accelerate therapeutic progress. The computer can be an excellent game partner and a good "educator," and its intervention, depending on the variety of programs used and the involvement of psycho-pedagogical factors, will be reflected in the shaping of the child's personality. LOGOPEDIX educational software is professional software dedicated to language disorder therapy specialists. The program has a significant degree of interactivity and language training, considering the linguistic specificity of the Romanian language. It also aims to correct some categories of language disorders frequently encountered in children: delay in language development, dyslalia, and dyslexia.

The multimedia material combines language learning methods established in speech therapy practice with interactive digital resources. The language training carried out with the help of the LOGOPEDIX software has as learning sources images, sounds, and movement, presented in an intuitive ensemble with different degrees of complexity. By using LOGOPEDIX, children with language disorders have access to many exercise sets. Still, the role of the specialist is not diminished, as the supervision of the correct pronunciation of the phonemes remains the task of the speech therapist. The LOGOPEDIX online platform contains over 300 distinct exercises: phono-articulatory motor skills – acrobatics for the tongue, mouth gymnastics, breathing regulation exercises, phono-articulatory relaxation; diagnosis – psychological age of language, dyslalia diagnosis, phonemic hearing assessment, spatial assessment; it hosts over 4700 images, 3870 sounds and 3860 words.

The Ministry of Education of Romania approves the educational computer program LOGOPEDIX and is an interactive software product that allows children to participate in the process of correcting language disorders, it has a friendly interface and is very easy to use in the correction of language disorders: delays in language development, dyslalia, dyslexia. The educational computer program LOGOPEDIX was developed by the SNAC Romania Association and is used by three users of the Informer software. The most prevalent version among users of this product is 1.0. the name of the executable files of the program is LOGOPEDIX.exe. On the start page we are presented with the files that the software contains, each referring to a specific field: Delay in language development, dyslalia, dysgraphia, methodological guide, speech therapy file.



Figure nr. 1. The software structure is presented in the form of a honeycomb.



Figure nr. 2. The DELAY IN LANGUAGE DEVELOPMENT” file

- IMITATE THE MASCOT (A BEE). The bee indicates spatial/body positions aurally and motorically, which the child is invited to imitate ("Put your hands on your head", "Show your nose", "Raise your hand", etc.).( Fig. 3, 4)

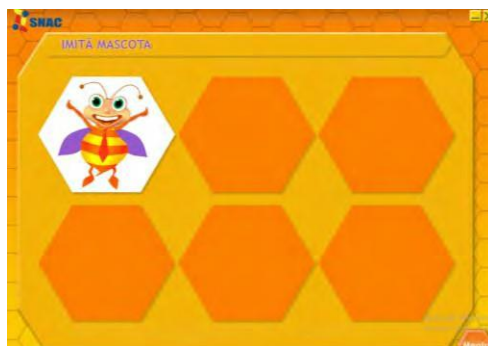


Figure nr. 3



Figure nr. 4

- ONOMATOPEA. Set of three plates: animal farm, house, city (Fig. 5). The child selects elements of the boards and simultaneously hears the corresponding sound (animals, noises from the household environment, noises made by means of transport)



Figure nr. 5



- **IMITATE THE SOUND.** The same boards from the onomatopoeia but without sound and the child imitates the sounds previously heard.
- **RECOGNIZES THE OBJECT BY SOUND.** The child hears the sound, recognizes it (or not), then selects the corresponding picture from the board. If he made a correct choice, a bee appears on the screen saying: "BRAVO". In case of a wrong choice, the bee says: "TRY AGAIN".
- **SERIES OF SYLLABLES WITH OR WITHOUT MEANING.** They are written on the screen and spoken by a female voice, the child repeats them. The software does not provide auditory feedback (Fig. 6).



Figure nr. 6

- **SETS OF FLASH CARDS WITH MIXED IMAGES FROM DIFFERENT CATEGORIES.** The child is asked: "WHAT ARE THE TOOLS?", "WHAT ARE THE VEGETABLES?", "WHAT ARE THE FRUITS?", "WHAT ARE THE ANIMALS?". The bee provides feed-back. 16 images appear on the screen simultaneously, their quality being impeccable (Fig. 7).



Figure nr. 7

- **DEFINITION OF THE CATEGORY.** The child selects: tools (e.g. screwdriver, scissors, pliers), trades (e.g. painter, veterinarian, salesman); means of transport, vegetables, fruits, animals, clothing. 16 images appear on the screen simultaneously. Images are named verbally at the time of their selection (Fig. 8).
- **IDENTIFICATION BY UTILITY.** What is food? What do you do?, What do you wear?, What are the means of transport? The previous images are replayed in a random order (Fig. 9). Albinuța offers feed-back (BRAVO! / TRY MORE!).
- **SORT BY QUANTITY.** Where are 2, 3, 4, 9? (eggs, apples, papagali, cubes, lemons). (Fig.10).
- **ANSWER THE QUESTIONS** (formulated verbally): Which animal gives milk?



Who is young? What is cold what is hot (Fig. 11).



Figure nr. 8

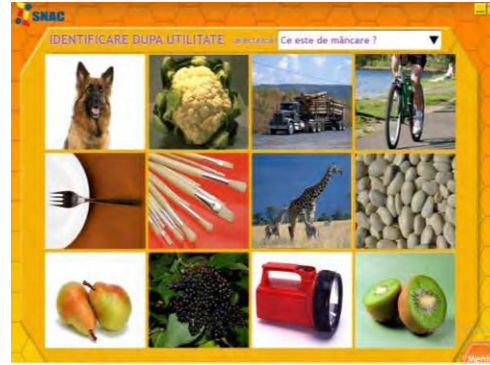


Figure nr. 9

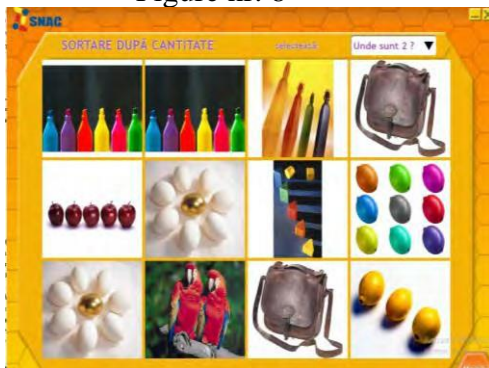


Figure nr. 10

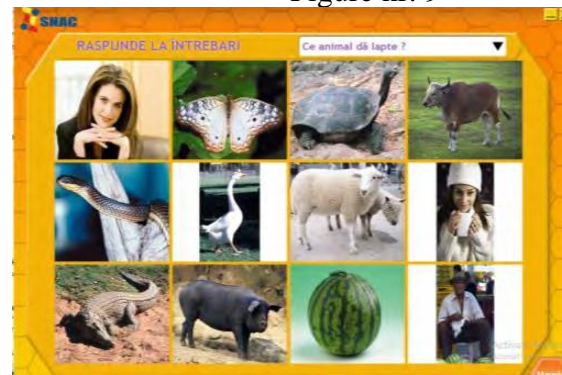


Figure nr. 11

The "DISLALIE" file is set as follows (Fig. 12):  
- START PAGE: S, Z, Ș, J, T, CE, CI, GE, GI, L, R.  
- FIXING THE SOUND IN WORD (Fig. 13).

Figure nr. 12

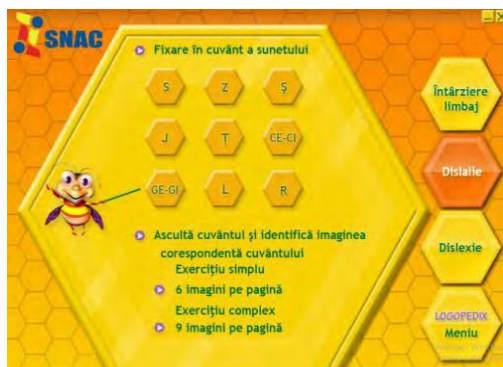
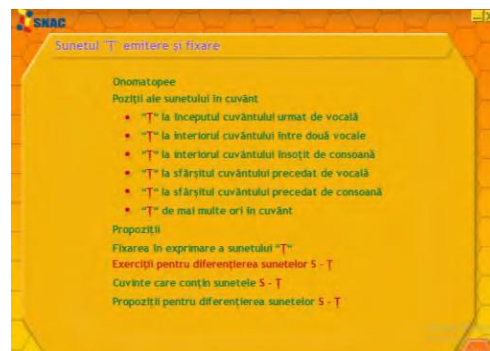


Figure nr. 13





- LISTEN TO THE WORD AND IDENTIFY THE PICTURE CORRESPONDING TO THE WORD. SIMPLE EXERCISE (Fig. 14).
- 6 IMAGES PER PAGE. COMPLEX EXERCISE.
- 9 IMAGES PER PAGE.



Figure nr. 14

The "DYSLEXIE" file includes the following exercise scheme (Fig. 15):

- WHAT SOUND DOES THE WORD BEGIN WITH? First series of words/vowels: A, E, I, O, U.

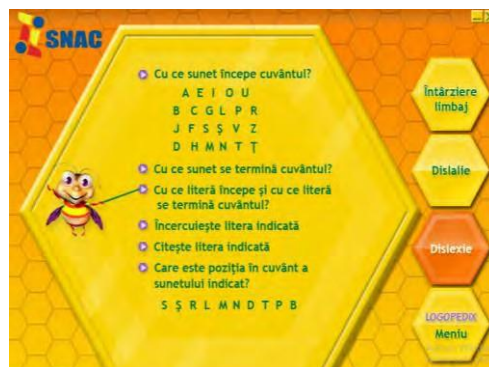


Figure nr. 15

Second series of words / consonants: B, C, G, L, P, R. Third series of words / consonants: J, F, S, Ș, V, Z. Fourth series of words / consonants: D, H, M, N, T, T (Fig. 16).

Examples: the image of a door appears on the screen and the diagram of the word in which the child will complete the initial letter. And for the other images, the working algorithm is identical (plane, rabbit, bear, etc.).



Figure nr. 16

- **WHAT SOUND DOES THE WORD END WITH?** The working algorithm is identical to the one above. Examples of words (pictures and verbal scheme): bee, fish, frog, bees, shoe, shoes, house, fish, houses, etc. (Fig. 17).

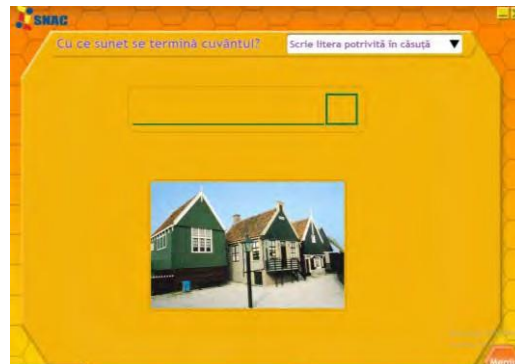


Figure nr. 17

- **WITH WHAT LETTER DOES A WORD BEGIN AND END WITH?** The working algorithm is identical. Examples of words: pepper, corn, legs, sheep, plane, tractor, dog, pig, penguin (Fig. 18).

- **CIRCLE THE INDICATED LETTER.** The uppercase letter is given and it is asked to find the lowercase letter, which is mixed, several times, among other letters that fill the space of the screen.

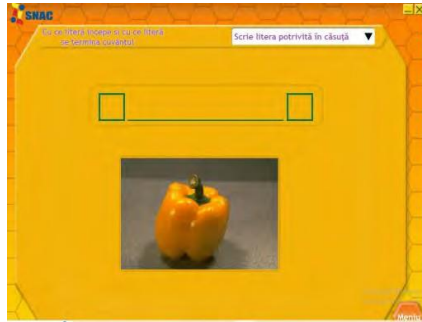


Figure nr. 18



Figure nr. 19

- WHAT IS THE POSITION IN THE WORD OF THE INDICATED SOUND? (S, W, R, L, M, N, D, T, P, B).

The working scheme indicates, by means of the empty boxes, the positions of the sound in the word: at the beginning, in the middle, at the end (Fig. 19). Examples of words (speech, images): sportsman, sun, house, sphere, grape, cat.

The "METHODOLOGICAL GUIDE" file provides those interested with complete information on the correction of language disorders, targeted in the software by chapters (Fig. 20, Fig. 21): dyslalia, dyslexo-dysgraphia and delay in language development. As an example, we offer the description of the DISLALIA chapter. This chapter provides the definition of this disorder and the therapy of dyslalia (Fig.22). Thus, the therapeutic dimension includes:

- General therapy (education of fine motor skills, breathing, phonemic hearing); articulatory movement education, general gymnastics; mobility of the phono-articulatory apparatus (myogymnastics, mobility exercises of the jaw, tongue, lips, cheeks, palatine veil); non-verbal and verbal breathing education, being proposed objectives for breathing education and methods of achieving them; - phonemic hearing development: definition, objectives of phonemic hearing education, phonemic hearing training exercises.



Figure nr. 20



Figure nr. 21





Figure nr. 22

- Specific therapy (Fig. 23) - obtaining and practicing the deficient sound through various procedures (described in detail); sound reinforcement; differentiating sounds that are similar from an articulatory point of view and between them confusions are frequently made; sound automation. The guide lists ways to automate sound.



Figure nr. 23

The "LOGOPEDIC SHEET" file offers speech therapists and psychopedagogues an example of a speech therapy sheet (Fig.24, 25, 26).



Figure nr. 24



Figure nr. 25



Figure nr. 26

The LOGOPEDIX educational software application combines the advice of speech therapy specialists with technology. The LOGOPEDIX educational software is a progressive and motivating method that contributes to the efficiency of speech therapy, the modernization of the



didactic-speech therapy act, the encouragement of didactic innovation, the accessibility of knowledge, and the increase of speech therapy productivity. It is a successful alternative to traditional methods of correcting language and communication disorders. It is difficult to estimate the role of computers and educational software in the speech therapy of children with C.E.S. Being specially created for this category of children, they are essential means of correcting speech deficiencies.

### **Conclusions**

The use of multimedia means and related applications is a reality and a necessity, and the logo-therapeutic process so complex becomes, in this case, the scene of three actors: the speech therapist - the child - and the computer, who together try to ensure the success of the therapeutic approach. Computer-assisted instruction and access technologies do not exclude traditional teaching-learning methods but only complement them so that the entire educational process adapts to the needs of students with special requirements. For people without a disability, technology makes tasks more manageable. For people with disabilities, technology makes things possible. We can conclude that technology is a determining factor for people with different disabilities to become independent.

### **Bibliography/References**

Croitor-Chiriac, T. (2013). Methodological valences of computer-assisted training in higher education: *tz de doct. in pedagogy. "Ion Creangă" State Pedagogical University, Chisinau, - 112 pg.*

Foloștină, R., Simion E. (2020). Digital learning for children with educational support needs. University publishing house, Bucharest, 192 p. ISBN: 978-606-28-1206-5.

Gherguț, A. (2013). Synthesis of special psychopedagogy. Guide for competitions and exams for obtaining teaching degrees. Iasi, Polirom Ed.. ISBN: 978-973-46-3386-9.

Pădure, M. (2007). Aspects of the use of access technologies in the education of visually impaired people. in Preda, V., (coord.) – Elements of special psychopedagogy, Cluj-Napoca, Eikon Publishing

Petrescu, P.R., Pacearcă, Ș. (2011). The use of ICT in the teaching-learning process in c lasses that include students with C.E.S. Brasov.

Popescu, O. (2019). Social integration of children with language disorders: *tz. by Dr. in Special Psychology, Chisinau with the manuscript title: C.Z.U.: 316.614-056.264(043.3).*