- України; Львів. наук.-практ. центр проф.-техн. освіти НАПН України ; Нац. ун-т «Львівська політехніка». № 6. 2009. С. 16–25.
- 2. Деркач А. А., Селезнева Е. В. Акмеологическая культура личности: содержание, закономерности, механизмы развития. Москва; Воронеж: НПО «МОДЭК», 2006. 493 с.
- 3. Карпенчук С.Г. Самовиховання особистості : наук.-метод. посіб. Київ : I3MH, 1998. 216 с.
- 4. Ковалев А.Г., Бодалев А. А. Психология и педагогика самовоспитания. Ленинград : Изд-во Ленинград. ун-та, 1958. 90 с.
- 5. Левченко Ф. Сутність та витоки компетентнісного підходу в освіті. URL: https://lib.iitta.gov.ua/724379/1/1.5.3бірниктез%20новДРУК ПДФВСЕбезправок%2017.12.2019-сторінки-186-189.pdf
- 6. Рибалко Л.С. Методолого-теоретичні засади професійно-педагогічної самореалізації майбутнього вчителя (акмеологічний аспект) : монографія. Запоріжжя : ЗДМУ, 2007. 443 с.
- 7. Якухно І.І. Наукові основи інноваційного розвитку післядипломної педагогічної освіти : монографія. Житомир : Полісся, 2010. 524 с.

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WAYS OF INTRODUCTION OF AN ADAPTIVE APPROACH INTO LANGUAGE TRAINING SYSTEM OF THE ARMED FORCES OF UKRAINE

The topicality of implementing an adaptive approach into the system of language training of the personnel of the Armed Forces of Ukraine strengthens the active development of digital technologies, which make it possible to introduce innovations in the training of military subject matter experts in order to develop their competences within the framework of non-formal education.

Another component of the language training system is language testing in accordance with the requirements of NATO STANAG 6001. This component is improved due to the introduction of the computer adaptive language testing concept for two types of language skills: listening and reading. Therefore, we can state that the transformation of the language training system can be carried out under the condition of effective use of digital tools, which, in turn, make it possible to implement an individual approach to foreign language competences development and foreign languages testing in accordance with the requirements of NATO STANAG 6001.

The theoretical and methodological principles of adaptive learning were reflected in the scientific researches by O. Lyashenko, V. Demianenko, O. Mintser, Y. Bunturi, O. Kanishcheva, Y. Sikora, N. Morse, L. Varchenko-Trotsenko, T. Terletska and E. Smirnova-Trybulska. Adaptive systems of education were studied by V. Bondar, T. Desiatov, A. Maron, T. Mukhlaev. The issue of designing intelligent and adaptive learning systems, in particular in Web education, has become the subject of research of the following foreign scientists D. Algazzawi, P. Brusilovsky, H. Truong, K. Wilson, L. Pugliese, M. Edwards, C. Ford, J. Fritz, D. Johnson, S. Birk, L. Yarnal, G. Bryant, as well as Ukrainian ones, as V. Bykov, O. Haharin, S. Tytenko, V. Krykun, S. Liubarskyi, P. Fedoruk, J. Linacre, E. Latu, N. A. Thompson, D. J. Weiss and others. Scientists emphasized the need to create new forms of presentation of educational content in view of the rapid development of computer learning and artificial intelligence technologies [1].

In the context of education, adaptive learning is considered as a dynamic process of finding and establishing a certain balance or equilibrium between all participants of the educational process (administration, teachers, students) and the constantly changing educational environment [4]. Thus, adaptive learning is a complex, data-driven process that adapts to the interaction of the subject of learning and his/her level of success, and as a result involves the identification of learning material and resources, necessary to achieve the educational tasks and goal [6].

Also, adaptive training can be considered through the modern professional paradigm of the subject-matter experts' competitiveness. Thus, from this point of view, adaptive learning involves a direct and reverse information and communication interaction, which is ensured by observing the conditions of a skillful combination of active learning methods depending on external requirements, internal needs and abilities of participants in subject-subject pedagogical interaction [4]. In turn, scientists consider adaptive learning technologies as interactive and innovative forms, methods, techniques and tools that provide individual subject-subject interaction between learners and the teacher in real time, activate independence, and are implemented due to adaptive educational tools: adaptive content, adaptive tests, adaptive learning

scenarios [5]. Based on the theoretical analysis of scientific literature, we can conclude that adaptive learning in higher education has the following characteristics:

- 1) subordination to the general pedagogical idea, which is based on methodological, didactic, psychological, philosophical principles that embody the ideas of its authors;
- 2) the presence of an adaptive algorithm of actions, operations and connections that correspond to certain target settings in order to obtain the planned learning results with a minimum of effort. An adaptive algorithm can be implemented through the application of software that adapts to the individual needs of learners based on inferences about their strengths and weaknesses, and accordingly, it (the algorithm) builds an individual learning trajectory in real time and adjusts it in order to effectively master the competencies. In this way, the adaptive activity of the subjects of education is ensured due to the offer of educational content depending on their level of knowledge, abilities, skills, experience, learning style, etc.;
- 3) the presence of a block of self-diagnostics (didactic, psychological, sociometric, etc.), which contains criteria, indicators and tools for evaluating the results of the activities of the subjects of the educational process [3; 6]. Diagnostics can also be done through the use of an adaptive testing algorithm that responds to the testee's responses in real time and provides feedback.
- 4) ensuring interaction between all learning subjects (teacher and students) through testing, educational forums, online consultations and other activities. Therefore, educational activities should be organized based on the subject's integration of logically and meaningfully completed elements of information according to the developed algorithm of cognitive actions, which consists of successive stages with the implementation of control or self-control at each of them, until the unit of knowledge or actions is mastered [7].

There are important conditions for ensuring the adaptability of language training in a higher military educational institution: creating a course student profile, implementation of microlearning, division of all course content into completed information elements (lessons), providing constant feedback, creation of adaptive learning content, learning analytics.

Computer adaptive language testing (CALT) provides a lot of benefits in language assessment such as high precision testing tool, time efficiency, motivating individualized testing experiences, various assessment options for different purposes [2]. The method of CALT in accordance with the requirements of NATO STANAG 6001 for listening and reading is a type of computer testing, during which the sequence of presentation of test tasks (their complexity), as well as the number of tasks, depend on the testee's answers to previous test tasks. That is, CALT takes into account the level of development of foreign language competences of the tested person during the testing

procedure. In particular, during the CALT, the person being tested first receives a test task of medium difficulty, which corresponds to the standardized speech level 2 (SLP 2). If he/she chooses the correct answer for a certain number of tasks, then his/her next task will be more difficult, if the answers are wrong then his/her next task will be easier, etc., until the program determines the final level of the testee. That is, CALT is a pyramid type of testing.

The CALT algorithm, in accordance with the requirements of NATO STANAG 6001, consists of certain blocks:

- 1) the "Starting Point" block, which is responsible for creating a set of test tasks separately for SLP 1, SLP 2, SLP 3;
- 2) the block for presenting test tasks (the "Starting Point" block), which is directly responsible for the procedure for adapting test tasks depending on the answer of the test taker;
- 3) assessment block and test completion (the "Scoring and Termination Criterion") unit, the function of which is to determine the final level of foreign communicative competence of the testee and the completion of the language test.

In conclusion, it should be mentioned that the use of adaptive technologies in the higher military educational institutions makes it possible to make this process flexible, productive and personalized, which means that each trainee has the opportunity to fully use his potential to achieve the goal. Due to adaptive learning technologies, it is possible to collect information (statistics) about the educational path of course participants in the MOODLE system and choose individual learning trajectories depending on this path (according to the results of testing, performance or failure to perform educational activities).

The use of the CALT method provides the following advantages:

- 1) real-time assessment of test subjects and provision of listening and reading test results immediately after the test is completed;
- 2) reflecting an objective assessment of the level of development of foreign language competences of each testee thanks to the creation of a large number of variable tests, which depends only on the size of the bank of test tasks. CALT contains a bank of test tasks for SLP 1, SLP 2, SLP 3;
- 3) the opportunity to influence the structure and time of the test, because the testing is adjusted to the individual capabilities of the student (he does not give answers to tasks that are too difficult or too easy for him), and the number of tasks in the test (the duration of the test) depends on the correct answers to the previous tasks. This approach reduces the level of fatigue of the tested person;
- 4) ensuring the principle of confidentiality without the need to spend on additional security measures to preserve the secret of test options.

Bibliography:

- Andersen, B. L., Jørnø, R. L., Nortvig, A.-M. Blending Adaptive Learning Technology Into Nursing Education. *A Scoping Review. Contemporary Educational Technology*. 2022. Vol. 14 (1), ep333. DOI: 10.30935/cedtech/11370.
- Bui, T. K. P., Nguyen, Q. T., Le, T. H. (2021). Computerized Adaptive Testing In Language Education. Opportunities And Challenges In Era 4.0. IN Proceedings of 1st Hanoi forum on Pedagogical and Educational Sciences. 2021. P. 264–74.
- Gawliczek, P., Krykun, V., Tarasenko, N., Tyshchenko, M., Shapran, O. (2021). Computer Adaptive Language Testing According to NATO STANAG 6001 Requirements. *Advanced Education*. 2021. 8(17). P. 19–26. DOI: 10.20535/2410-8286.225018.
- 4. Бондар В.І., Шапошнікова І.М., Опалюк Т.Л., Франчук Т. Й. Адапти вне навчання студентів професії вчителя: теорія і практика : монографія / за заг. ред. В. І. Бондаря. Київ : Видавництво НПУ імені М. П. Драгоманова, 2018. 308 с.
- 5. Єрьоменко О.А. Теоретичні і методичні засади адаптивної системи професійної підготовки магістрів з управління навчальним закладом : автореф. дис. . . . канд. пед. наук : 13.00.04. Суми, 2021. 24 с.
- 6. Десятов, Т.М. Інтелектуальні адаптивні навчальні системи освіти дорослих. *Вісник Черкаського університету. Серія «Педагогічні науки»*. 2015. № 34 (367). УДК 374.71(4). С. 34–40.
- 7. Мельник, Ю.Б. Щодо ідеї впровадження програмованого навчання у ВВНЗ. *Наукове забезпечення службово-бойової діяльності Національної гвардії України* : зб. тез доповідей VI наук.-практ. конф. (Харків, 31 берез. 2016 р.). Харків, 2016. С. 76–78.