АНОТАЦИИ НА НАУЧНИТЕ ТРУДОВЕ НА АНГЛИЙСКИ ЕЗИК

на гл. ас. д-р **Ваня Ангелова Сивакова**

ANNOTATIONS OF SCIENTIFIC WORKS

of Ch. Assist. PhD **Vania Angelova Sivakova**
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for participation in a competition for the academic position "docent"

in area of higher education 1. Educational sciences,

of professional field 1.2. Pedagogy (Special pedagogy - assistive technologies)

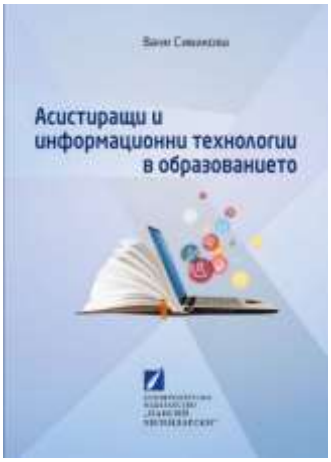
∗All of them were developed and published after acquiring the academic position "Chief assisstant" and academic degree "doctor (PhD)".

22 scientific papers (HTn) were submitted for participation in the competition: 4 monographs; 2 studios; 16 scientific articles, of which 11 – in Bulgarian, 5 – in English; 1 book and 1 study aids. [1]

I. MONOGRAPHS

1. HABILITATION WORK

HT1. Sivakova, V. (2020). *Assistive and information technologies in education*. "Paisii Hilendarski" University Publishing, Plovdiv, 210 pages. ISBN 978-619-202-562-5



The entering of inclusive education in Bulgaria and the rapid introduction of new information and communication technologies (ICT) in education leads to paying more attention to the use of assistive information technologies, and assistive technologies (AT) in general, in the inclusive classroom.

The use of AT contributes to the academic success of all students. They are an important perspective in the education and training of children and students. ATs are important for children with special educational needs (SEN) not only in the field of education, but also in everyday activities. They allow them to be more independent and self-reliant and facilitate learning, participation and

[1] The order of the annotations of the presented materials corresponds to the numbering of the publications from the list of scientific works for participation in the competition.

play in the context of inclusive education. Modern information technologies used as assistive can reduce or help overcome the difficulties that students encounter in writing, reading, mastering mathematical knowledge and skills, movement, organization of time, materials and information, computer use, and communication and interaction with their peers, parents and teachers. ATs can also help gifted students to develop their abilities in various areas and increase their motivation. AT can also benefit the elderly.

The use of AT supports the inclusion and interactive participation of children and students in kindergartens and schools and supports them in their daily life and educational functioning.

AT also includes information and computer technologies. ICT plays an important role in the life of modern man and his education. Mobile devices (tablets, smartphones) are included in the training. Cloud technologies are also becoming more and more popular. They have great applicability in education and at the same time can be used as AT.

Structurally, **the monograph consists of** an introduction, twelve chapters, a conclusion and references.

In the first chapter "Inclusive Education" the philosophy and principles of inclusive education are presented. The principles of universal design for learning and its relationship to inclusive education are discussed in Chapter two. Universal design for learning and assistive technology together can support students with learning difficulties and provide multiple means of expression and presentation.

In the third chapter, assistive technologies are presented in a theoretical aspect such as definitions, historical development and classification.

Separate chapters four to nine analyze the categories of assistive and information technologies that can be used in education related to: writing; reading; the organization of information, materials and time; mathematics; computer access and communication with indicated indicators of difficulties in the given area and how to assess the need for AT. The assessment of AT needs is presented from the perspective of the "student, environment, tasks, means" model, taking into account the sensory considerations related to the environment and the student, as well as the strengths and weaknesses of the students - their difficulties in training and in the specific field.

Special attention is given in separate AT chapters to hearing and vision aids, mobile and Internet-based applications and cloud technologies. Functional capabilities of Bulgarian software applications in education are also described. The last chapter of the study is also devoted to the relatively new field of assistive robots and their application in education.

For each presented assistive technology, both the practical applicability and the scientific rationale are presented.

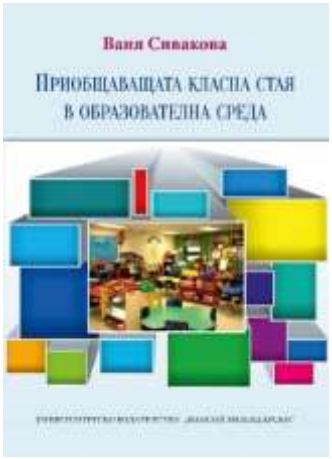
In the conclusion, the actuality of the issues in the field of education and inclusion for a possible higher quality and more accessible educational process are brought out in a structured and summarized form.

The main objective of the theoretical follow-up of the researched issues is to support children and students in the educational process with assistive and information technologies, as well as to support the inclusive teacher in supporting the individual needs of students.

In the context of the theoretical study, the research method is a complex systematic theoretical analysis of both the individual categories of AT, as well as the methodology for assessing the needs of AT and strategies for the use of information technologies to support the needs of children and students.

2. PUBLISHED MONOGRAPHS NOT PRESENTED AS A MAJOR HABILITATION WORKS

HT$_2$. Sivakova, V. (2022). *The inclusive classroom in an educational environment*. Plovdiv, Paisii Hilendarski University Publishing. 183 pp. ISBN 978-619-202-755-1



Education is an important element in every person's life. In our modern society, education is realized according to the principle of equal access and inclusion of every child and student. Modern trends in applying the principles of inclusive education provide new opportunities for inclusion of all students in the educational process.

In this aspect, the classroom in which students are taught is very important. The educational environment must be inclusive, including the school and, in particular, the classroom, which we call an inclusive classroom. However, inclusion does not only happen in the inclusive classroom. It does not refer only to the room where students are taught, but also covers other spaces in the school or kindergarten - corridors, lobbies, the yard, etc. Inclusion does not concern students in the classroom or in the school, but is based on the attitude that students are valued members of the school community. The philosophy of inclusion promotes the creation of an education system that meets the needs of all students. An inclusive classroom is only part of inclusion. A main task for inclusion is creating an inclusive classroom with a space that allows for participation and interaction among all. Many aspects of it can affect the development of children and students and their academic achievements. The scientific literature emphasizes the importance of children's relationships,

self-esteem and mood and that depends a lot on the environment. Environmental aspects such as climate, air, colors, light, etc. are also very important. And even in most cases, their importance for inclusion is not taken into account. The physical environment, for example, can be a challenge for many students and hinder their inclusion.

The monograph is composed of an introduction, 3 chapters, conclusions, literature and appendix.

Chapter one (Inclusive Education Environment) examines the concept of inclusive education and its benefits, defines an inclusive classroom and describes in detail its functions – physical, social and academic inclusion. Factors inside and outside the classroom that influence learning are examined - such as design, comfort, type of furniture, color of walls, organization of places, etc. Recommendations are given for compliance with universal access to information. Inclusive strategies such as the use of co-teaching, assistive technologies, etc. are mentioned. Indicators for the development of an inclusive classroom are examined in detail.

Chapter two (Empirical Research Design) examines the research design – aim, objectives, object, subject, hypotheses, methods, participants and organization. Methods of theoretical and empirical research as well as statistical methods for analyzing the results were used. In the context of theoretical research, a research method is a complex systematic theoretical analysis and synthesis within the study of the research problem. The theoretical research and the analysis of the literary sources on the issue are focused on the basic concepts used, functions of the inclusive classroom, environmental factors related to learning and inclusion. The purpose of the research presented in the monograph is to develop and approve a model of an inclusive classroom to increase the effectiveness of the educational process.

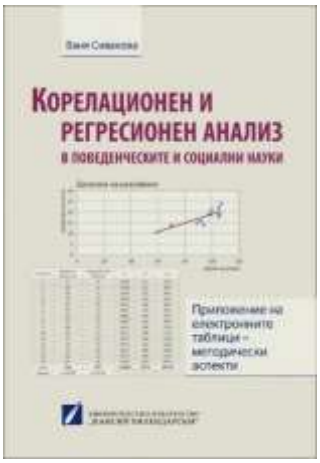
Chapter three (Analysis and discussion of the obtained results) presents the results of the empirical research on all questions from the questionnaire created for the purpose. The Inclusive Physical Environment Scale was analyzed. An inclusive classroom model is proposed. An analysis and discussion of the obtained results are presented.

The author questionnaire used in the empirical study is presented in the Appendix.

In conclusion, the importance of the issues in the field of education and the creation of an inclusive classroom to increase the effectiveness of the educational process is emphasized in a structured and summarized form. Theoretical-applied conclusions and recommendations were formed.

The monograph would serve to all students studying the discipline of classroom management or inclusive education, as well as all future teachers. As well as to all current teachers who want to make the classroom inclusive and increase the effectiveness of the educational process.

НТ3. Sivakova, V. (2021). *Correlation and regression analysis in the behavioral and social sciences. Application of spreadsheets – methodological aspects.* Paisii Hilendarski University Publishing, Plovdiv. 143 pp. ISBN 978-619-202-653-0



The monograph is intended for all those who, when conducting research in the behavioral and social sciences, explore dependencies through correlation analysis and/or will model the relationship between the studied variables with regression analysis and at the same time want to facilitate their calculations using spreadsheets. It is suitable for students studying behavioral or social sciences (e.g. pedagogyq spevial pedagogy and psychology) as well as statistics teachers. The monograph is also for anyone looking for the application of spreadsheets such as MS Excel for statistical calculations of correlation and regression analysis.

Statistical methods are applied in a wide range of fields such as natural and social sciences, business, etc. In the behavioral and social sciences, empirical research is often conducted. From a practical perspective, statistics are also used to plan and organize, conduct, interpret and understand research results. The detection of dependencies in structured data is a great field for applying well-developed approaches and procedures in statistics. These procedures are greatly facilitated if the means from the arsenal of information technologies are used. The monograph introduces the concepts of correlation and regression analysis. For all correlation coefficients, examples of their calculation by hand using formulas as well as their calculation in the MS Excel spreadsheet are considered. The consistency coefficient of the expert assessments was also examined. Examples of linear single regression are presented, which are solved with both formulas and using MS Excel.

Structurally, ***the monograph consists*** of an introduction, two chapters, a conclusion, appendices and references.

The **main purpose** of the monograph is to support the process of correlation and regression analysis of empirical research results. This can be done using information technology, in particular spreadsheets.

Chapter one (Correlation – measuring relationships) introduces basic concepts related to a correlation. An algorithm for checking for possible correlation is presented and the individual steps of the algorithm for the different correlation coefficients are described. Specific examples are given. For each correlation coefficient, an algorithm for its calculation in Excel with appropriate formulas and functions is indicated. Pearson correlation dependence, Spearman's nonparametric variant, Kendall correlation dependence, also correlation dependence for two nominally scaled quantities, two discrete-dichotomous and two continuous dichotomous variables, contingency and biserial types of coefficients are

discussed in detail. The concept of a statistical hypothesis and its main importance in the process of validating the calculated statistical indicators are explained.

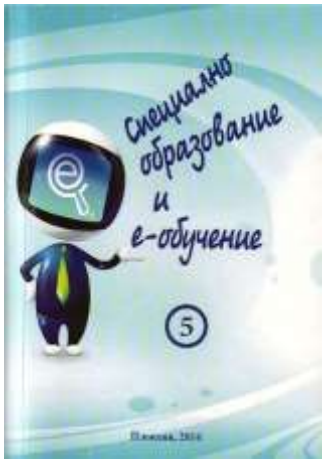
Chapter two (Regression Analysis) introduces the concept of prediction or univariate linear regression analysis. Basic types of regression dependences, verification of statistical significance of estimates of regression coefficients and hypothesis about the adequacy of the one-dimensional regression linear model are described. Examples of modeling and investigating the relationship between independent and dependent variables are discussed. An algorithm for modeling the relationship using Excel is given.

The content is illustrated with over 15 examples (solved in detail manually and with EXCEL), 26 tables and 41 figures (including views of the results in EXCEL), relevant software functions and procedures.

The monograph contains appendices with the standard statistical tables used.

In the context of the theoretical study, the research method is a complex systematic theoretical analysis of both individual statistical methods and Excel functions and modules suitable for performing correlation and regression analysis.

HT4. G. Totkov, **V. Sivakova**, T. Angelov. **(2014)**. *Special education and e-learning*. First Edition, Ed. Perspectives - Plovdiv, 238 pp. ISBN: 978-954-8852-45-6



The monograph *Special education and e-learning* (Book 5.) is part of the series "E-learning" and is intended for all current or future teachers who will work with people with special educational needs, as well as for students studying the disciplines "Information technologies for learning difficulties" and "Special education and e-learning" in different forms of learning.

The monograph consists of three sections. **Section I.** examines special educational needs (SEN), the problems of persons with SEN in perceiving information and alternatives to ensure accessibility. The standards and principles for creating accessible Internet pages, as well as tools for validation of accessibility and specialized means and tools for accessibility are considered. Examples of accessible Internet sites are described. A methodology for creating accessible websites and how it is applied is presented.

Nowadays, the Internet provides a means of distance learning for people who do not have the opportunity or time to attend regular courses. Part of these means are the so-called online learning sites, which have a variety of methods for presenting the information. These sites, unfortunately, in the most part, do not fully comply with accessibility requirements, therefore they do not allow people with disabilities to take full advantage of them. For example, using buttons with colors that blend in with the background of a site may be

problematic for a person suffering from color blindness who may have difficulty using the relevant functionality.

One of the most important tasks of social adaptation is providing these people opportunities for full-fledged and quality education. The Internet and the World Wide Web are an important resource in many aspects (education, employment, health care, etc.) for all who can use them. The accessibility of people with SEN to the Internet is particularly relevant. Most prototypes of eLearning environments (ELEs) do not provide training facilities for people with SEN. The main problem that needs to be solved in this direction and for which an effective theoretical, technological and technical solution has not yet been proposed is how to model and present the learning content so that the corresponding e-course can be automatically synthesized and adapted to the specific student depending on his physical and psychological characteristics, success rate, learning style, etc.

From section I. E-learning for persons with special educational needs points 1. Special educational needs and accessibility (from page 19 to 25), 1.5 Means of ensuring accessibility (from page 37 to 40) and 1.6 . Studies in the field (from page 40 to 51) were developed by Assist. Prof. PhD. Vania Angelova Sivakova.

Section II. Information Technology (IT) in Learning Disabilities essentially presents a university course suitable for training students in various pedagogical specialties.

In the first part of section II., in the form of 10 lecture topics, the basics of inclusive and integrated education, the concepts of learning difficulties, dyslexia, dysgraphia and dyscalculia are presented. The characteristics of children and adults with learning difficulties (dyslexia, dysgraphia and dyscalculia) are described in detail. Assistive technologies (AT) for individuals with SEN are reviewed, with an emphasis on ATs for learning difficulties. The main functions of IT used to assist children and adults with learning difficulties are examined, such as text-to-speech applications, educational games, planning and scheduling applications, etc.

The second part of Section II. is practically oriented. The functionalities of two software products for creating test and didactic materials useful for children and adults with learning difficulties - HotPotatoes and Quandary - are examined in detail (with numerous examples). The possibilities of a system for generating tests containing images are also considered. In addition, the author's system Logoped 3.0 for electronic therapy of stuttering and for automated assessment of fluency and speech technique is also presented. Software applications for the preparation of didactic materials can also be used by methodologists in the correction of learning disabilities.

From Section II. IT in Learning Disabilities pages from 103 to 179 and from188 to 206 are developed by Assisst. Prof. PhD Vania Angelova Sivakova.

In **section III.** Electronic courses present the educational content of two disciplines in the field – "Special education and e-learning" and "Information technologies for educational difficulties". The same have been approved by conducting pilot training within the framework of project BG051PO001-4.3.04-0064. In section III - from pages 207 to 216 were developed by Assisst. Prof. PhD Vania Angelova Sivakova.

Appendices to the monograph contain sample syllabi of the disciplines in Section III. in ECTS format as from page 217 to 230 were developed by Assist. Prof. PhD Vania A. Sivakova.

II. Articles, scientific reports, scientific communications, referenced and indexed in a world-famous database of scientific information

HT$_5$. Sivakova, V. (2022). *Model of inclusive classroom in Bulgaria*. EDULEARN22 Proceedings, pages: 1675-1682, ISBN: 978-84-09-42484-9, ISSN: 2340-1117, doi: 10.21125/edulearn.2022.0441, 14th International Conference on Education and New Learning Technologies: 4-6 July 2022, Palma, Spain, https://library.iated.org/view/SIVAKOVA2022MOD

Educational systems around the world are challenged to provide effective and quality education for all children and students. This leads to increased interest in the idea of inclusive education. It implies the creation of optimal pedagogical conditions, a supportive environment and a positive pedagogical climate to support the inclusion and development of students. This is possible with the creation of an inclusive classroom (INC). It is a classroom where all students study together and receive support according to their individual characteristics and needs. It's main task is to enable all students in the class to achieve equally optimal goals, even if the methods for achieving them are different. The INC has three main functions: physical, social and educational inclusion of children and students.

The paper is dedicated to the creation and testing of a model of inclusive classroom within a study in Bulgaria. It presents a detailed analysis of the functions of the inclusive classroom and the environmental factors influencing learning. Physical, social and academic inclusion in school education are also studied. The analysis is based on the following methods and resources: methods of theoretical research; methods of empirical research; statistical methods for analysis of results. For the purposes of the research and information gathering, a survey has been developed and conducted among teachers from 1st to 12th grade in different schools and cities in Bulgaria. Based on the analysis of the results and the concept of inclusive education we propose a model of an inclusive classroom. It includes the following components: design of an inclusive classroom; components of social and academic inclusion. The design refers to things such as physical access to the classroom, furniture, environmental factors (light, noise, etc.), safety, interior, organization of learning spaces, universal access to information and etc. Social inclusion refers to tolerance, participation in joint activities, etc. Academic inclusion includes assistive technologies, adaptation of the curriculum, teacher's assistant and etc.

HT6. Sivakova, V. (2020). *Cloud Technologies as Assistive Technologies in the Education of Students with Special Educational Needs*. Сп. Pedagogika, NION Az-buki. 122-133 Year XCII, Book 1, 2020, Volume 92, Number 1, Sofia. **ISSN 0861 – 3982 (Print) ISSN 1314 – 8540 (Online)** https://azbuki.bg/wp-content/uploads/2020/02/Pedagogy_1_20_Vania_Sivakova.pdf

The article reveals the benefits of cloud-based education technologies and the possibility of using them in inclusive education for equal access to it. Inclusive education applies to all children, but the most vulnerable are those with special educational needs (SEN). Basic concepts related to cloud technologies such as cloud and cloud computing are discussed as well as some of their basic characteristics. Assistive Technology (AT), classification and major AT categories are defined. Some strategies for the use of cloud technologies in children and pupils with SEN as assistive technologies are mentioned, in particular for students with physical disabilities, hearing impairments and specific learning disabilities.

HT7. R. Doneva, S. Gaftandzhieva, **V. Sivakova. (2020)**. *Towards gender equality plan in the university of plovdiv: analysing and assessing the state-of-play*, ICERI2020 Proceedings, pp. 3486-3494, Web of Science, **ISBN:** 978-84-09-24232-0, **ISSN:** 2340-1095, **doi:** 10.21125/iceri.2020.0782. 13th annual International Conference of Education, Research and Innovation, 9-11 November, Online Conference. https://library.iated.org/view/DONEVA2020TOW

Gender equality (GE), besides being a fundamental human right, is essential to achieve peaceful societies, with full human potential and sustainable development. The GE Index (GEI) of European Institute for GE (EIGE) shows that advances in GE are still moving at a snail's pace. According to GEI Bulgaria has been progressing towards GE at a slower pace than other members especially in academia where institutional changes are not undertaken. For years, efforts have been undertaken towards to promote GE in academia and research across Europe. In this regard, many universities and research organizations in EU countries have achieved important development GE by introducing gender dimensions into their organizational, educational and research activities, by revising or developing gender-mainstreaming strategies or/and by developing and adopting GE plans (GEPs). The paper is devoted to the second step of implementing a GEP in Bulgaria by the University of Plovdiv "Paisii Hilendarski" (PU) within the SPEAR Project. It presents a detailed analysis of the gender-related state-of-play in PU following the EIGE's guide on how to implement GEPs. The analysis is based on the following methods and sources: deep review of national and university policies on GE; collecting and analysing sex-disaggregated quantitative data (academic staff, nonacademic staff, PhD students and students); collecting and analysing qualitative data on GE-issues; evaluation activities; formal and informal discussions, talks

and interviews with staff members and students. Quantitative data about PU academic staff, non-academic staff, PhD students and students is collected using the records from existing databases maintained for the needs of different university units. Statistical analysis is carried out by disaggregation of the data by gender to outline the genderbased differences in percentages according to different characteristics of the target group (field of study/teaching, degree of study, occupation, qualification, etc). The obtained results for PU are compared with the official data on the percentage distribution by gender of students and staff for Bulgaria as a whole and for EU published by Bulgarian National Statistical Institute and Eurostat. To collect qualitative data on GE-issues at PU, 4 surveys have been developed and verified by experts. The 3 of the surveys are conducted among students, PhD students and academic staff, to investigate opinions on issues related to equality between women and men in academia and impressions of whether there is a favourable climate and environment in PU in this regard (satisfaction of own career development, work-life balance and work conditions, attitudes on gender-based traditions and stereotypes and the gender-related atmosphere and culture within PU). The 4-th survey is conducted among all target groups of the university community to collect qualitative data particularly on the attitudes toward some traditional and contemporary stereotypical perceptions and prejudices about the role of women/men in professional and family life. In all performed analyses a special attention is paid on the ratios in the STEM field. Based on the results of state-of-play measures are chosen to build the foundation in all main direction of a GE initiative. The measures are selected according to the recommendations to be SMART (according to GEAR tool), but also to be feasible within the overall national, societal and institutional context.

HT$_8$. Sivakova, V. (2019). *The Benefits of cloud computing for children with special educational needs in education or using cloud computing as assistive technology*. Journal of Education & Social policy, 30 September, 2019. DOI: 10.30845/jesp.v6n3p19 URL: http://dx.doi.org/10.30845/jesp.v6n3p19

The paper reveals the benefits of cloud-based education technologies and the possibility of using them in inclusive education for equal access to it. Basic concepts related to cloud technologies are discussed. Some strategies for the use of cloud technologies in children and pupils with special educational needs as assistive technologies are mentioned.

III. Articles and scientific reports published in non-refered peer-reviewed journals or in edited collective volumes

HT9. **Sivakova, V.** (2022). *On the accessibility of electronic resources for students with visual impairments and their access to education*, Journal Announcements of union of scientists – Sliven, Social sciences, volume 37(1), Publisher Union of scientists in Bulgaria – branch Sliven. pp. 194-200, ISSN: 1311 2864

Education is an important component in everyone's life including for students with visual impairments (VI). Their learning is realized in the context of inclusive education. An important accent is on their academic inclusion, which refers to the adaptation of the educational content to the individual needs and capabilities of the students. However the students with *VI* cannot perceive the information included in the images in the electronic resources and they must be made accessible to ensure their access to education. The main purpose of the paper is to consider the creation of accessible electronic resources by applying some guiding principles that have been used in practice in the education of students with *VI* in University of Plovdiv "Paisii Hilendarski" and in that way ensuring their access to education.

HT10. Angelov, T. **V. Sivakova,** G.Totkov. **(2018).** *Automated generation of test units for diagnosis and development of cognitive skills*. Trakia Journal of Sciences No2 series Social Sciences, pp 128-133. ISSN 1313-3551

The paper presents the architecture of a web-based system for automated generation of test units for diagnostics and development of cognitive skills. The system supports a database (DB) containing information objects of different type (text, images), including metadata used in the generation process. The database is updated through queries to external information sources (to supply the objects themselves) and with next addition of attributes. For example, an image can be accompanied by a textual description and metadata (as part of an e-learning process), a Bulgarian lexema - with automatically generated phonetic transcription and syllabicate, and so on. The supported and updated specific image metadata system (including color, size, purpose, etc.) and for lexams (composite sounds, syllables, etc.) provides an opportunity to generate test units for diagnosis and cognitive development. The selection of objects from DB suitable for insertion in a test unit of a certain type (for example, to distinguish objects with different characteristics) is performed by a query to the database for extraction of objects according to the value of the accompanying metadata.

HT11. Angelov T., **V. Sivakova**, G. Totkov. **(2016).** *Automated generation of test items for the assessment of cognitive skills and language knowledge*. Proceedings of the IX National Conference "Education and Research in the

Information Society", pp. 79 - 88. ISSN 1314-0752 http://hdl.handle.net/10525/2750

This research presents web-based platform for development of dynamic database and automated generation of test units for evaluation of cognitive and language skills. When inserting new records into the database some fields are automated filled by algorithms for phonetic transcription, rhyme form and syllables segregation for words. Through combination of various attributes, different search queries are generated and different types of unit tests are created.

HT12. Angelov T., V**. Sivakova**, G. Totkov. **(2015).** *Automated generation of test units for the assessment of language knowledge*. Proceedings of the XI National Scientific Conference for students, doctoral students and young scientists, May 16, 2015, Plovdiv, pp. 144-149. ISSN 1314-9547

The article presents a web-based system for maintaining a dynamic database (DB) and automated generation of test units (TE) for language assessment. When creating the records in the database, some of their fields are filled in automatically using algorithms for phonetic transcription, separation of rhyming forms and syllables of Bulgarian words. Phonetic TEs of different types can be generated by queries to the database varying certain attributes. A prototype of the system is presented.

HT13. **Sivakova, V. (2014).** *Social and psychological well-being*. Sp. Applied Psychology, no. 1, Plovdiv, Paisii Hilendarski University Publishing, pp. 3-12. ISSN 1313-7581

The article examines social and psychological well-being. Various concepts of well-being and its components are presented. The concept of quality of life was also developed. A model of well-being is described. Various methods of measuring well-being, including in people with mental retardation, have been examined. A relationship is searched between well-being and happiness, as well as between well-being and gratitude.

HT14. **Sivakova, V. (2013).** *Internet identity*. Personal and national identity and social environment, part IV. Plovdiv, Paisii Hilendarski University Publishing, pp. 101-113. ISBN 978-954-423-854-4

The purpose of the article is to reveal the extent to which people identify with the Internet and computers. An empirical study with a survey developed for the purpose is described. For the purpose of the present study, a questionnaire was developed, the purpose

of which is: to find out what technologies people have at their disposal nowadays, whether they have access to the Internet and where they access it, how often they communicate on the Internet, and how obsessed they are with the use of Internet. An analysis of the obtained results was made. The psychometric characteristics of the questionnaire scale, descriptive statistics are presented. An analysis of variance was performed. Discussions of the obtained results are also presented.

HT$_{15}$. Sivakova, V. (2013). *Social identity – aspects and evaluation*. Personal and national identity and social environment, part III. Plovdiv, Paisii Hilendarski University Publishing, pp. 20-28. ISBN 978-954-423-853-7

The article considers a definition of social identity, its aspects - cognitive, emotional and motivational, behavioral and different approaches to its assessment. Several scales for measuring social identity are also considered. Patterns of identity structure in overlapping social groups are indicated. The development and change of social identity is examined.

HT$_{16}$. Sivakova, V. (2013). *Contemporary information and communication technologies for consulting and learning of children with special educational needs in inclusion education*. Trakia Journal of Science, v. 11, № 3, p. 225-231, 2013, ISSN 1313-7069. http://tru.uni-sz.bg/tsj/N3,%20Vol.11,%202013/V.Sivakova.pdf

The work presents the results of a study conducted on the quality of the LOGOPED system for virtual counseling of children with stuttering and the use of educational computer games for children with special educational needs in inclusive education. Aspects of the quality of software products and in particular of the LOGOPED system are presented. The purpose of the development is to create models of classical therapies of stuttering and their useage for design, implementation and testing of relevant software applications for virtual diagnosis and counseling of children who stutter.

HT$_{17}$. Trichkov, Iv. **V. Sivakova. (2013).** *Personal identity and satisfaction in children with mental retardation*. Personal and social environment Part V. Plovdiv, Paisii Hilendarski University Publishing, pp. 109-121. ISBN 978-954-423-863-6

Nowadays, there are many factors that influence the well-being, self-determination and satisfaction of people with different types and degrees of disabilities. The growing attention of specialists to this is determined by the fact that the population of children with special educational needs grows with each passing year. According to EU data, every tenth child is born with some disorder or disability. Similarly, the population of children with mental retardation has been growing in recent years.

In the scientific literature, the problem of self-determination, identification, and satisfaction in people with mental disabilities is rarely explored. This motivates us to make an attempt to track the processes related to personal identity and life satisfaction in children with mental disabilities. For this purpose, we used an author's questionnaire, which is presented at the end of the article. In view of the contingent of subjects studied, the questionnaire contained 10 questions to which the children studied answered by indicating one of three possible answers in the form of a smiling face, a frowning face and a face with a neutral expression.

HT18. Sivakova, V. (2012). *Psychological and social well-being and social integration.* Social well-being, quality of education and social integration – research and results. Plovdiv, Paisii Hilendarski University Publishing House, pp. 16-35. ISBN 978-954-423-815-5

The purpose of the article is to examine well-being. Various conceptions of it and its components such as psychological, subjective, personal and social well-being are examined. Methods for its measurement are described. Empirical research measuring well-being is presented. The results of the well-being research carried out using three methods are described: group discussions, in-depth interviews and a scale for measuring well-being. The scale for measuring well-being used in the study has 6 subscales – autonomy, mastery of the environment, personal growth, positive relationships with others, purpose in life, self-perception. With the method of focus groups, attitudes towards social well-being are investigated. The in-depth interview aims to explore attitudes towards well-being. Descriptive statistics of the results are presented. A correlation dependence between different variables was sought.

IV. Scientific studies

HT19. Sivakova, V. Trichkov. Iv. **(2020).** *Essence and specifics of the implementation of inclusive education in a digital environment*. "Ambassadors of Inclusive Education" Compendium. Plovdiv, Paisii Hilendarski University Publishing, pp. 249-283. ISBN 978-619-202-617-2

The study examines distance learning and the specifics of implementing in an inclusive environment. Distance learning is defined, its characteristics are described, and various classifications are presented. Advantages and disadvantages are mentioned. The role and competencies of learners and teachers in a digital environment are described. An empirical study is presented, the purpose of which is to track and explore the possibility of implementing inclusive education in a digital environment. The purpose, hypotheses, subject and object of the research are defined. The results of the study are presented and analyzed. The advantages and disadvantages of distance learning and the implementation of inclusive education in a

digital environment are mentioned. Recommendations and suggestions for improving the learning process in absentee learning are presented.

HT20. Angelov T., **V. Sivakova**, G. Totkov**. (2014).** *Automated generation of phonetic and cognitive test units*, in Bulgarian language, literature and e-learning. Plovdiv, Publishing House "Rakursi" OOD. pp. 117-140. ISBN 978-954-8852-47-0

The publication *Bulgarian language, literature and e-learning* is part of the series "e-learning" book No. 7.

Interest of the test is growing with the mass use of computers and the Internet, and attempts to use it in the process of automating learning. Test generation software can be used to create tests for e-learning purposes.

The creation of didactic materials/tests in pedagogy and special pedagogy, which are used for diagnosis, therapy or correction of disorders, is labor-intensive. Tasks usually include images and texts. When creating tests that are common in pedagogical practice, phonetic tasks are included, where it is necessary to search for words with the presence or absence of a certain letter, a sound from a certain group or combinations of consonants at the beginning, middle, end of the word or in a specific position and others. Various test generation systems can be used to facilitate the professionals, but the available software tools do not offer opportunities to generate phonetic tasks. Cognitive abilities are skills needed to perform any task from the simplest to the most complex, and are based not so much on knowledge as on mechanisms for how we learn, remember, solve problems, and focus, rather than ourselves. People can improve their cognitive capacity, speed and accuracy. Creating cognitive tests for diagnosis and research is a labor-intensive task. However, with existing online testing systems, most of the types of tasks involved in diagnostic and cognitive skills development tests cannot be implemented.

Approaches for the automated generation of phonetic and cognitive test units (TEs) are considered in the study. The created TEs are suitable for persons with special educational needs, and in particular for the needs of speech therapy. Known systems for creating electronic TEs are presented. Examples of typical TEs in the areas of phonetics and cognitive skills are discussed. An author system for their automated generation is presented.

V. Co-authored textbooks and teaching aids

HT21. Levterova, D., **Sivakova, V.** Atanasova, Zh., Trichkov, Iv. **(2019).** *Strategies and models for working with children and students with special educational needs*. Plovdiv, Paisii Hilendarski University Publishing House. pp. 46-71. ISBN 978-619-202-521-2

Inclusive education as a current educational model sets modern requirements for a new approach to children and students with special educational needs. The teaching aid focuses on the educational model for inclusion, on the medical and social model, as well as on the identity models for people with disabilities, specific strategies and rules for working with children and students with special educational needs. Vania Angelova Sivakova examines the topic (from pages 46 to 71) of strategies, models and rules for working with children and students with language-speech disorders in communication and in the process of their education.

HT$_{22}$. Levterova, D., Atanasova, Zh., Trichkov, Iv., Kostova, Zl., **Sivakova, V. (2018).** Language and speech disorders. In Psychology of children and students with special educational needs. Plovdiv, Paisii Hilendarski University Publishing, pp. 69-121. ISBN 978-619-202-310-2

The book is intended for students in higher schools majoring in psychology, special pedagogy, preschool and elementary pedagogy, social pedagogy and social activities. The topic "Language and speech disorders" from pages 69 to 121 was developed by Assist. Prof. PhD Vania Angelova Sivakova. The purpose of the exhibition is to introduce the reader the basic concepts such as communication, speech, language, as well as to various theories of communicative disorders and their classification. Articulation disorders are discussed in detail; rhinolalia; fluency disorders – stuttering, stuttering, tachylalia, bradylalia; dysarthria; developmental dysphasia, aphasia. The presented disorders of verbal communication are described in the model - definition, etiological factors, symptoms and psychological characteristics of the individuals.

(Ch. Assistant PhD Vania Angelova Sivakova)