



Identification of the Target Groups' Needs for an Efficient Social Inclusion of People with Communication Deficiencies by M-Learning

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Abstract

Our paper is concerned with the analysis of the target groups' needs for an ERASMUS+ project, Key Action 3: Support for policy reform - Social inclusion through education, training and youth, founded by the European Commission, with the acronym TESI which started in January 2018. The objective of TESI is to bring novel training software solution which integrates learning models that can, for the first time, effectively leverage multi-modal behavioural cues, of learners with different types of verbal disorders, to realize fully automated context-sensitive estimation of engagement levels of learners and, at the same time, provide them an opportunity to express themselves.. Two steps are going to be accomplished in this part of our research: (i) definition of the profiles of the target groups with their basic characteristics: the users - people with verbal communication disabilities who will use the software in order to compensate their communication deficiencies by expressing themselves using graphical symbols and annotations and the tutors - people who work together with the users (teachers, parents), and who will create personalized instruments (instructions and expression resources) for their users; (ii) defining the mechanisms by which the proposed model could improve the way in which the students can express themselves, can acquire knowledge and can gain skills. The results will allow us to propose a didactic model and to create an educational technology.

Keywords: social inclusion, m-learning, disadvantaged people, new project;

1. Preliminary Remarks

This article describes a part of the research that will be carried out within the **Adaptive Personalized System for Creating Expression Tools in Social Inclusion of Learners with Verbal Communication Disabilities / TESI**, and it represents a sequence of the research from the previous project, **Using mobile technology to improve policy Reform for Inclusion of Disadvantaged Groups in Education / mRIDGE** [1-3]. The TESI project focuses on social integration of peoples with verbal communication disorders that are at risk of social isolation. It is dedicated to conceptualizing and development of social competence (SC) related to personal, social and professional development of people with verbal communication disorders through creation of adaptive, affordable and easy-to-use software solution that will enrich their personal expression opportunities [4]. However, we must specify that the present project has a broader approach, proposing the people's integration not only in school, as in the previous project, but also in society, and, furthermore, the parents are partners in this project, not only the teachers. This is why we consider that the TESI project will have a long-time impact on improving the socio-economic inclusion of these disadvantaged groups especially after leaving the educational system.

1.1 Beneficiaries

The main beneficiaries of the project are children and young adults suffering of several diseases that imply problems of speaking and communication. These diseases are often labeled as developmental disorders or learning disorders, and they generally occur and are diagnosed when the child is of school-age or pre-school-age.

Other beneficiaries are teachers, parents, tutors, educators trained to work with children with special needs, supportive staff, nurses, psychologists and social workers.

Being thought as a more complex project than the previous one, we consider that institutions and people collaborating with them can benefit from this project in the long run: counsellors /coaches/mentors (in a broad sense) (for those who have a bachelor's and / or Master's degree in psychology, pedagogy, medicine, sports, social activities and want to further develop in this area); authorities, policy makers in the area of special education; the management of the educational institutions and other community members.

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1.2 Partners

P1. *Plovdiv University "Paisii Hilendarski"* is the largest humanitarian higher educational and research establishment in South Bulgaria.

P2. *UNED – Spanish University for Distance Education (Universidad Nacional de Educación a Distancia)* is one of the largest Spanish Universities and is devoted to distance learning (using all communications media) and continuous education.

P3. *University of Craiova (UCV)* is one of the high standing higher education institutions in Romania, fostering the scientific, professional and personal growth of almost 20,000 students, guided with competence, professionalism and intellectual generosity by a top flight community of almost 1,000 academics.

P4. *The Jan Kochanowski University (JKU)* in Kielce is the only university of Świętokrzyskie region, and one of Poland's twenty universities.

P5. *The Special Secondary School "Sf. Mina" Craiova* educates and supports students with: moderate and severe mental deficiency associated disorders, autism, Down syndrome, learning disorders, blindness, neurological deficiency (homebound students through home schooling); learning difficulties, minor mental deficiency integrated in regular classes through itinerant and support teachers.

P6. *Josip Matos Primary school (Osnovna škola Josipa Matoša) (OS-Matosa)* is the only independent School for children with developmental disabilities (special needs) in Vukovar-Srijem County. Currently attending 60 students with different disabilities (age 7- 21), primary with intellectual disabilities, chronic illness, cerebral palsy, autism.

P7. *Association for education and development of disabled people (ASEDDEDIPE)* organizes courses in collaboration with other institutions, such as courses of computers, accountancy, language etc. From the other side, the objective of our association through our activities is to provide the possibility to our educational personnel (sociologists, teachers etc.) to acquire experience and knowledge for the right pedagogic practice concerning the people with special needs.

P8. *Special School for Students with Hearing Impairments "Stoyan Belinov" – Plovdiv [CHD]* has many years of experience in working with children with hearing disabilities. The school works with pupils of different ages - from the kindergarten to 12th grade, employing highly qualified specialists – surdopedagogists who use their experience to help hear impaired students from other (non-specialized) schools in various regions of Bulgaria.

2. The Objective of the Project

The main outcome of the first project consists of a platform which was designed for disadvantaged groups of pupils, but which, with some improvements, could also be successfully used with pupils from normal schools. This platform helps pupils with deficiencies improve their school performances, as well as develop a better sense of independence. In the present project the partners develop some mobile applications with augmented reality to help the teachers organize and conduct the training process in the special school, and facilitate the better knowledge acquisition by the students.

3. Needs Analysis

In order to achieve our objectives, the first step is to analyze the needs of the target groups. Firstly, we started by defining the profiles of the target groups. The basic characteristics of the target groups were studied and a pedagogical-psychological profile will be drawn for each student.

The target groups are represented by a number of 44 students (33 boys, 11 girls) with ages from 7 to 45, having several types of developmental difficulties, the most frequent being: autism and autism spectrum disorder: 21 students and mild mental retardation: 11 students with speech and language difficulties, by a number of 61 teachers (51 women, 10 men), with 2 to 35 years of working experience, and by a number of 70 parents (39 women, 31 men), 2 with hearing loss.

For each student a portfolio based on the teachers' and parents' observations was drawn up. Here is an example:

"Student B.R. was enrolled in the Secondary School in the academic year 2015/2016. Previously, he attended the kindergarten to the school. He is being raised in a full-member family of parents with hearing impairment.

- *Cognitive development.*

Attention - instability of the components of attention; reduced function of concentration.

Perceptions and pictures - disturbed auditory perceptions; slightly reduced function in spatial relations; no sense illusions (illusions, hallucinations)

Memory - Fixation - reduced function; Retention - reduced function; reproduction - reduced function; figurative and emotional - in norm; reduced function of verbal logical memory; good visual memory.

Thinking - Reduced function in thinking operations: classification, summary and comparison.

Intelligence - in norm

- *Emotional state:*

Relevant intensity of reactions: calm, adequate, adaptive. There are no aggressive acts and unconscious actions. Sometimes he lacks confidence and seeks the approval and interference of an older person. Works is being done on enhancing self-esteem.

- *Behaviour in educational activities, plays, and other activities:*

The student achieves satisfactory results. He quickly and easily distracts himself from the task and the work he has began. He has an interest in learning. He seeks attention and approval. It is difficult to him to make sense of a new material, transcribing words, sentences, text. It is difficult to him to make sentences on a given model and it's hard to answer questions. He prefers individual work with him. He's friendly, well-intentioned, takes part in the games with other classmates. He is interested in animals, particularly cats, and games outside.

- *Linguistic and speech development and communication skills*

He knows dactyl and sign language very well. Reporting is not yet at the necessary level. He has excellent communication skills.

Limited vocabulary. It's hard to begin with new words and to include them in a sentence. He has good reading technique, but does not understand the read text. Uncontrollable voice power.

He copies carefully given words, sentences, text. He does very well in dictation with dactile speech.

His articulation development is good - only the partition sounds K and G are missing. He pronounces the separate sounds very well, but when reading words, sentences or text, his pronunciation changes as he adds unnecessary sounds."

Our analysis assesses a common number of skills which can be improved for all students by developing programs for mobile technology as the expressive and receptive speech, vocabulary, reading, math and artistic skills. Moreover, most of the pupils need to develop necessary every-day skills, for example spatial and temporal orientation.

The areas where communication needs to be improved are very diverse and involve all the aspects of daily life: hygiene, nourishment, dressing, playing with other children, health, shopping, moving around familiar environment, public transportation, communication with unfamiliar people, expressing personal needs and wants, social interactions.

In this aim, the next step of the project is to design the TESI Tool. TESI Tool will be an assistive communication tool which enables users to communicate using visual cues (images) and to learn and perform daily activities by following visual instructions.

TESI Tool is intended to be used by both such people and their caretakers – their parents and the professionals who work with them. These professionals can be: teachers, specialized teachers, clinical and non-clinical specialists, or daily care assistants.

4. Conclusions

Based on a successful experience due to the collaboration within a previous ERASMUS+ KA3 program, the partners of TESI project work in order to achieve the goals of this project and to develop the software instruments for mobile technologies that will ease the social inclusion of the children and the youngsters speaking impairments.

The first step is the definition of the profiles of the target groups with their basic characteristics:

- Users - people with verbal communication disabilities, who will use the software to compensate their communication deficiencies by expressing themselves using graphical symbols and annotations.

- Tutors - people who work together with the users (teachers, parents), and who will create personalized instruments (instructions and expression resources) for their users.

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References

- [1] Iacobescu, G. E. Mileva, N. (2016) Using mobile technology to improve policy Reform for Inclusion of Disadvantaged Groups in Education / mRIDGE Project , HOPE project annual forum in Constanta, Romania.
- [2] Iacobescu, G. E. (2017) Using mobile technology to improve policy reform for inclusion of disadvantaged groups in education – mRIDGE project, The Future of Education Conference, Florence, Italy.
- [3] Iacobescu, G. E. (2017) M-learning tools for disadvantages students – mRIDGE project, International Conference on Education and New Developments 2017 (END 2017), Lisbon, Portugal.
- [4] Iacobescu, G. E. (2018) Adaptive Personalized System for Creating Expression Tools in Social Inclusion of Learners with Verbal Communication Disabilities - TESI project, 12th annual International Technology, Education and Development Conference, Valencia, Spain.