A Model of the Test Technology of Teaching: Theoretical and Applied Aspects

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Abstract

The aim of this article is to reveal the results of studying the theoretical and applied aspects of the test technology of teaching: to structure the technological cycle, develop a model of the test technology of teaching, reveal the ways of optimisation of the educational process using the test technology. The conducted research shows that using test technologies of teaching significantly increases the qualitative indicators of mastering the material because of the motivational component, objectivity of evaluation, psychological comfort and elements of gamification. It has been determined that the efficiency of its implementation is affected by such aspects as compliance with the technological cycle, balancing the level of difficulty of test tasks by the difficulty index (Is), selection of the strategy for task placement, correctness of distractor creation, establishment of optimal quantitative and temporal characteristics of the test, the evaluation system, synchronous or asynchronous interaction between a teacher and students.

Keywords: testing, task in the test form, test technology of teaching, gamification, Vasyl Stefanyc Precarpathian National University, Ukrainian language for professional purposes

1. Introduction

Requirements of the New Ukrainian School cause transformation of tasks of the higher pedagogical education, particularly in the aspect of control and measurement of learning outcomes. Tests as a type of educational text remain an integral part of the teaching process at modern higher education institutions, at the same time causing contradictory statements concerning their meaningfulness, practical impact on the level of knowledge, abilities and skills of students, appropriateness and efficiency. Nowadays, there exists the necessity of creation of an objective and timesaving instrument for measurement of knowledge and competences of students. For the Ukrainian and general educational realities, using tests for teaching purposes has also become relevant. The above-mentioned aspects highlight the problem of creation of test technology of teaching and check of its effectiveness in the process of preparation of future specialists in the pedagogical sphere.

The issues of testing were deeply studied by foreign scientists during the 20th century. There even appeared a separate direction of scientific research, testology. In Ukraine, the issue began being actively discussed in the late 20th and early 21st century. This work refers to the most thoroughly conducted pieces of research of the problem of development of tests and implementation of test technology into the educational process, which became especially relevant in the period of the COVID-19 pandemic. Particularly, Agarwal et al. (2008) have experimentally proved the appropriateness of using test control of knowledge (open-ended and closed-ended tests) in the educational process and determined the main conditions of its objectivity. The research conducted by Roediger and Karpicke (2006) shows that tests have a greater positive impact on memorisation of information than revision or additional study (testing effect). The global trends of development and implementation of pedagogical test technologies at higher education institutions are revealed in the work of Holubieva, Bakhtiyarova and Radchenko (2014) and Akimov et al. (2021). The scientists sum up all benefits of test control in the two main ones: high technological effectiveness of the control and objectivity of its results. The research carried out by Yanenko (2020) has a practical purpose, as it experimentally reveals the advantages of digital tests over their paper variants. The author points out the similarity between digital tests and computer games, which increases the interest in studying. However, the analysis of the

informational space of the issue has shown that the concept of "test technology" is used mainly in the context of automated control of knowledge by means of tests and modern computer equipment (Holubieva, Bakhtiiarova, & Radchenko, 2014; Mysnyk, 2008; Szurek, 2015). It is important for the definition of the concept of "test technology" to be based on the essence of the term of "teaching technology" (a set of forms, methods, techniques and means to achieve a planned educational result (Kucheruk, 2007)) because the goals of the research are to structure the technological cycle of testing, develop a model of the test technology of teaching, reveal the ways of optimisation of the educational process using the test technology.

The aim of the article is to demonstrate the practical experience in implementation of the model of the test technology of teaching in the process of preparation of future specialists in the pedagogical sphere.

2. Methods

2.1 Research Design

A combination of quantitative and qualitative methods of collecting information has been used to conduct a complex study of efficiency of the test technology of teaching: students' attitude towards working in a digital environment and implementation of the test technology in the studying process (tests) has been determined by means of quantitative data; descriptive statistics has been used to generalise and systematise the results of the survey; the mathematical method has been applied to measure the level of difficulty of the test tasks; the method of visualisation has been used in the process of describing the data and building a model (diagram, scheme). The analysis and scientific substantiation of the issue have been carried out by means of the synchronous and descriptive method, which has been expressed though observation, structuring with the purpose of further synthesis and generalisation. The descriptive method has been used to analyse the conducted survey. The comparison method has been applied to determine the efficiency of the test technology of teaching compared with the teaching without its application.

2.2 Participants

The first-year and second-year university students had studied the Ukrainian Language for Professional Purposes course using the test technology for one semester. The authors of the article conducted the survey in January 2021. 92 students of the pedagogical faculty took part in the research. Participation in the survey was voluntary, the students agreed for the results to be published on the condition of their anonymity.

2.3 Data Analysis

At the beginning of the experiment, an informal interview with students had been conducted in order to determine their attitude towards using the test technology of teaching. On the basis of the collected data, the low quality of test tasks the students had completed was confirmed: low-quality distractors, contentual and formal hints, mistakes in the answer options marked as correct, etc. All of this had provided an opportunity to easily guess the right answer, so even students with a low success rate had high testing results.

The formative stage of the experiment included the development of eight types of tests, their use in the process of teaching Ukrainian Language for Professional Purposes, analysis of the drawbacks, correction and, as a result, creation of a model of the test technology of teaching the above-mentioned course. The outcomes of the research were determined at the control stage by conducting a survey among the students who were the participants of the experiment.

2.4 Instruments and Procedure

The instruments and materials used during the experiment were PCs with the appropriate software, such electronic platforms for distance education as Zoom, Google Meet, D-Learn (a system for distance education of Vasyl Stefanyk Precarpathian National University), modern Internet resources, search engines, and Google Forms program for conduction of the experimental survey.

The main questions of the survey were: "Do you have enough skills of working in a digital environment?", "How do you master new electronic systems of education?", "Name the advantages of electronic testing", "Name the drawbacks of electronic testing", "Does testing on each topic have an impact on the quality of learning?", "In the testing process, do you have time left to search for information on the Internet or in books?", "Is the test control of students' knowledge efficient?", "Do you consider counting test results based on the 2nd attempt fair?".

2.5 Ethical Issues

The research has been conducted in accordance with the ethics of scientific work. Students were informed about the

aim of the survey and publication of its results. No identification data of the participants has been used in the publication.

3. Results

Relying on the experience of teaching the Ukrainian Language for Professional Purposes discipline at a pedagogical institution of higher education and the results of analysis of the available research of local and foreign scientists, it can be stated that testing not only is a method of control and evaluation of the quality of students' educational achievements but also performs important educational, developmental and training functions. In particular, using thematic educational tests contributes to intensification of independent working through self-control and self-evaluation, forms the students' competence of time management and entrepreneurship, as it makes them rationalise the time expenses for preparation to the testing and completion of the tests. The task of creating different types of tests on a topic and their approbation in microgroups helps to systematise and generalise information, emphasize the main points, arrange the classification characteristics, and improve the linguistic competence, the problem of development of which exists both among students and teachers. Creation of tests in the electronic form develops the informational and technological competence, improves the thoughtful reading skills, which is an integral part of formation and development of a person, their education and professional career. The appropriate content of tests forms the terminological, documentary, editorial and corrective competences. The elements of gamification in electronic tests create additional motivation to study.

The mentioned aspects provide an opportunity to formulate the definition of the "test technology of teaching Ukrainian Language for Professional Purposes" concept: a system of forms, types, kinds, methods of creation and techniques of using test tasks, processing and analysis of the results of testing for the purpose of improving the efficiency of formation of the determined competences of students in the context of teaching Ukrainian Language for Professional Purposes. In the hierarchy of the analysed concepts, test technology of teaching takes a border position connecting testing (as a method, way, procedure for conduction), test (as an instrument), test task (as an element of a test that meets certain requirements) and task in the test form (as an exercise) (Figure 1).
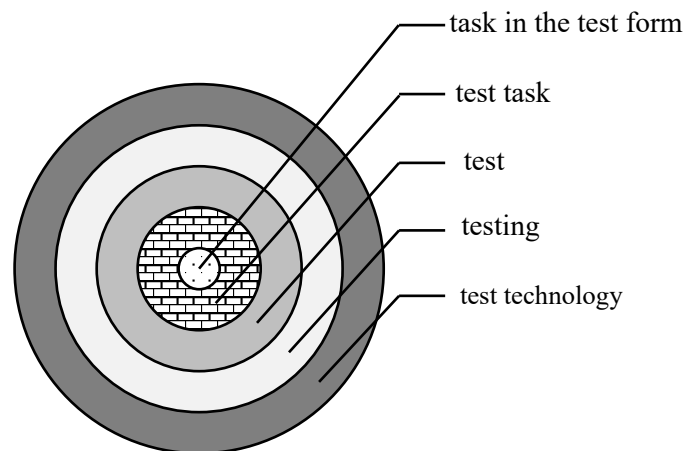

Figure 1. Terminological Hierarchy of the "task in the test form", "test task", "test", "testing" and "test technology" Concepts

The algorithm of preparation and conduction of testing of each type (introductory, educational, current, control) envisages a repetitive closed complex of actions, which is named "technological cycle of testing" in the context of the test technology of teaching.

Analysis of the scientific research in the sphere of testology provides an opportunity to structure the technological cycle of testing in Ukrainian Language for Professional Purposes, which is visualised in Figure 2.
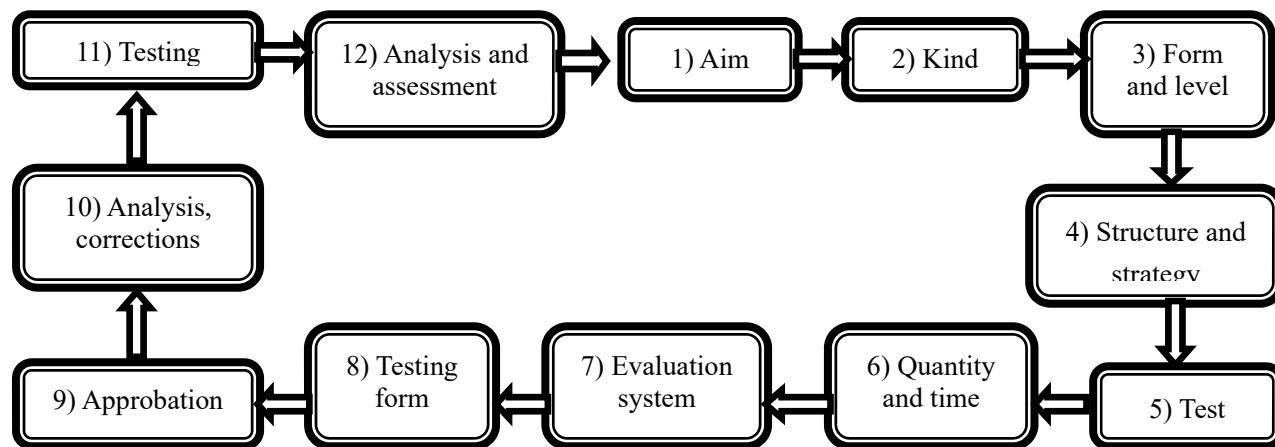
Figure 2. The Technological Cycle of Testing in Ukrainian Language for Professional Purposes

It is necessary to point out that revision of the technological cycle visualised in Figure 2 is carried out during preparation and conduction of every following testing. The element-by-element analysis has been performed on the basis of using the test technology of teaching Ukrainian Language for Professional Purposes and the experimental survey among students of the 1st and 2nd years of the pedagogical faculty of Vasyl Stefanyk Precarpathian National University.

1. Determination of the aim of testing, which depends on the planned results of teaching. For example, the educational testing in the "State Language – the Language of Professional Communication" topic envisages attainment of the sufficient level of knowledge by students for completion of tasks of the educational programme of Ukrainian Language for Professional Purposes: 1) to form clear understanding of the concepts "language" and "speech", "Ukrainian national language" and "Ukrainian literary language", "language of professional communication", their mutual and differential features; 2) to improve the appropriate use of the modern Ukrainian literary language standards, relying on the school course; 3) to facilitate the comprehension of the role of the state language in the professional activity. As the aim of testing is educational, the results of teaching Ukrainian Language for Professional Purposes that are subject to evaluation have been determined: 1) a student can explain the difference between national and literary language, describe the main characteristics of literary language, explain the "professional language and communicative competence" term; 2) a student differentiates language standards and uses their theoretical statements in practice, can explain orthograms and punctograms; 3) a student knows the main legislative acts of Ukraine on the language, can explain the role of the state language in the professional activity.

The experimental test technology of teaching Ukrainian Language for Professional Purposes also included introductory testing, the aim of which was determination of the level of the linguistic competence of students and clarification of problematic aspects for its improvement. The introductory test consisted of 40 test tasks (10 tasks on each linguistic field: orthography, lexicology, syntax and punctuation). Marks for this type of work were not included in the overall score of students.

2. Selection of the kind of the test. Since a test contentually covers questions of one discipline, it needs to be homogenous. The content of a test is created on the basis of material of a certain topic, module or course as a whole. Each task of a test is aimed at attainment of determined results of teaching and cannot extend beyond the programme.

3. Determination of the form of test tasks (open-ended, closed-ended or combined) and their difficulty level. For educational testing, it is worth selecting tests of the medium difficulty level, since the low level will not provide an objective result, and the high level will decrease the motivation to study of students with a low success rate. Accordingly, a proportion of closed-ended and open-ended test tasks is formed.

4. Building the structure of the test (instruction for students, content of the test task, answer options, the number of points) and the strategy of positioning the tasks (from easy to difficult, mixed, subtests) (Bondar, 2013). The diagnosticity of a test is influenced by the quantity of tasks of the same type, which should not exceed 25 %. The quality of a test depends mostly on correctness of selection of answers to each test task. In testology, there have been developed the requirements for creation of distractors (wrong but plausible answer options) (Serhiienko, & Kukhar,

2011, p. 14-15), the main ones being plausibility, homogeneity and correctness. The similarity between a distractor and the correct answer in a test task can be based on the situational similarity, linguistic formulation, which creates an illusion of correctness for an unprepared student. However, using false statements that create informational chaos and eliminate the educational function of the test is unacceptable. For example, the test task for studying documentation on personnel and contract issues in the Ukrainian Language for Professional Purposes course has been constructed on the basis of definitions of various documents and the interpretation of the word "characteristic", that is two related contexts (documentary and commonly used).

A characteristic is: a) a document that officially expresses the public opinion on an employee as a member of the community and is created on the employee's demand or at a written request of another institution for submission of the document to it; b) a document containing a brief summary of the education, labour activity, professional success and achievements of the person who creates it; c) a document that briefly states the personal, educational, professional data on a person; d) a spoken description of a person.

Information presented in such a test task is homogeneous (definitions of concepts are presented), correct (such definitions really exist but concern different concepts) and plausible (to choose the correct answer, understanding of semantics and context of the question and knowledge of documents on the topic are needed). Replacement of a distractor with a formulation that is out of context (for example, *c) the whole part of a decimal logarithm*) becomes a hint about incorrectness of the answer, reducing the objectivity of the test.

The implicit "hints" also include: 1) using a different style of a distractor (reduction of scientificity); 2) significant shortening of formulation of distractors as opposed to the detailed, extensive correct answer; 3) a change of semantic context (for instance, a question on pedagogy having a distractor on mathematics); 4) using distractors of a test task as correct answers to other test tasks; 5) presence of verbal hints, the so-called verbal associations (Kartashova & Prokhorenkov, 2013, p. 50), in the text of a task (for example, the same word combinations being used both in the task and the correct answer).

5. Creation of a bank of test tasks. In order to ensure the variability of educational testing, it is recommended to create no less than 100 test tasks on the topic which the variants of tests are formed on. For the purpose of determination of the efficiency of educational thematic testing, a questionnaire has been conducted among 92 students of the pedagogical faculty after they had passed the Ukrainian Language for Professional Purposes course. The respondents' answers to the question "Does testing on each topic have an impact on the quality of learning?" (Question 10) were divided the following way (Figure 3):
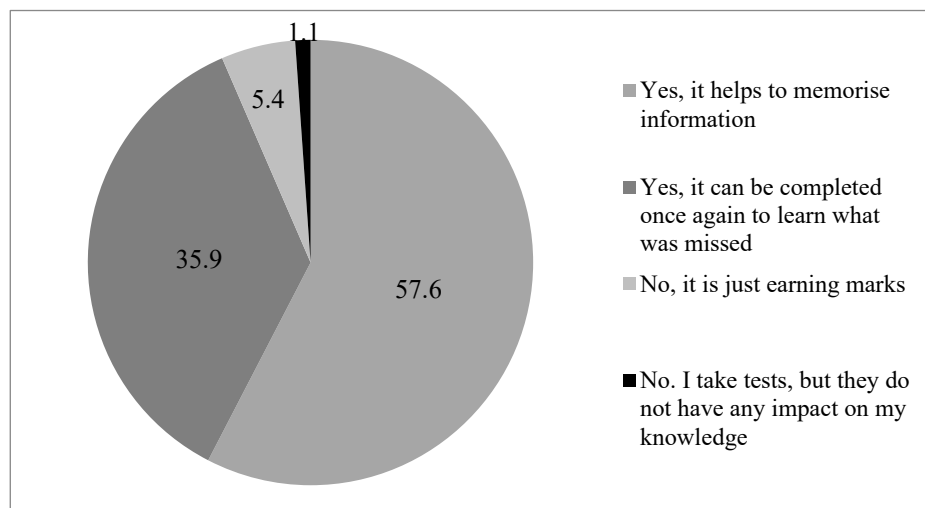

Figure 3. Self-evaluation of the Impact of the Test Technology on the Quality of Knowledge

As shown in Figure 3, the majority of students (93,5%) confirm the positive impact of educational testing on the level of mastering of material, emphasizing the opportunity for revision (35,9 %) and better memorisation (57,6 %). It is worth noting that 18,5 % of the participants of the survey were students with the average mark being "excellent", 70,7 % had "good", and 10,9 % had "satisfactory".

6. Determination of the quantitative and temporal characteristics of the test. From the author's point of view, the optimal solution for an educational thematic test is creation of 5 variants of tests, each one containing 20 test tasks. Every student has 2 attempts of testing with the lower limit of completion being 70 %. If both attempts are failed, they are followed by revision of the theoretical material and practical tasks, which unlock next 2 attempts and so forth up to reaching the 70 % quality of test completion.

The control test consisted of 10 variants, each one containing 40 test tasks (or an automatic selection for every student). They had to be completed within 2 attempts, the first positive one (more than 50 % of correct answers) being counted as the final result.

The examination test contained 50 test tasks, which were randomly selected from a general set of test tasks by an electronic system on the D-Learn distance education platform. The practice of conduction of testing in Ukrainian Language for Professional Purposes indicates that its optimal duration should not exceed 1 minute for each test task. Increase of the time for completion of a test reduces its objectivity, since it provides the opportunity to search for information on other sources. On the contrary, reduction of the time limit raises the difficulty level of the test.

The survey that had been carried out among students within the research (Questions 13, 18) has shown that 43,5 % of the respondents consider one minute for completion of a test task to be too little to look for any information, 64,1 % do not need to do this, 23,9 % have to work faster than normal to be able to carry out such a search, 25 % manage to find the answers to only one or two tests, 7,6 % state that they have enough time to use additional sources. The absolute majority of the respondents (68,5 %) prefer the test form of knowledge control (Question 11) and consider it efficient (71,7 %) (Question 17).

7. Establishment of an evaluation system. A single system of evaluation of tests creates equal conditions for all students and removes subjective moments from evaluation, which increases the trust in such a type of control. The 100-point scale has proved to be convenient and efficient for both control and examination testing because it can be easily adapted to any quantity of test tasks. In the educational (thematic) testing that contains a small number of tasks, a correct answer is worth one point with the corresponding coefficient to convert the result into the 5-point system. For example, 20 tests are evaluated with the coefficient of 0,25, 10 tests with 0,5, etc.

The survey conducted among students after they had completed the Ukrainian Language for Professional Purposes course using the test technology during the examination has shown (Question 12) that 53,3 % of the respondents are convinced that the evaluation of the examination in the test form is more objective than in the usual written and spoken form. Counting the results of a test based on the 2nd attempt (Question 14) is considered appropriate only in cases of technical problems by the majority of students (65,2 %).

8. Selection of the form of testing: paper or computer. In the conditions of the pandemic, all kinds of tests in the Ukrainian Language for Professional Purposes course were conducted in the electronic form, on the D-LEARN distance education platform of Vasyl Stefanyk Precarpathian National University. The D-Learn electronic system of testing has the following advantages:

1) the opportunity to upload any quantity of test tasks in a single file;

2) mixing questions and answers in a test;

3) automatic random selection of a given quantity of tasks from all uploaded ones for each student, which makes cheating impossible;

4) adjustment of the needed evaluation system and automatic conduction of evaluation;

5) the opportunity to set time limits for test completion;

6) setting of the opening and closure of the testing system on a specific day and time without involvement of the test developer;

7) assignment of a test to a particular group of students;

8) the opportunity to choose a form of displaying of test tasks (the classic form displays all tasks at once, the selective one shows one test task per page);

9) setting the permitted number of attempts (from 1 to 3);

10) determination of compulsory test tasks and tasks for revision;

11) the opportunity to block tasks;

12) adjustment of displaying of grades to the teacher and students, the success chart, and the answer protocol with

the correct options being marked;

13) saving of test results, which provides the opportunity for further analysis of their efficiency for the purpose of correction of the educational process.

The main disadvantages of electronic testing, as the questionnaire of students has shown (Question 5), include technical issues (absence of an internet connection or its instability, low technical capabilities of the means of conduction of testing), the opportunity to guess the correct answer, the impossibility to control the independence of completion of a test by all students, the absence of live communication. At the same time, 72,8 % of the respondents consider the electronic form of testing to be more convenient than the paper one (Question 6). This choice is based on the benefits of electronic testing (Question 4), which have been noted in the questionnaire by the students: psychological comfort during completion of a test at home, the opportunity to change an answer without corrections, time saving, quick receiving of results, their confidentiality, mobility (the opportunity to complete a test regardless of the location), and equality of conditions for all students.

It is worth pointing out that that working in a digital environment does not cause significant difficulties for students of the 1st and 2nd years (Question 2, Figure 4), and the specificity of working on new educational platforms, one of which is the D-Learn system, is mastered by them independently (54,3 %) or with minor help from other students (35,9 %) (Question 3).
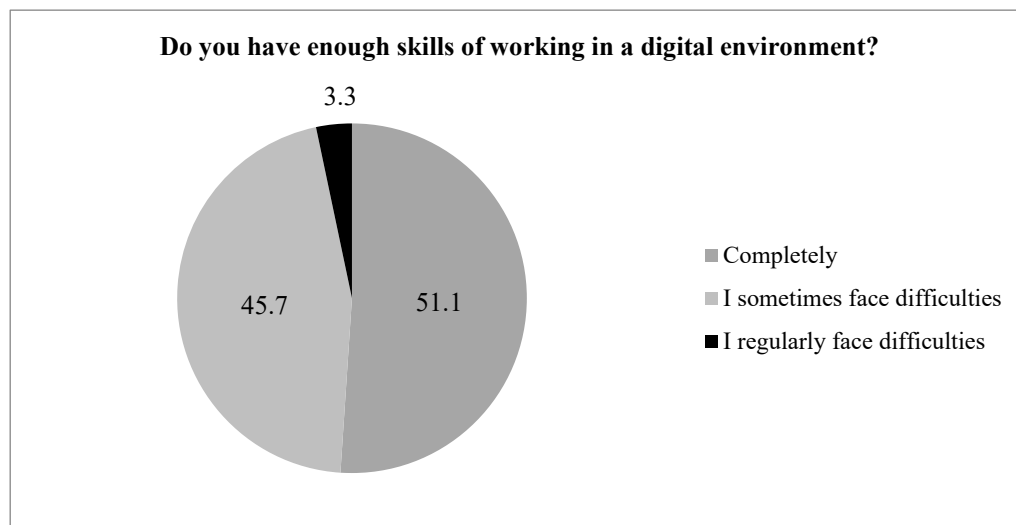

Figure 4. The Survey Conducted among Students. Question 3

9. Experimental approbation of tests in Ukrainian Language for Professional Purposes was carried out during the educational process in one of the student groups on the basis of thematic test tasks. Creation of pre-test tasks was based on the axioms 1 and 2 for requirements and standardisation of testing (Kartashova & Prokhorenkov, 2013, p. 89-90). In case of further correction of the content or the form of tests, the students were enabled to complete them for the second time. Control and examination tests were structured on the basis of thematic ones, therefore their approbation did not have any impact on the final marks of students.

10. Analysis of the conduction procedure and results of the experimental approbation of a test, making necessary adjustments to its content and form. The following aspects were subject to content adjustment:

1) Balancing the test tasks of the hard (25 %), medium (50 %), and easy (25 %) levels of completion difficulty. The test tasks of the medium difficulty in Ukrainian Language for Professional Purposes include the ones that require orientation in the professional context and the ability to use the obtained knowledge (to evaluate the competence) (Bloom, 1956). An example of a test task for assessment of the level of development of the documentary competence:

Choose the option where all dates are spelled correctly:

a) 14.08.10; 14.VIII.2010; 14 August 2010;

b) 3.03.2009; 3 March 2009; 12.3.2009;

c) 25.09.2016; 2016.09.25;

d) 11.11.20, 12.III.2020, 13.04.98.

Easy test tasks in Ukrainian Language for Professional Purposes include tasks on knowledge, understanding, and differentiation (to evaluate the presence / absence of knowledge) (Bloom, 1956). An example of an easy test task for checking the level of mastery in the "Scientific Style and Its Means in the Professional Communication" topic:

The scientific style texts include:

a) table, declaration, autobiography, assignment, agreement;

b) sketch, short story, article, feuilleton, novella;

c) theses, programme, abstract, review, monograph;

d) weather forecast, news, criminal chronicle.

Difficult test tasks envisage detection of the ability to conduct independent analysis, synthesis and assessment of information (to evaluate the competence) (Bloom, 1956). An example of a difficult test task for determination of the level of development of the general scientific competence of students after completing the Ukrainian Language for Professional Purposes course:

Choose the most accurate formulation of the topic of a scientific article that considers the problem of formation of the model of the communicative competence of future teachers in the process of their preparation to the professional activity at higher education institutions.

a) Modelling of the Process of Professional Preparation of Future Teachers.

b) The Communicative Competence of Future Teachers at Higher Education Institutions.

c) Preparation of Future Teachers to the Professional Activity at Higher Education Institutions.

d) The Communicative Competence of Future Teachers as a Marker of Preparation to the Professional Activity at Higher Education Institutions.

The difficulty of a task is determined by the percentage of students that completed it without mistakes. For instance, if a task was completed by 100 students (Sz), 45 of whom did it correctly (Pz), then

$$Is = \frac{Pz}{Sz}$$

where I_s is the index of difficulty of the test task; S_z is the total quantity of students that completed the test task; P_z is the quantity of students that completed the test task correctly.

$$Is = \frac{45}{100} = 0{,}45$$

If the difficulty index is between 0 and 0,39, the test task is easy; if the index is between 0,40 and 0,59, the task is of the medium difficulty; if the index is 0,6 and higher, the test task is of the high difficulty level (Kartashova & Prokhorenkov, 2013, p. 45).

Test tasks of the high difficulty level also include open-ended questions, which require a detailed answer. Their use in electronic testing is possible, but checking and evaluation cannot be automated.

2) In the process of analysis of the conduction procedure and results of the experimental approbation of the test, formulations of distractors were also to be corrected as they should not include a partially correct answer, instructions causing ambiguity of understanding, and answer keys.

11. Conduction of testing. During the experimental use of the test technology of teaching Ukrainian Language for Professional Purposes, the students were studying distantly. Therefore, two kinds of interaction were used in the process of testing: synchronous and asynchronous. The synchronous interaction took place during lectures. Consideration of each question of a lecture ended with 3-4 test tasks, which were displayed on the screen via the online platform of Zoom or Google Meet and had a time limit set by the teacher (as a rule, 3-4 minutes). Results were fixed in the chat.

Another form of the synchronous interaction was used during practical classes for generalisation of the material.

Testing was carried out based on Google Forms and limited temporally. The students had the opportunity to immediately get their marks, analyse the incorrect answers and discuss them. The platform permits creating test tasks of different kinds: with one answer or several, choosing the answer or typing it. In addition, the teacher gets a graphic visualisation of the test results, which provides the opportunity for their analysis and corresponding correction.

For the appropriate monitoring of the independence of completion of control and examination tests, the synchronous interaction in the systems of Zoom and D-Learn has been used.

From the author's point of view, the asynchronous interaction between the teacher and the students is appropriate during the introductory testing, completion of thematic educational tests, which envisage reaching the pass grade, control of the retaining knowledge in Ukrainian Language for Professional Purposes, and use of exercise tests.

Exercise tests are interpreted as a combination of tasks in the test form that have been created by students independently within a determined topic and according to the outlined requirements. As the test technology of teaching is becoming widespread not only at higher education institutions, but also at institutions of general secondary education, including the primary school, there arises the necessity of methodical preparation of students for working with tests. Besides, this "reverse side" of testing has a positive impact on mastering the programmatic course, since structuring and systematisation of material take place imperceptibly and casually.

12. Analysis and evaluation of test results. The final element of the technological cycle of testing in Ukrainian Language for Professional Purposes envisages checking of tests, their evaluation, and analysis of the qualitative and quantitative indicators. On the condition of use of test tasks of the closed-ended type only, checking is conducted automatically with instant evaluation and the opportunity for displaying the correct / incorrect answers on the screen. As the experience shows, this setting is appropriate during the introductory and educational testing (at lectures, practical classes, in the process of self-preparation), when there is an opportunity for analysis of drawbacks and self-improvement. The control and examination tests should end with a mark only, since modern technological means permit students to fix the correctness or incorrectness of answers and use this information in violation of the academic integrity.
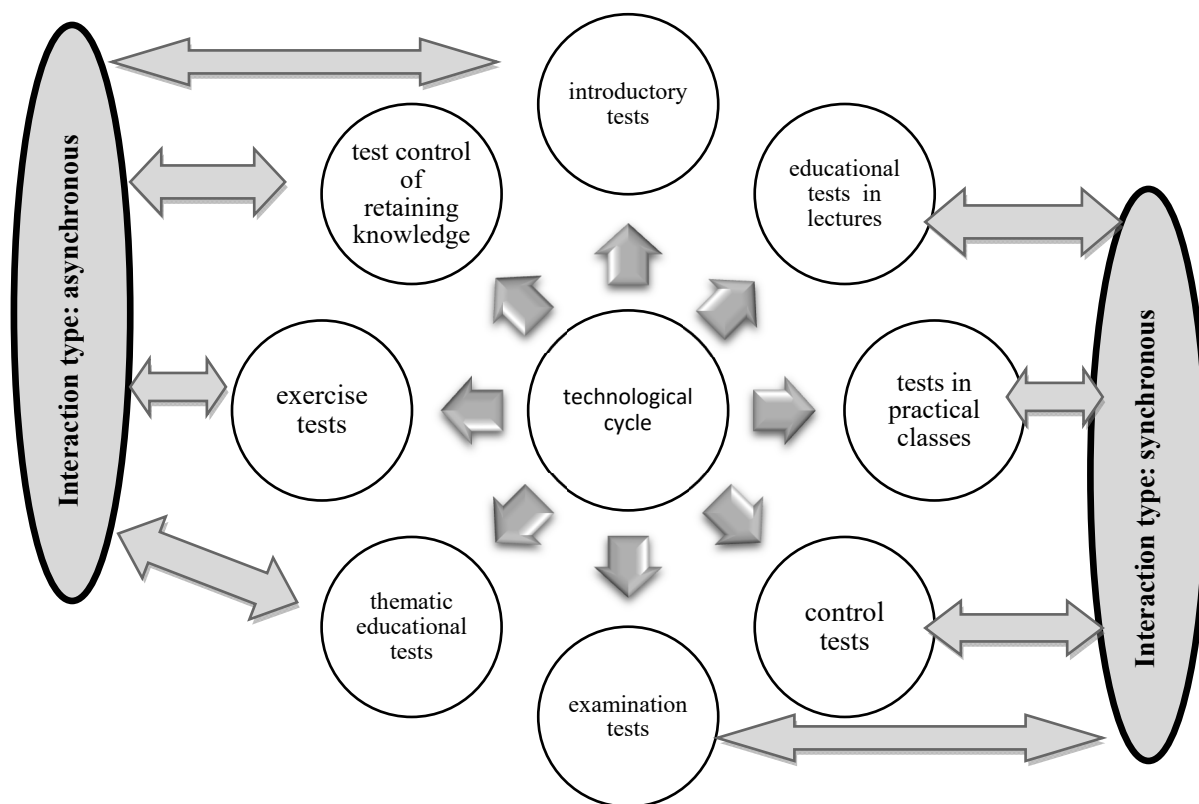

Figure 5. The Model of the Test Technology of Teaching of Ukrainian Language for Professional Purposes

Analysis of testing results provides the opportunity to figure out the moments that are difficult for understanding and correct the educational process accordingly.

On the basis of research into the procedural elements of the technological cycle of testing in Ukrainian Language for Professional Purposes, a model of the test technology of teaching of the course has been constructed (Figure 5).

Each one of the eight kinds of tests depicted in Figure 5, which are used in the Ukrainian Language for Professional Purposes course, undergoes a technological cycle of development, approbation, conduction and analysis (Figure 2) and is carried out in the process of synchronous (lecture, practice, control, examination tests) or asynchronous (introductory, thematic, exercise tests, test control of retaining knowledge) interaction between the teacher and students. As the practice of teaching at a pedagogical institution of higher education and the conducted research show, the test technology of teaching significantly increases the qualitative indicators of mastering the material because of the motivational component, objectivity of evaluation, psychological comfort, repeating cyclicality and elements of gamification in the technical component of testing.

4. Discussion

In the context of the research, it is important to distinguish the essence of the concepts of "task in the test form", "test tasks", "test", "testing" and "test technology" for the purpose of clarification of the main advantages, drawbacks and requirements for creation and application of the test technology in the process of teaching Ukrainian Language for Professional Purposes.

The analysis of scientific works in the determined direction has provided the opportunity to detect a certain terminological inconsistency. In particular, the conceptual definitions of a test by Avanesov (1989) as a system of tasks of a specific form, certain content, and increasing difficulty, which allows to qualitatively assess the structure and measure the level of preparation of students, Bulakh and Mruha: "a combination of test tasks selected according to certain rules for measuring a certain quantitative indicator" (2006, p. 9) are considerably broadened in the work of Makhomed: a test is "an instrument consisting of a qualimetrically checked system of test tasks, a standardised procedure of conduction, and previously designed technology of processing and analysis of results" (2014, p. 59). As can be seen, the concept of "test" includes both the procedure of conduction and the technology of processing the results. At the same time, in understanding of the same author, testing is "a scientifically substantiated process of measurement (by means of tests) of the quality of characteristics of a personality" (Makhomed, 2014, p. 59). There appears an overlap of the essence of two concepts, which requires additional differentiation.

Parashchenko, Leonskyi and Leonska define the concept of "test" as "a challenge that is fixed in time and intended for determination of quantitative (and qualitative) individual psychological qualities" (2006, p. 76). A definition that is similar in its content is used by D. Shvets (2010, p. 172). From the point of view of Adamova and Bahriy: "a test implies a combination of tasks that are aimed at determination and measurement of the level of mastering certain parts of educational content; meanwhile, the tasks should be provided gradually with increasing difficulty" (2012, p. 3). The same authors make the following statement, "a test is a standardised method of determination of the level and structure of readiness of students" (2012, p. 3). Therefore, there exists a contradiction between the interpretation of the test as an object (instrument), a method, and a process (of using this instrument) (Akimova, Akimova & Akimova, 2022).

In the conceptual apparatus of testology, there is present a term of "test tasks", which is mostly interpreted unambiguously, "a component of a test that corresponds to the requirements for tasks in the test form and has passed the necessary check on statistical characteristics" (Kukhar & Serhiienko, 2010, p. 540). If a task has not undergone the appropriate examination but had been created according to the necessary form, the "task in the test form" term is used (Fedorenko & Kovalenko, 2006; Blazhko, 2010).

Testing as a method of measurement of the level of knowledge has not caused any significant differences in general scientific definitions. Analysis of research by Hrynyk and Pylypiv (2013, p. 98), Bulakh and Mruha (2006, p. 9), Makhomed (2014, p. 58-59), Adamova and Bahriy (2012, p. 5), Kukhar and Serhiyenko (2010) and others has confirmed the unambiguousness of interpretation of this concept: testing is a test method, a result of testing and interpretation of results of testing. However, in some works, the term of "testing" is used in the meaning that is synonymous to the term of "test" (Boliubash, 2017, p. 117-118; Simonenko, 2013, p. 321; Predyk, 2013, p. 83).

The majority of the analysed pieces of scientific research consider testing only as a method of measurement and control of students' knowledge. Nevertheless, the experience of teaching Ukrainian Language for Professional Purposes at a pedagogical institution of higher education proves the effectiveness of using tests with educational

goals. In particular, this use envisages determination of the level of completion of a set of tests as conditional admission to studying the next topic. For example, comprehension of the concept of a document, its purpose, classification, structure, requirements for the content and placement of requisites is a necessary condition for successful mastering of the following topics, which concern arrangement of documents on personnel and contract issues, as well as reference and informational documentation. In order to achieve the necessary degree of mastering the material, the teacher creates a set of thematic tests, determining the level required for their completion (on average, 70 points for the "good" level). In doing so, the quantity of attempts per day is limited to two. In case of both attempts being unsuccessful, the student is recommended to read the theoretical material once again, complete the practical assignments, and only after this they are permitted to access the next attempts to complete the testing. The student's motivation is the amount of time spent on completion of the testing (Bilavych, et. al. 2020a; 2020b), the necessity of additional practical work, and general visibility of results of each student. This form of organisation of educational activity has proved its effectiveness in the conditions of distance education, when the share of independent work of students increased.

Taking into account the above-mentioned aspects, the definitions of the concepts of "test" and "testing" are proposed as elements of the test technology of teaching. A test is an instrument for the educational and controlling activity of a pedagogue, which consists of a system of test tasks for measurement of the level of mastering the educational material or its increase. Testing is a method of measurement of quantitative indicators with the use of tests (as well as the process of its conduction).

5. Conclusion

Consequently, implementation of the test technology of teaching is nowadays a global trend of improvement of the educational process. The research confirms the efficiency of using the test technology of teaching students and the positive attitude of future pedagogues towards it. However, there exists the necessity of methodical preparation of teachers for using tests in the educational process, as a poorly formulated test task or an incorrectly chosen strategy for conduction of testing or evaluation result in eradication of its outcomes and devaluation of the technology.

Professional combination of various kinds and forms of testing in the context of teaching a discipline, not so much to control as to increase the quality of teaching becomes an indicator of high qualification of a pedagogue. Therefore, mastering the bases of implementation of the test technology of teaching, particularly the structure of the technological cycle of testing, should find its place in professional preparation of a future primary school teacher.

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