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Section 1. Applied psychology

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INTEGRATING INFORMATION TECHNOLOGY IN THE FORMATION OF PROFESSIONAL COMMUNICATIVE COMPETENCE

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Abstract

Teaching English for Specific Purposes is generally regarded as one of the most significant developments in English language pedagogy in recent years. ESP is concerned with meeting linguistic demands of students studying a variety of scientific and technological subjects. These needs should be taken into consideration when planning and implementing English language courses or specialized courses to students of biology. This study aims to explore several issues related to English language instruction and learning and offer possible solutions. Our lingua-technology, which models future biologists' professional communication behaviour in a foreign language, will contribute to the problem's solution. The State Educational Standards-compliant revised curriculum serves as the foundation for the lingua-technology that has been created.

Keywords: *teaching foreign languages, information technologies, future biologists, lingua technology, professional communicative competence*

Introduction

It is crucial to reevaluate the strategies now employed in the higher education for teaching foreign languages and to create and look for novel techniques in light of the advancements in science and technology. There is a need to create new language technologies aimed at developing the professional communicative competence of students of higher education institutions in a foreign language. The lingua-technology we have developed will help solve the problem by modeling the professional communicative activity of future biologists in a foreign language. The developed lingua-technology is based on the updated curriculum in accordance with the State Educational Standards.

Materials and Methods

The formation of students' professional communicative competence in a foreign language is the most optimal form and purpose of foreign language teaching in higher education institutions, based on the conceptual

model of a modern specialist. These processes are carried out on the basis of a step-by-step linguodidactic theory.

Model of formation of professional communicative competence of a hygienist-epidemiologist in a foreign language (Palmer, 1999):

Communicative competence in a foreign language:

Verbal communication: the exchange of oral information on daily topics or scientific work, participation in biological discourse analysis, participation in online conferences, formal meetings and conferences, the process of familiarization with objects, the preparation of acts, public health communication at biological exhibitions, conducting events and outreach.

Speaking: speaking with confidence in intercultural communication and solving problems in the field, discussing issues on various topics and expressing ideas for the improvement of various sanitary conditions with strong arguments, joining the opinions of others, making an impressive speech, planning for foreign colleagues and in the presentation of projects to say that "we" have done or "our team" has done, to express their opinion, approve or reject the information received.

Reading: Skills in reading all types of biological literature.

Writing: communicative intent (conducting formal negotiations, writing evidence in the right order, expressing regret, denial); drawing up an act and; writing an annotation of scientific work, translation from a foreign language into Uzbek / Russian and translation from Uzbek / Russian into a foreign language; official correspondence on the case; filling out questionnaires on sanitary assessment, issuing inspection letters and referrals to SES;

Listening Comprehension: Listening comprehension of biological information, lectures, special abbreviations and secret coded information in a foreign language.

Communication style and image of a hygienist-epidemiologist:

– be able to respect colleagues in intercultural communication, adhere to social norms, address gender differences, manage communication, achieve mutual tolerance, not speak loudly, use less hand gestures, and use more body language, show that they understand the opinion of their interlocutors, adapt quickly and systematically to the situation, do not speak in a very simple and friendly manner, support the opinion of others, anticipate the opinions expressed, be considerate and confident to be

Information content of professional competence:

The information includes biological textbooks in foreign language textbooks, not general biological texts, but biological and hygiene topics. The sequence of training courses is as follows:

1. General biological knowledge

2. Microbiology, infectious diseases, general hygiene, environmental ecology, occupational hygiene, communal hygiene, hygiene of children and adolescents, personal hygiene, food hygiene.

3. Communication in the field of biology, formal biological communication.

4. Ambulance terms.

5. Independent reading of biological literature in a foreign language.

The research is based on the studied software and hardware, and focuses on the foreign language teaching system, where information and communication technologies are an integral part of education.

Software for teaching a foreign language is a set of computer hardware and software used in teaching a foreign language, and it is a necessary element of various information and communication technologies.

An analysis of the impact of the modern education paradigm on the foreign language education system in biology higher education institutions has shown the need to develop it based on personal activity, approach, communicative, developmental, career-oriented approaches.

This linguotechnology provides students with full information about how the interactive communication, the stages of the learning process, the effective communication methods that provide modeling of situations related to professional communicative-cognitive activity in the educational process, taking into account the modern communication environment. It develops and implements, in a word, the interest of students in learning throughout their lives and professional activities, including continuous education, which implies the development of foreign language

learning skills independently. This technology promotes the idea of self-education in language learning. At the same time, students are required to develop their own reflexive skills independently (Reif &, Larkin, 1991). At the same time, it requires the development of students' ability to communicate in a foreign language and the use of information and communication technologies, along with the formation of communicative competence.

These skills can be included in the basic professional competence of a specialist as intellectual competence.

In order to fully achieve the goal of foreign language teaching in higher educational institutions, a variety of information and communication tools (software and hardware) are required to help biologists develop their professional communicative competence in a foreign language.

Regular use of software systems in the educational process has been proven to create a blended learning environment that provides skills development. There was also a gradual formation of the student's independent learning activities (Monterram, 2009).

In accordance with the principle of system integration, the above-mentioned methodological system must meet the following requirements in the educational process based on information and communication technologies:

Psychological and pedagogical requirements:

1) rely on the expanded nomenclature of linguodidactic principles, taking into account the new components of their content;

2) to see the student in the "educational center", to focus on the development of the student's personality, reflexive skills in the development of his autonomy; ensure that teacher-led instruction is gradually transferred to independent learning activities; provide students with complete information about the components of the course; compatibility of teaching and development objectives; integrity; demonstration of education;

3) professional orientation, taking into account the modern conditions of scientific and professional communication, the professional context, the formation of motivation to learn a foreign language, modeling the conditions of communicative and cognitive activity in the process of learning a foreign language and its targeted development acquisition, taking into account the modern communicative environment;

4) The combination of individual, collaborative and group work based on the ICT system and the organization of independent extracurricular activities.

Based on the analysis of the linguodidactical basis for the formation of professional communicative competence of a biologist in a foreign language, there is a need to classify teaching methods in terms of communicative functions. The purpose of foreign language teaching is determined by the needs of society and the social function of the language. In higher education institutions, the strategic goal of foreign language learning is to develop intercultural professional biological communication.

The task of increasing the cognitive activity of students was carried out through the selection of educational materials in accordance with the principle of professional orientation.

Organizing communication based on problem-solving in a foreign language allows modeling of professional situations in the field of biology, especially in reducing the mental stress that occurs in the initial natural foreign language environment.

The organization of foreign language teaching on the principle of differentiated-continuous and professional orientation has shown that there are great opportunities in the implementation of educational tasks of vocational biological education, which is the essence of the lingvodidactic approach.

Research in higher education institutions has shown that focusing on the following aspects can lead to positive results:

– organization of language learning process on the principle of differentiated-continuous and professional orientation;

– teaching professional biological information in a foreign language by modeling various forms of formal biological communication without memorizing foreign language vocabulary and grammar;

– modeling of biological communication with the development of important features of the future profession of biologist;

– Study of lexical and grammatical materials using ICT. Each student will be able to form

a professional dictionary in their future specialty (occupational hygiene, communal hygiene, hygiene of children and adolescents, food hygiene, epidemiology, infectious diseases, etc.);

– the formation of communicative skills, the transition to the design-coordination level of management of cognitive activity of students, the stratification and integration of educational content through the grouping of these problems;

– perseverance, observation, analysis and quick adaptation of the environment, addressing one's inner world, putting oneself in the place of the manager, employee and partner of the object under investigation, quick decision issues of formation of biological communication in a foreign language related to admission, etc. were brought to scientific consideration;

– Relying on a linguodidactic approach using the communicative framework of Biology, which includes social relations, social status, role-playing games, collaborative activities, ethical values in the implementation of foreign language learning by biologists on the principles of differentiated-continuous and professional orientation;

– identification of management technologies, including a single professional communicative scope of biological activity, in particular, the status of subjects of communication, systematized center, subjects of foreign language communication (hygienist-epidemiologist and population, specialists at facilities, hospitals, colleagues) tribe

Conclusion

To conclude, the most effective way to motivate in higher educational institutions is to focus on the cognitive aspect of teaching that helps to shape the professional skills of the biologists. Foreign language teaching should be seen as a means of learning other subjects, not as a goal. It is important to move from language learning to learning as a purposeful speaking activity.

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Section 2. Education system

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COORDINATION SKILLS OF PUPILS IN LEARNING PHYSICAL EDUCATION

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Abstract

With coordination skills should recognize the level of physical motor skills and general and specific motor organs of the entity, capable to realize duty motor with less errors. Coordination skills appear and express the level of "motor coordination". So motor coordination is the most essential features of coordination skills. The higher rates of occurrence of motor coordination, the higher level of coordination abilities of the higher levels of educational quality learning outcomes of sports performed during the learning process of sports teaching of the subjects. The purpose of this review paper is to analyze the literature and understand any movement or any physical activity that is correctly and harmoniously performed to achieve concrete actions of physical education. In order to fulfill this review are using methods of literature analysis, and is made combination and comparison of data from various works of authors varied. In the literature used, one can clearly see the importance of understanding that, the higher the level of pupils' coordination skills, the higher the level of acquisition of teaching tasks and the higher the level of motor skills education.

Keywords: *motor skills, movement, education, physical activity, students, amplitude*

Introduction

The concept and values of coordination skills

Coordinative abilities represent the property of human organization to consciously coordinate separate moving elements into a single whole, with the aim of achieving concrete moving objectives. This coordination of movements is achieved only during their effective, stable and fluent learning process. (Brewer, 2015).

Coordinative skills precondition the speed and effectiveness of learning motor actions with a vital or sports character. They constitute the psychomotor basis of achieving high results. The improvement of motor

coordination also aims at the gradual motor preparation of children to face the needs of life, profession, career and entertainment in the future. So, coordination skills can be evaluated as the essence of pupils' motor preparation. (Fernandes, et al. 2016).

The level of coordination skills is determined, in the first place, by the skills of the individual, which can be summarized with the relevant characteristics as follows:

– Quick reaction to visual and auditory signals, but especially to moving objects;

– Speedy and accurate performance of the movement action within a certain time range;

– Differentiation of spatial, temporal and movement force parameters;

– Adapting to changing moving situations and to unusual moving targets that are set to be reached quickly;

– Predicting the position of the moving object at the right moment;

– Quick orientation of body movement positions in space and time, in relation to the surrounding environment (Kemp, et al. 2019).

Depending on the movement objectives that are defined, coordination skills can appear in the form of maintaining static and dynamic balance, performing actions at a certain pace and tempo, organizing the movement activity at the right time in accordance with the new requirements that a unexpected situation etc. (Donath, 2012).

Based on studies, experiments, experience and contemporary scientific achievements, the greatest intensity of natural growth of coordination skills occurs at the age of 4–5 years. This period of life, which has been considered as the "Golden Age" represents in itself the pace of development of coordination skills. We say this because if it is influenced with clear goals and objectives for their development, then at the age of 7–10, the child's organization is fully ready for a high level of growth. It should be noted here that in boys the level of growth of coordination skills is higher than in girls (according to age). (Mitchell, 2016).

Coordinative skills education tools

The basic means of improving coordination skills is practice (exercise). During this process, the effective development of coordination skills is greatly facilitated when the following methodological steps are taken into account:

- Special development of special skills, such as reaction speed, adaptation to changing conditions, etc. which ensure a high level of coordination skills.
- Regular and correct learning of the technique of various movement actions, which are used as training tools. This is due to the fact that they do not constitute a source of new errors.
- Improving the functions of the analyzers, which help increase the level of coordination skills. Thus, for example, the use of horizontal and rotating tools helps a lot in strengthening the vestibular apparatus and, therefore, increasing the ability to maintain balance.
- Increasing the difficulty through the use of different physical exercises. This is accomplished by changing the spatial, temporal and dynamic parameters. For example, a spatial variation might be "move arms forward up, to the side, down; a temporal variation might be "fast circling of arms, slow circling of them"; a dynamic variation might be "high jump maximum and jump in its half" (Raiola, 2013).

The difficulty of the physical exercise (tool) can be increased by strengthening the external factor, specifically by changing the order of placing the tools, their weight, their height; changing the supporting plane, or increasing its mobility from static to dynamic, etc.; combining such movement habits as walking, running, jumping, catching and waiting for tools; performing exercises with signals or with limited time etc. (Mathisen, 2016).

Particularly effective in the education of coordination skills are the methodical processes aimed at presenting additional information. Thus, for example, it is valuable to use a mirror or visual guides to control movements. These facilitate the formation of skills. Limitation or complete removal of visual information can be used (dark glasses are put on, eyes are closed, a foggy environment). This makes it quite difficult to perform actions, but it empowers the analyzers (Mc. Keuzie, & Kahan, 2008).

The performance of coordination exercises, as a rule, is planned in the first half of the basic part of the lesson, because in the second part of the lesson fatigue comes and the exercise no longer has the proper effectiveness (Beni, et al. 2016).

Rest intervals between exercises should ensure a relatively complete renewal of the students' organism. In this regard, it should be borne in mind that the volume of exercises during the 45 minutes should not be large, because this is compensated by their continuous use in the series of lessons that follow (Armour, 2010).

Exercising (exercise) with the aim of developing coordination skills is considered effective as long as the movements are performed in an automated manner, otherwise they lose their value and stability. This is a decisive moment, which is generally not taken into account by teachers (Kasa, 2012).

Education of the ability to accurately orientate in space

Human spatial orientation is characterized by the ability to maintain clear images of changes in spatial relationships under the conditions of motor activity. These reports in the surrounding environment often take a different character, changing places. There are four states of these human-environment relationships:

– The person and the tools of the surrounding environment remain stationary, for example, shooting at the target with the small ball by the pupil.

– Changes are made only in the external environment, for example the position of the child in the game process.

– Only the spatial condition of the person changes, for example jumping high, long, from a height, etc.;

– Both man and the environment act dynamically (forces), for example mutual interaction between pupils in different game situations.

Human perceptions of changes in the surrounding environment in most cases depend on the refinement of previously formed reflex mechanisms (conditioned reflexes) in analogous situations of activity (Adolph, & Franchak, 2017).

The education of correct orientation in space takes place in several stages:

Strict application of methodical instruction

The essence of this thesis is summed up in that during the performance of the preceding exercise the main aim, which is the spatial orientation, which lies at the foundation of the movement structure, is emphasized. Here, the basis of the instruction should be the preliminary analysis and understanding of the features of the spatial reports as well as their changes during the performance of the exercise. This, without a doubt, ensures the quality of the exercise (Bernardi, & Andrews, 2009).

Motion correction

Correcting errors in the structure of the actions being exercised, using the quick information, makes it possible for the pupil to direct his movements to the objective of correct spatial orientation. The correction can be verbal or through the use of auxiliary, corrective, orienting devices (Zach, & Inglis, 2013).

Verbal correction contains the request (need) to correct the performance of movements such as: "earlier", "later", "less force", "more force" etc. While the equipment and tools provide accurate quantitative information with a convincing effect (chronometer, protractor, metronome, etc.). Verbal correction requires prior preparation by the one who uses it, giving answers beforehand to questions that may arise in the process of practicing (correction). The effect of the correction depends on the time of transmission of the erroneous information during the rest pauses. The shorter the pause, the higher the effect. This means that once the information about the error is given, the correction should start immediately in the exercise process, without delay (Markola, et al. 2016).

Methodology

In order to successfully carry out this review paper, we studied and analyzed the contemporary scientific literature and compared the data from different works of the authors. The methods used are: literature analysis, coordination skills and recommendations.

Conclusion

Based on the content of our material, we reached some basic conclusions, which we are listing as follows:

- Coordination skills are a necessary component for pupils' motor preparation;
- In the literature used, one can clearly see the importance of understanding that the higher the level of students' coordination skills, the higher the level of mastery of teaching tasks and the higher the level of motor skills education;
- The effects of coordination skills derive from the time and preoccupation devoted to them;
- Coordinative skills are in specific relationships with other motor skills. These reports appear in accordance with the psychological, technical, educational, volitional, etc. component;
- Coordination skills, without underestimating other motor skills, is one of the most important skills.

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EVALUATION OF COORDINATION ABILITIES OF THE UPPER AND LOWER LIMBS AND EXPLOSIVE POWER IN CHILDREN AGED9–10 YEARS

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Abstract

Strength and muscle power are essential for human performance and for maintaining bone health at every age. If body mass is the optimal load for maximal power production in weight-bearing activities, then generation of force, motor control, and movement velocity are task-dependent. The main objectives of this study were to evaluate the coordination of the upper and lower limbs and explosive power of 9–10-year-old children, and compare results between boys and girls. A total of 309 subjects (boys n=164, and girls n=145) were randomly selected from four 9-year schools in the city of Tirana. All were fourth grade students. The ROLi test was used to evaluate coordination skills of the upper limbs, while to evaluate coordination of the lower limbs, ROLu test was used. Standing Long Jump (Eurofit 1993) was employed to evaluate the explosive power of the legs.

Keyworlds: *coordination, upper limbs, lower limbs, motor skills, explosive power, ROLu, ROLi*

Introduction

It is commonly agreed that muscle power and strength are important for human performance (Rønnestad et al., 2011; Taipale et al., 2012) and that they support bone health in all age groups (Vicente-Rodríguez et al., 2003). Research has demonstrated that, regardless of cardiorespiratory fitness, teenagers with greater muscle strength have improved lipid metabolic profiles (Vicente-Rodríguez et al., 2003). It is best to assess muscular power, also known as explosive strength in practical contexts, such as a laboratory environment (Wilson & Murphy, 1996). Childhood is a critical time for sensitive performance gains (+10–15% year) to be detected (Catley & Tomkinson, 2011; Sauka et al., 2010). Determining the most pertinent anthropometric and maturity-related variables to monitor talent development, as well as looking into sex-specific predictive morphological and maturation factors to various explosive ac-

tions, may provide insight into the underlying mechanisms behind gender differences in athletic performance (Martin et al., 2004). Muscles are known to generate their maximum power production when subjected to an ideal external load (Cormie et al., 2011). The maximum dynamic output hypothesis was established by Jarić and Marković (2009) and postulates that the majority of athletic actions have a maximum power output that occurs at body mass. In weight-bearing activities, force generation, motor control, and movement velocity are task-dependent if body mass is the ideal load for maximal power output. According to longitudinal research, levels of muscular strength during adolescence appear to follow into adulthood (Kemper et al., 2001; Mikkelsson, 2006), and declines in muscular strength from childhood to adolescence are negatively correlated with changes in overall adiposity (Janz et al., 2002; Twisk et al., 2000). These results emphasize how crucial it is to measure muscle strength at a young age (Ruiz et al., 2009). Resistance training exercises in young subjects can help in building bone, promoting weight control, preventing sports injuries, and enhancing one's cardiovascular risk profile in addition to increasing muscle strength and local muscular endurance (Behm et al., 2008; Kraemer & Fleck, 1992; Strong et al., 2005).

Objectives

Main objectives of this study were to evaluate coordination of the upper and lower limbs and explosive power of children aged 9–10 years and to compare data results between boys and girls.

Methodology

The study was carried out in four 9-year schools in the city of Tirana with the participation of a total of 309 children (boys n=164, and girls n=145), all of whom in the 4th grade. Schools and classes were randomly selected from the Regional Educational Directorate of the city of Tirana. In order to evaluate the coordination abilities of the lower limbs of our subjects, the ROLu test was used, which requires six fitness balls, a stopwatch and a metric tape measure. Children were instructed to perform the exercise three times, in the shortest time possible, from the marked starting point in the direction of one of the five balls marked with numbers 1 to 5. The balls were placed 3 m away from the child and 1.5m apart from each other, except for one which was in a hypothetical perimeter arc. The child was positioned with his back against the balls and was asked to listen to the ball number the teacher called in order to perform the test. Figure 1 shows children during the ROLu test.

Figure 1. *ROLu test*

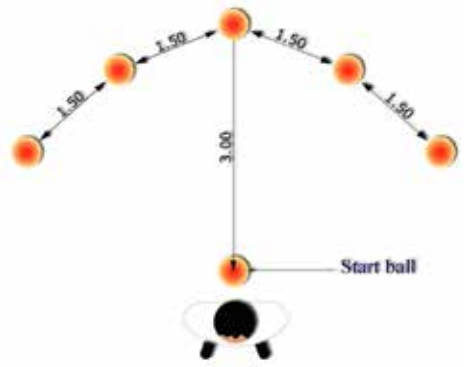


Figure 2. *ROLi test*

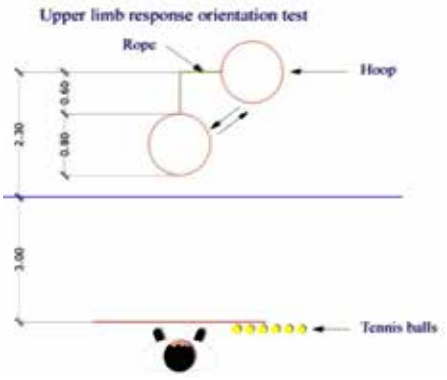
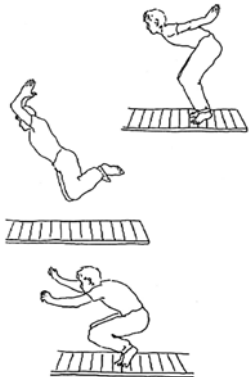


Figure 3. *Standing long Jump test*



ROLi test was used to evaluate coordination skills of the upper limbs (Hirtz et al, 1985). It involved subjects throwing a tennis ball inside a 80 cm diameter circle, hanged from a 60-cm rope and in motion (see Figure 2). Six tennis balls, a circle, a metric tape measure and a rope were needed for the test. If the child throws the ball inside the circle he will get 2 points, if the thrown ball lands on the perimeter of the moving circle the child got 1 point and if it landed out of the circle, the child got 0 point. In order to evaluate the explosive power of the legs, the Standing Long Jump **(**Eurofit 1993) was used (see Figure 3). To perform the test, the child was asked to stand behind a line marked on the ground with feet shoulder-width apart, knees slightly bent, arms coming from behind to

help with momentum and jumps forward as long as he could. The exercise was performed three times and the highest result was recorded by the teachers.

Statistical analysis

The IBM SPSS Statistics 22 was used to perform data analysis. Statistics methods included: descriptive analysis (the total number of children for both boys and girls of the 309 tests as well as the number of children who did not perform the test for each variable given for both genders), the averages in frequency or percentage of data, standard deviation as well as minimum and maximum results achieved during the tests.

Results

Table 1. *Total number of subjects that participated in each and gender distribution*

Gender			ROLu	ROLi	SLJ
Boys	N	Valid	163	161	163
		Missing	1	3	1
Girls	N	Valid	143	144	144
		Missing	2	1	1

Table 1 indicates the total number of subjects who participated in each test, as well as the gender distribution for each test. Only 5 boys and 4 girls did not perform the test due to health reasons. In general, 306 children participated in the ROLu test; 305 children performed the ROLi test, and a total of 307 children performed the SLJ test (lower limb explosive strength).

Table 2. *Coordination abilities of the lower limbs in boys and girls*

Gender		N	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
						Lower	Upper
Boys	ROLu	163	7.67	2.18	0.17	7.34	8.01
Girls	ROLu	143	5.38	2.53	0.21	4.96	5.80

Table 2. shows data results of the coordination abilities of the lower limbs for boys (std +/- 2.18 sec) and girls (std +/- 2.53 sec). The number of male participants is N= 163 and girls N= 143. The average value for boys is 7.67 sec, while the lowest value being 7.34 sec and the highest value 8.01 sec. While for girls, the average value is 5.38 sec, the lowest 4.96 sec and the highest 5.80 sec.

Table 3. *Coordinative abilities of upper limbs in boys and girls*

Gender		Test Value = 0					
		N	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
						Lower	Upper
Boys	ROLi	161	11.44	1.35	0.11	11.23	11.65
Girls	ROLi	144	12.22	1.57	0.13	11.96	12.48

Table 3 shows the results of the coordination abilities of the upper limbs for boys (std +/- 1.35 points) and for girls (std +/- 1.57 points). The number of participants for boys is N= 161 and for girls N= 144.The average value for boys is 11.44 points, while the

highest is 11.65 points and the lowest 11.23 points. Girls scored an average value of 12.22 points, the highest value 12.48 points and the lowest value 11.96 points.

Table 4. *Explosive leg strength of lower limbs in boys and girls (standing long jump), of boys and girls*

Gender		N	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
						Lower	Upper
Boys	SLJ	163	115.558	19	1.49	112.620	118.496
Girls	SLJ	144	104.189	20.13	1.68	100.872	107.505

Table 4 shows results of physical qualities indicators of boys (std +/- 19 cm) and girls (std +/- 20.13 cm) participating in the tests. The average value of standing long jump for boys is 115.558 cm, the lowest value is 112.620cm and the highest value 118.496cm. The average value for standing long jump in girls is 104.189cm, where the lowest value is 100.872cm and the highest value is 107.505cm. The number of participants for boys is N= 163 and for girls N= 144.

Discussions

Based on the measurement and evaluation of coordination skills and physical qualities in children aged 9–10 years we conclude that: girls have better results in coordination skills of the lower limbs as compared to boys. This can be explained by the fact that at this age group there are no obvious differences in terms of the anatomical-physiological aspects and this is the period before puberty where children have similar developmental stages and characteristics. It is observed a slightly higher average of coordination skills of the upper limbs (ROLi) in girls. Children's development has not yet taken the path of obvious gender changes that bring structural, functional and physical differences between them. It is known that girls display higher levels of concentration than boys which results in a higher accuracy in performing tasks. In physical qualities, it is observed that boys have higher explosive leg strength compared to girls. Boys have better physical abilities than girls because their games are more numerous and boys are more active in terms of outdoor games (sports) which last longer and involve variety of movements, which in turn requires strength and resistance during game/sport activity.

Conclusions

In conclusion, based on the results of the study, no visible difference was observed at this age (9.10 years) between boys and girls in terms of the coordination ability of the upper limbs (ROLu), where the average value for boys is 7.67 sec (std +/- 2.18 sec), while for girls mean value is 5.38 sec (std +/- 2.53 sec). It is observed a slightly higher result of coordination skills of the upper limbs (ROLi) in girls. The average value for boys is 11.44 points (std +/- 1.35 points) while for girls the average value is 12.22 points (std +/- 1.57 points). In terms of physical qualities, boys have higher explosive leg strength than girls, as the average value for boys is 115.5cm (std +/- 19) and the average value for girls is 104.1cm (std +/- 20.13). In conclusion, at this age, there is no significant difference in the level of explosive power of children between boys and girls, but in terms of physical qualities, that of explosive strength, boys have higher averages than girls.

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Section 3. General questions of psychology

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THE CONFLICTS AND THEIR SOLUTION WAYS ALSO FEATURES IN SPORTS ORGANIZATIONS

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Abstract

This article is showed the conflicts in sports organizations and ways to resolve them, as well as characteristics of management activities, are important in the main work. In addition, conflicts in sports organizations and the main reasons for their occurrence, as well as methods of conflict management, prevention of conflicts in the field of physical education and sports, are described in terms of finding their solution.

Keywords: *sports manager, conflicts, conflicts, types of conflicts, physical education and sports, management, methods, sports organizations*

Introduction

In today's society, sports activity should be considered as a complex social phenomenon and it should be studied thoroughly (Ovchinnikov, YU. D., Dzyuba, N. YU., 2016). The specific features of regulating the work of personnel in the field of physical education are determined and based on labor legislation and other regulatory legal documents (Alekseev, S. V. 2015). The composition of the employees of sports schools and sports education organizations is different. These include workers in the management system, methodologists, trainers-teachers, technical staff of sports facilities. In the literature on physical education and its field, a sports manager is interpreted as a specialist who holds a leadership position in a physical education and sports organization, has management skills and art, and has the right to make management decisions (Ovchinnikov, Yu., Horkova, L., 2016). The manager's qualification depends on the creative approach to the use of generally accepted principles and methods in the process of management activities.

Materials and methods

Managers work in the field of physical education and sports should consistently perform management tasks and make decisions aimed at eliminating problematic situations and conflict situations. The activity of the

physical education and sports organization depends on the timely and correct adoption of management decisions. In this regard, it is important that each specialist studies the theoretical foundations for making managerial decisions, as well as methods for preparing decisions. In the management decision-making process, it is important to carry out and analyze activities in order to obtain information about the nature of the problem and the next course of action in relation to the chosen solution.

The motivational influence within the team is very necessary for the effective and high-quality activity of the sports organization. In order to form a quality activity, it is necessary to clearly define goals and achieve them regularly. Clear goal setting was considered the basis of effective management. A control objective is a desired, necessary, and important future state of the controlled system. A sports organization does not have a single goal in mind, but a number of goals to plan. In order for sports organizations to achieve their goals, one of the main ways to clearly define and achieve the tasks set before them is to use management methods.

According to A.V. Pochinkin, the concept of "method" is universal. In particular, a method is a set of techniques and actions in a field of activity to achieve a goal or solve a problem. Methods used in management "How to ensure the achievement of the goal?" answers the question (Pochinkin, A.V., 2017). Therefore, the diversity of management methods requires the need to group them based on common characteristics. Such signs may include the nature and strength of the effect. According to the nature of influence, organizational, administrative and legal methods are methods of direct influence, because it is relatively easier to predict the result of their application. In the socio-psychological and economic direction, the methods are included in the methods of indirect influence. Because it is relatively difficult to determine the result in terms of time and volume.

The use of socio-psychological methods implies an understanding of the basics of psychology (Gurevich, P.S., 2015). These methods are the main ones in sports organizations.

In interpersonal relationships, conflicts often arise between people related to solving some issues of social and personal life. These conflicts are called conflicts. Even in modern sports society, such situations are characterized by many conflicts. Competitive relationships are the main type of relationships during sports competitions.

Aspects of the emergence of disputes and conflict situations in any community are considered one of the problematic situations. It represents the aspects related to the psychological characteristics and personality of each employee. In this regard, the teams in sports schools and organizations are not an exception, especially the characteristic of sports, which is connected with competitive tendencies, sometimes turns into aggression.

When studying the situation of conflicts, it is necessary not to lose a systematic view of the problem, and also not to leave out anything in order to narrow the scope of the actual phenomena being studied without introducing excessive details. Conflict as phenomenon has its own aspects and structure, at the same time, it differs in that it is considered as a process and has certain functions. It is also possible to define several specific tasks that are important in the management of the organization and the actions of personnel. First, it's about bringing employees together as a team to work together in a mutually beneficial effort. Solidarity and mutual understanding are important for any team. These qualities are formed on the basis of common goals, visions and values. It is also a key task to be alerted about the failing work in the organization, which allows us to understand the unresolved issues. Therefore, without knowing these basic components, it is impossible to manage the relationship in the conflict process.

In addition to the concept of conflict, the concept of a conflict situation is also often used in our lifestyle. The conflict situation is also interpreted as an integral part of this conflict.

The structure of the conflict, first of all, the conflict arose between the participants, and they are also considered as subjects who perform actions against each other, a conflict or perform protective functions. A conflict situation begins with the activity of one of the parties who manifests himself as an initiative leader at the initial stage of the conflict. In addition to people in the process of mutual disagreement, other members of the team

who are interested in solving this or that issue can also be classified as weak (passive) participants in conflict relations. Therefore, it is important to consider the actions of each participant when studying the conflict.

The initiative is shown with the parties involved is manifested as their needs. And the need is characteristic of any person existing in the society.

Two types of conflict participants are the main links, if one of them resolves the conflict, the conflict ends.

Material and spiritual values, which are considered components of social life, form the subject of conflict between people. The topic is an imaginary problem and the basis for the conflict between people.

The driving force of the conflicts that have arisen includes an object that determines the exact cause of the conflicts that have arisen. Participants in the conflict may deliberately hide the reasons that prompted them to the conflict. If the main object of the conflict is not identified, it will not be resolved, it will be the basis for new conflicts.

In order to consider the conflict as a social phenomenon, it is necessary to study the environment in which it arose. It includes the immediate environment of a person and the social groups to which he belongs (Zernov, S. V., 2011).

In the teams of a modern sports organization, the relationship between an individual and society should be based on respect for everyone's interests, not on obedience. It is such a team that shows that it has developed at a high level and performs the main functions of management, such as cohesion, unity, organization, improvement, and self-management (Lepekhina, A. I., Gryaznova, E. R., 2016).

In order to achieve an effective result in the process of resolving controversial and controversial situations, every employee should learn the levels and basics of behavior in conflict situations from a theoretical and practical point of view.

Results

There are also opinions that the conflict is the result of disorganized team work and the consequences of ineffective management. However, conflicts are inevitable. Even in the most efficient and high-level organizations, conflicts can not only appear, but also have a positive effect on the entire organization. Learn how to manage conflict and use it to improve performance.

Today, there are different definitions of conflict by experts, but they all define the existence of conflicts. Disputes can be hidden or open (Lyahova, E. A., 2007).

In some cases, the lack of agreement is due to the existence of different opinions, views, many ideas, personal interests, and points of view. But, on the other hand, the positive content of the conflict is reflected in the ability to express different opinions, to give more alternative opinions in decision-making. Any conflicts in the organization, accumulated conflicts, are the result of increased social tension. In modern sports, this is mainly manifested by the appearance of dissatisfaction with the state of infrastructure and sports facilities.

Analyzing the literature on the topics of conflicts and conflicts, we can conclude that there are two types of conflicts that affect the development of the team and the organization as a whole.

In particular, some of them have a positive effect on activities, can contribute to the development of relationships and decision-making. Such conflicts are usually called functional. They are distinguished by conflicts that affect the problems in the life of the organization and its members.

Conflicts that interfere with effective interaction and decision-making, and that lead to negative consequences are called dysfunctional conflicts.

When determining the classification of conflicts, one of the important aspects is to pay attention to the reasons for their emergence and the structure of the participants.

On this basis, the following types of disputes are distinguished:

– within a person (conflict between different needs, interests of a certain person);

– interpersonal (conflict between individuals);

– within the group (conflict between the individual and the group);

– intergroup (conflict between groups).

All conflicts that arise during the activity of a sports organization must be resolved. At

the same time, people's actions are different due to the typological characteristics that are unique to each person. From the point of view of psychology, the behavior of people is a component of a conflict situation. First of all, the participants in the conflict have motives that satisfy their interests (Pereverzin, I.I., 2014).

There are five main styles of human behavior in a conflict situation:

1) Adaptation;
2) Compromise;
3) Cooperation;
4) Negligence;
5) Competition.

Conflict management should be implemented in the early stages, because the sooner a problematic situation is identified, the easier it is to eliminate it and find a solution. In order to find management methods, it is first necessary to determine the causes and structure of conflicts. This process includes: prediction, regulation, conflict resolution (Ancupov, A.YA., Haritonov, A.N., 2015).

Before you can solve a problem, you need to gather information about it. The better and more positive the control object is, the better the solution. In this case, the main goal is not only to get detailed information about the management object, but also to objectively show the positive and negative aspects of its situation.

First of all, it is necessary to assess the conflict with common sense, that is, to have an idea about the development of this problem. At this stage, it is recommended to take into account only the facts that are directly related to a certain disagreement between team members. Therefore, it is necessary to take into account the situation before the emergence of a conflict situation and its development in the future. One of the main principles of conflict resolution is its openness, if we hide it, the situation can become worse and reflect other negative situations.

Also, the process aimed at solving the problem, the activity of the sports manager is called conflict prevention. Preventing conflict involves predicting it. This concept makes it possible to predict the level and condition of a future problem, to indicate the causes of its occurrence, and to predict the time of occurrence of a certain conflict situation. To implement this process, methods such as conflict modeling or a survey of sports organization employees can be used.

Conflict prevention is a key tool in the management process. This can be achieved by creating conditions for people's activities and communication that can reduce the likelihood of conflict (Ovchinnikov, YU.D., Dzyuba, N.YU., 2016).

Psychological preparation is important for competent management of conflict situations and situations. Unfortunately, it is not possible to prevent all conflicts in time. For this, it is necessary to know how to effectively get out of the influence of conflicts.

The main forms of conflict resolution: resolution, arrangement, elimination, closure, turning into another conflict (Bochkova, R.V., Polynova, L.V., 2016).

Dispute resolution is a joint action of two parties aimed at ending the problematic situation that has arisen between the participants (Doronin, A.S., 2009).

First, it is necessary to determine the real motives of the opponents. The conflict of parties creates a complex psychological environment in the team, each of the participants is expected to support him, which leads to the breakdown of working conditions among employees. Identifying the problem that caused the misunderstanding is one of the important actions of the sports manager, which is the reason why the conflict does not arise from the beginning over time. Communication is an important point of agreement in this activity (Salimgereev, Z., 2010). If the parties do not want to communicate with each other at the initial stages of the dispute, then it is possible to turn to the help of a third party. If there is no communication between them, the conflict will never find its solution and will not be resolved. Only with the ability to listen to the opposite side can you successfully resolve a conflict situation.

Resolution of disputes in sports organizations should be carried out in the following directions:

– creating a comfortable working environment;
– creating friendly relations between team members;
– establishing proper interpersonal relations;

– choosing the most effective methods of organizing the work process of the team;

– the ability to distinguish causes;

– introduction of measures to prevent the development of disputes and their formation at the initial stage.

Sometimes the attitude to controversial situations in sports is interpreted in different ways. In particular, opinions are expressed about the inevitability of conflicts. Others see the lack of agreement as a positive constructive principle. In their opinion, it is also said that in a certain sense, provoking conflicts is beneficial for the well-being and successful operation of their organization. According to the third opinion, the lack of unity in perspectives is also considered as the basis of negative aspects and events.

Discussion

Modern sports practice shows that managers and coaches with many years of experience working in sports organizations use communication or negotiation skills based on life experience and intuition to manage conflicts. But this kind of approach can sometimes be harmful, because it takes a lot of time and causes other conflicts that have arisen to escalate more quickly. In such cases, there may be situations where there is an authoritarian style of management. The members of the team cannot negotiate freely under equal conditions, it is manifested as a common form of communication that represents a cruel and wrong attitude.

In order to avoid errors in management, the main actions of the head of a sports organization that must be performed in time: not to be late for certain reasons in taking measures to resolve a conflict, not to apply measures to initiators, to make clear decisions to do, to determine the cause of the conflict, not to act according to the established order, because each conflict has its own characteristics. First of all, it is very important for the sports manager or the head of the organization to convince his subordinates of the solution he offers. Ability to listen to and reason with colleagues and to argue with them is an advantage. As one of the main leadership qualities of a manager, he should be distinguished by the characteristic aspect of not raising his voice to his subordinates. Through the manifestation of negative qualities in leadership qualities, he also shows his incompetence and inability to control the situation.

It is very important to objectively analyze one's actions and restore normal relations with a colleague when ending a conflict.

Conclusion

It should be noted that in order to achieve the successful activities of a sports organization and the set goals, a good psychological environment is necessary in the team, the leader must know the essence of the problem that arises in his team and have a high level of skill at preventing conflicts that occur in time.

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Section 4. High professional education

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METHODOLOGICAL SUPPORT FOR THE DEVELOPMENT OF DESIGN COMPETENCE OF FUTURE SPECIALISTS

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Abstract

This article describes the independent educational work of students, the use of a type of Web-quest activity, which includes means of implementing sources of knowledge and finding the results of cognitive activity, which is carried out without the direct help of students. teacher, as well as the use of different types of training at different levels of the educational process to maximize the integration of the Internet into science.

Keywords: *distance education, active project, independent work, web quests, cognitive activity, integration, information resources*

Introduction

Decisions of the President of the Republic of Uzbekistan dated June “5, 2018, No. PQ-3775” “On additional measures to increase the quality of education in higher technical colleges and ensure their active participation in comprehensive reforms implemented in the country” (Usubjanovna, D.M., & Sharifjanovna, Q.M., 2023) and other regulatory legal documents related to this activity in order to ensure the implementation of the specified tasks, significant work was carried out in our country on the development of market economy mechanisms aimed at the development of modern science, technology and technology and their targeted implementation.

The future of any country is logically related to the attention paid to the education of the youth growing up in it. This, in turn, indicates that solving the unresolved issues between education and training, science and production, improving the quality of education in higher technical educational institutions, and the innovative approach to the organization and management of pedagogical processes are being solved (Usubjanovna, D.M., & Sharifjanovna, Q.M., 2023). Teachers working in higher technical institutions should know and be able to apply to the educational process innovative educational technologies, methods of activating the educational process, and interactive methods

that ensure the formation of quality knowledge, skills, and competencies in the taught subjects. The teacher should be able to study the content, essence, purpose and tasks of interactive methods, develop scientifically based information and practical guidelines about them, and after mastering the methods and information technologies, introduce them in the educational process. Distance education is playing an increasingly important role in the modernization of this education. Currently, the higher education system is focused on the independent work of students. One of the standards of European universities is the attitude that a student needs to get his basic education not in the classroom, in lectures and seminars, but in the process of independent work, studying the recommended literature and writing essays, theses, term papers, Final qualifying works, etc.

Literature Rewiev

In recent years, scientists and pedagogues-practitioners have been comprehensively studying the possibilities of involving students in independent creativity and research activities in order to form design competencies in the teaching of specialized subjects (Leontovich, A.V., Lyashko, L. Yu., Kalugina, T. G., Karpov, A. O., Klimova, T. Ye., Mirzakhmedov, B., Obukhov, A. S., Russkikh, G.A., Sychkova, N.V. and others). (Najmiddinova, Yo., Abdullaeva, N., & Davronova, M., 2016). As one of the forms of project activity of distance learning technologies, web quests are used to organize independent work of students. The founders of webquests are Bernie Dodge, a professor of educational technology at San Diego State University (USA) and his student Tom March, who at that time was an English teacher at a high school in Poway, California. Since 1995, they have developed the web-quest model as one of the strategies for successfully integrating the Internet into the educational process. (Usubjanova, D. M.).

In today's post, I would like to mention one of the 10 best technologies that have entered our lives. In the technology of active project work – thanks to modern technology, we can get any information in the specialty by clicking on a single link. At the same time, real life and business expect practical skills from yesterday's graduates, not theoretical knowledge. These two facts call for reformation of the educational process. As one of the forms of project activity of distance learning technologies, web quests are used to organize independent work of students.

Research Methodology

Designing in the process of technical education is one of the important conditions for the effective organization of activities, not only in the correct selection of educational methods in training, but also in the precise definition of teaching forms and their successful implementation (Najmiddinova, Yo. R., & Davronova, M. U., 2020). In the course of the work carried out within the framework of the research, the study and research of interactive forms of training organized on the basis of innovative teaching methods and technologies were included among the main tasks and means have separate importance.

In technical education, practical methods are considered to be the most effective method, and this method is important because 75% of the information is retained in the minds of students, but the methods of independent study of educational materials by students, independent implementation of practical exercises are considered even more effective. 90% of knowledge is acquired and skills are formed. Therefore, the use of active methods aimed at students' independent learning, research, independent problem solving, and practical effects will have a good effect. The number of students in the group is important in the teaching process. If there are not many students in the group, it is possible to speed up teaching using an active method. If there are many students, using active methods may not give good results. It will not be possible to work with every student. When choosing active learning methods, it is important to take into account the educational opportunities of learners, that is, their age, level of training, and the uniqueness of interactions in the team. When preparing for training, choosing the educational method, we must take into account the ability of students to work independently and creatively. Independent educational work of students is a type of activity that includes the search for the means of implementing knowledge

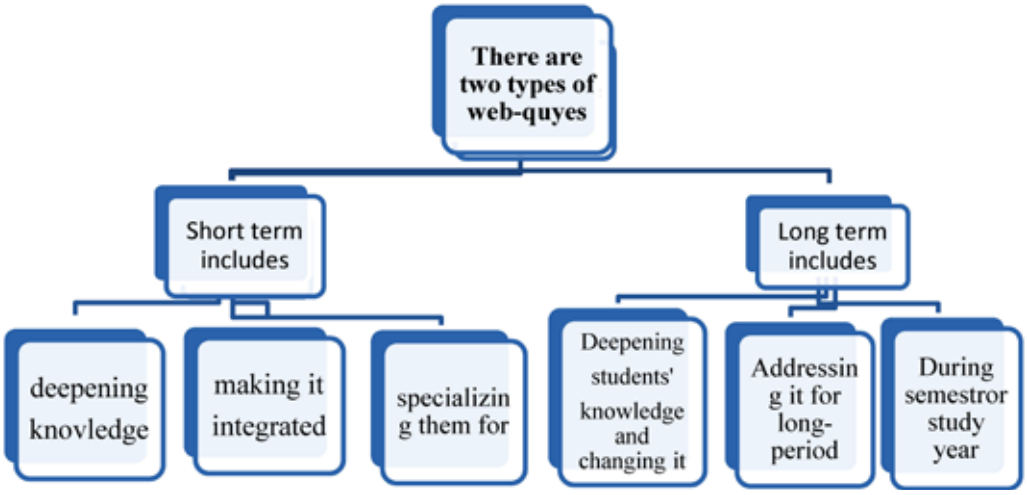
sources and the results of cognitive activity, which is carried out without the direct help of a teacher. Web-quests – search for information on the Internet on a given topic. "Educational web quest is an Internet site that students work on while performing a specific educational task". They can cover a particular problem, subject, or be interdisciplinary. Educational web quests are characterized by the fact that some or all of the information is located on different websites for students to work on independently or in groups.

In pedagogy, web inquiry is a problem task with role-playing elements that use the information resources of the Internet. This is a mini-project based on searching for information on the Internet. A web quest can be created by the teacher or the student, depending on the goals set for the student.

Analysis and Results

Here are many reasons to use web quests in your learning process, let's list some of them. It's an easy way to integrate the Internet into your learning process without requiring special technical knowledge. The quest can be completed individually, but teamwork is preferred when solving the quest. At the same time, two learning objectives such as communication and information exchange are achieved. Web-quests develop critical thinking, as well as the ability to compare, analyze, classify, and think abstractly. Web-quests are divided into the following types.

Figure 1. *The purpose of short-term projects is to acquire knowledge and add it to your knowledge system. Working on a short-term web quest can take anywhere from one to three sessions*



Types of web-quests

Long-term – web quests aimed at expanding and clarifying concepts. After completing the long-term web quest, the student should be able to analyze the acquired knowledge in depth, to be able to change it, and to have the material to create tasks for working on the topic. Working on a long-term web quest can last from a week to a month (maximum two months). The peculiarity of web-quests is that part or all of the information is located on different websites for students to work with it independently or in groups. As a result of working with web-quests, students' work can be published on the Internet in the form of web pages and websites. It is also always interesting to use web quests in the classroom. It is based on researching students, creating an interesting learning process for students and their teachers. The design of the web-quest involves the rational planning of students' time, which is aimed not at finding information, but at using it. The web-quest contributes to:

– searching the Internet for information that the teacher instructs students on;

– data analysis;

– development of students' thinking at the stage of generalization and assessment;

– to develop students' computer skills and increase their vocabulary;

– to encourage students to learn independently from the teacher.

The modern requirements of the State Educational Standard on the organization of extracurricular activities of students envisage such forms of student work as projects and research activities.

The future person who knows how to act according to the model in the process of project activity, but also gets the necessary information independently from the most sources, knows how to analyze it, put forward new ideas, draw conclusions, make decisions in difficult situations and apply them a specialist is formed (Rukhiddinovna, N.Y., Dadamirzaevich, I.D., Usubjanova, D.M., & Kiramidinovna, I.D., 2020).

Using the project method has great advantages

1. It contributes to the successful socialization of graduates by creating a sufficient informational environment in which students learn to act independently.

2. The relevance of research topics, the ability to introduce the results of their research to a wide audience in a live, visual way allows to organize the educational process in all its stages, which supports an activity-based approach.

3. Students learn research technology, which includes the following steps:

– identifying research problems;
– setting goals and objectives;
– formation of research hypotheses;
– determination of data collection and processing methods;
– search for additional information;
– analysis of new facts;
– generalization;
– registration of research results;
– discussion and translation of the obtained results.

4. When choosing a research problem and solving a specific problem within a group, students are guided by their interests and level of preparation:

– Reaching a consensus – developing a solution to an acute problem;
– Evaluation – justifying a certain point of view;
– Journalistic investigation – objective presentation of information (separation of opinion and facts);
– Persuasion is convincing opponents or neutral thinking persons to one's side;
– Scientific research – study of various events, discoveries, facts based on unique online resources.

A web quest typically includes the following steps:

- Introduction at the first stage (justification of the topic and the value of the project). This step provides background information, introduces key concepts, and includes a question for students to reflect on;
- In the second stage, the task (goal, conditions, problem and ways to solve it). This is the most important part of the web quest. The task directs students to a series of specific actions to solve the problem;
- In the third stage, the process (step-by-step description of the work progress, distribution of roles, responsibilities of each participant, links to Internet resources, final product). This section contains instructions on how students should complete the task (order to fill in and sort data);
- Evaluation at the fourth stage (self-evaluation scale and teacher evaluation criteria). There are criteria for evaluating the task performed in the department according to certain standards;
- In the fifth stage, the conclusion (summarizing the results, summarizing the results (what you learned, what skills you gained; rhetorical questions or questions that encourage further research of the topic are possible). This summarizes and encourages reflection on the problem and further research.

Step Six Teacher Pages (optional): These contain information to help other teachers using the web-quest.

The steps involved in working on a Web-Quest include:

Preliminary stage (team). Students get acquainted with the main concepts of the chosen topic, materials of similar projects. Roles in the team are distributed: 1 person out of 4 for 1 role. All members of the team should help each other and teach each other to work with computer programs.

Role stage. Individual teamwork for a common result. Participants simultaneously perform tasks according to their chosen roles. Since the purpose of the work is non-competitive, team members will be taught computer software and Internet skills while working on the web quest. The team summarizes the results of each task together, and participants share materials to achieve a common goal – creating a website.

Tasks of this stage:

– search for information on a specific topic;

– development of site structure;

– creating materials for the site;

– revision of materials for the site.

The final stage. The team works together under the guidance of the teacher and feels responsible for the research results published on the Internet.

Conclusions and proposals are formed based on the results of the study of the problem. A selection of completed works is held, in which the understanding of the task, the reliability of the information used, its relation to the given topic, critical analysis, logic, structure of information, clarity of positions, problem solving approaches, individuality, professionalism of the presentation are evaluated (Kodirov, N. 2023). Both teachers and students participate in the evaluation of the results through discussion or interactive voting (Kodirov, N. 2023).

Conclusions

Completing the Web-Quest tasks involves cooperative activities. Students' assessment of the team member's contribution to the overall work is also a good motivational factor;

– Web-Quest uses various multimedia resource formats as material, such as graphics, photos, tables, videos, animation, video tutorials;

– It's no secret that visual memory helps to better absorb information, so using visual resources of the network is another way to interest students;

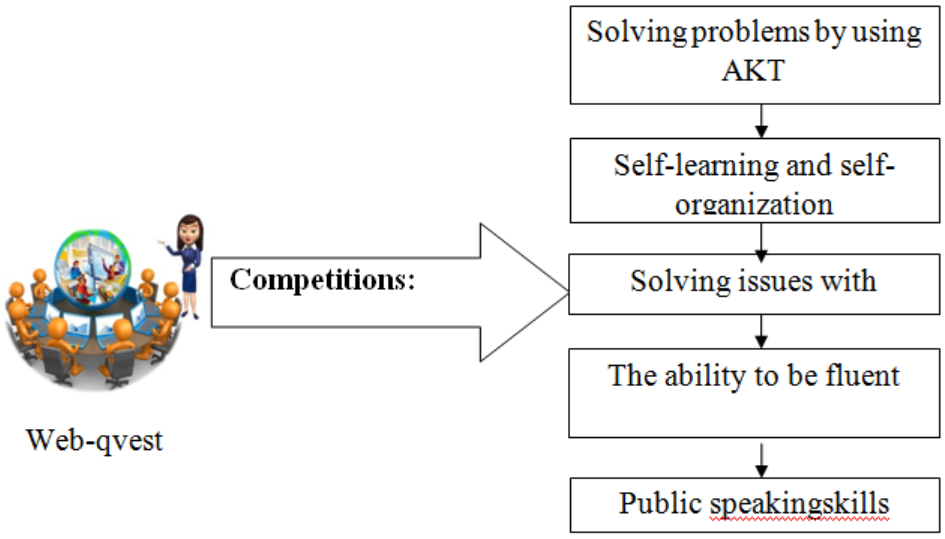
– Web-Quest is easy to use;

– Web-Quest is developed taking into account its integration with other types of educational materials on the studied topic;

– Web- Quest includes a built-in rating mechanism. Assessment gives students a good idea of how the work should be done.

This is the most important part of the Web-Quest. Tasks and assignments should force students to search more based on facts, study the relationships of objects and events, distinguish true knowledge from lies, analyze cause-and-effect relationships in the surrounding world, and directly connect with production. Technical higher education By using web quests as one of the forms of project activity in teaching students of specialized subjects, we will achieve the development of design competencies as follows.

Figure 1. *Educational Web-kvest*



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IMPROVING THE PEDAGOGICAL SYSTEM OF PREPARING STUDENTS FOR PROJECT ACTIVITIES

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Abstract

This article allows you to prepare students for project activities, strive to master their pedagogical culture, be able to effectively organize the educational process and improve the pedagogical system.

Keywords: *system, pedagogical, student, project, technology, improvement, methods, tool, advanced, foreign, educational, standards, knowledge, skills, qualifications*

Introduction

Today, the results of scientific research work carried out in Uzbekistan on the design of the educational process, preparation of requirements for professional activities, the formation of relevant knowledge, skills and qualifications are applied to the process of modernization of the higher education system. In our republic, the issues of "development of the field of Education and science, further improvement of the system of continuing education, improvement of the possibilities of quality educational services, continuation of the policy of training highly qualified personnel in accordance with the modern needs of the labor market" are established as a priority. The work carried out in our country on the formation and development of professional competence of future teachers on the basis of advanced foreign experience, the establishment of didactic features of preparing students for the design of the educational process on the basis of a project approach, the development of their competencies on the design of the educational process.

Literature Analysis and Techniques

Students' mastery of professional knowledge and pedagogical innovations related to the organization of a pedagogical system of preparation for project activities, their cognitive activities and professional independence, their desire to occupy a culture of pedagogical activity make it possible to master competencies in order to be able to effectively organize the educational process. When determining the existing levels of students ' educational process design and organization skills, professors are required to know the types of diagnosis and follow certain principles in its implementation. Diagnosing the existing level of students ' skills in designing the educational process-makes it possible to assess the quality

and effectiveness of the pedagogical process, make regular adjustments to the program of professional development of students, organize the processes of mastering the concept of education and significantly enrich the educational programs, educational methodological complexes and work plan based on determining the content of this process. The analysis of the level and content of professional innovative activities generated by each student should be carried out during a continuous pedagogical process. The process of diagnosing the existing level of skills for the design and organization of the educational process of students makes it possible to fully cover all students and achieve the application of methods and ways of systematic diagnosis according to certain parameters of the progress of professional innovative activities. Within the framework of studying the level of skills of students related to the design and organization of the educational process, the methods used in accordance with the established tasks are divided into several groups. They are: methods that serve to determine the psychological characteristics of professional activity; methods for diagnosing professional pedagogical activity (in order to determine quantitative indicators); methods of research; such methods are used in order to determine the mental states of future teachers; methods that shape students in order to determine the development of professional pedagogical activities are also used. As a result of identifying and analyzing the knowledge, skills and abilities of students regarding the preparation and organization of project activities, we came to the following conclusions:

The results of the study of theoretical approaches and practical experiments on the preparation of students for project activities and its effective organization and their armament with educational technologies on the basis of a professional approach suggest that the problem of preparing students for the design of the educational process in pedagogical science has not found a theoretical-empirical solution. According to the preparation for project activity, and the conditions for its preparation on the basis of a professional approach to its organization, such issues as the definition of the content, forms, methods, methods, mechanisms of this process await their solution. Pedagogical activity aimed at designing the educational process has its didactic and psychological characteristics, and the opportunity to qualitatively improve the professional activities of students is created by identifying these features.

In our opinion, solving the theoretical problems of preparation for project activities in modern educational practice requires the peculiarities of this approach, which can be described as socio-pedagogical: the field of education (educational sphere) on its consequences (changes in social life) and social. Today, the preparation for socio – pedagogical project activities is carried out at different levels of the educational system. Carried out a conceptual analysis and synthesis of theoretical ideas on design in various areas of humanitarian knowledge, allowing to take a new step in understanding the essence of the project in relation to the goals of reform and development of its education; a clarification of the principle of general philosophical development was carried out, on the basis of which innovative changes in education; in regional education, the theoretical basis for preparing for socio-pedagogical project activities is developed, which determines its essence, general principles, technologies, methods of project activities in the processes of modern educational development; a general concept is formed." Preparation for project activities in education "as the main mechanism of development and self-development of the educational system; criteria for the effectiveness of preparation for socio-pedagogical project activities were developed. Theoretical analysis of pedagogical literature allowed some generalizations.

Today, when rapid changes and radical changes occur in society, preparing for project activities is becoming a fundamentally new and fundamental way of determining the internal mechanisms of sufficient change in education, creating conditions and its development. Preparation for socio-pedagogical project activities-raznoprofessional activities organized specifically for the implementation of complex developments in the field of multidisciplinary research and development and educational self-development as a form of social practice. Preparation for socio-pedagogical project activities is an ideal preparation

for project activities (development of the idea of preparation for project activities) and at the same time with the practical implementation of the project plan related activities (pedagogical, scientific, managerial), a number of integration-what is possible, or what should be. The integration of this activity is manifested in the preparation for very specific educational project activities, which are live carriers of developers and realizers. Project activities in education in addition to socio-pedagogical education.

The developing paradigm of training also includes the preparation for psychological and pedagogical project activities of developing educational practices, educational technologies, the construction of methods and means of pedagogical activity and the development of educational processes that create optimal conditions for the real topic and activity of a person's life. Together, it defines the modern image of a practically oriented pedagogical science, capable of preparing for this type of project activity and creating new types of educational processes.

Thus, the theoretical analysis of research in education and the practice of preparing for project activities reveals the necessary conditions for the formation of a new direction in the development of pedagogical science associated with the study of project activities as independent, multifunctional, integral, adaptive, providing organic changes in education. Today, preparation for pedagogical project activities refers to activities to determine the conditions for the implementation of a particular pedagogical system. A. P. According to Tryapitsina, the importance of this approach lies in the fact that it allows you to find the pedagogical foundations of the educational system, ensuring the completeness of the conditions for human formation in the pedagogical process. Modern researchers clearly define the object of preparation for project activities, emphasizing the preparation of educational processes for psychological and pedagogical project activities in the framework of a certain age range, preparation of educational institutions and educational environments for socio-pedagogical project activities and preparation of educational practices for pedagogical project activities. Thus, preparation for project activities in education is a system of organized activities for the implementation of comprehensive research and project development, which provides educational development and self-development as a form of social practice, allows meeting the need for Human education, the society in which it lives and the needs of educational systems. The logic of preparing for pedagogical project activities can be expressed in the forms of organizing the activities of the subjects of the process of analyzing, conceptualizing, programming, planning and designing new educational practices, as well as preparing each other for sequential changes of activities – current problems or situations. In some editions, training is a limited amount of change in preparation for project activities, which allows you to achieve possible resources, Real funds and new goals within the framework of a particular organization.

Conclusion

In conclusion, it is possible to insist that the improvement of the pedagogical system of preparing students for project activities will allow them to master professional knowledge and pedagogical innovations related to the organization, their cognitive activities and professional independence, their desire to master the culture of pedagogical activity will make it possible to master competencies to be able to effectively organize the educational process. The process of diagnosing the existing level of skills for the design and organization of the educational process of students made it possible to fully cover all students and achieve the application of methods and ways of systematic diagnosis according to certain parameters of the progress of professional innovative activities.

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Section 5. Secondary school

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TEACHING SCHOOL CHILDRENS THE PROOF OF GEOMETRIC PROBLEMS

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Abstract

The work is devoted to teaching schoolchildren's how to refute the proposed proof. This uses a technique known as "giving a counterexample". By counterexample we mean an object for which the condition of the statement is true and the conclusion is false.

Keywords: *refutation of evidence, giving a counterexample, equilateral triangle, rectangle*

Introduction

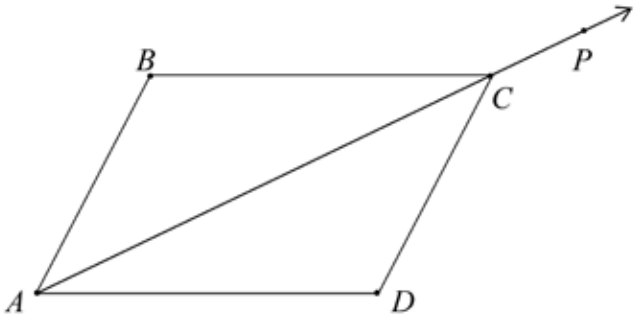
Today to improve the quality of teaching mathematics is one of biggest challenges faced in the field of education. To do so, you have to diversify the process of teaching, to improve the methods of teaching, to start using new approaches for some problems. Let us note works (Aliyev, S., Heydarova, M. and Aghazade, Sh. Solving geometry problems by alternative methods in mathematics education. European Journal of Pure and Applied Mathematics,— 16 (2): 1110–1117, 2023; Aliyev, S., Tahirov, B. and Hashimova, T. Variative problems in teaching mathematics. European Journal of Pure and Applied Mathematics,— 15 (3): 1015–1022, 2022; Aliyev, S., Aghazade, Sh. and Abdullayeva, G. Using area method in secondary school geometry. European Journal of Pure and Applied Mathematics,— 14 (2): 601–607, 2021; Aliyev, S., Hamidova, Sh. and Abdullayeva, G. Some applications of Ptolemy's theorem in secondary school mathematics. European Journal of Pure and Applied Mathematics,— 13 (1): 180–184, 2020; Dr. Anice James. Methods of teaching mathematics. Pub. Neelkamal, 2016.— 432 p; Bremigan, E. G., Bremigan, R. J., Lorch, J. D. Mathematics for secondary school teachers, Pub. The Mathematical Association of America, 2011.— 442 p), which are devoted to the study of these issues.

When refuting the formulation of a theorem, the must common technique is known as “giving a counterexample”. By counterexample we mean an object for which the condition of the statement is true and the conclusion is false. To be convinced of the falsity of a statement, you need to find at least one object for which the condition turns out to be true and the conclusion is false.

Sometimes a special form of giving a counterexample is used, the essence of which is that the counterexample itself is not given, but the method of constructing it is indicated. Let’s give an example: refute the statement: in a parallelogram, the diagonal bisects its angles.

Let’s carry out the following construction: let’s draw an arbitrary angle BAD and draw a ray AP inside it, which is not is bisector. On this ray we mark an arbitrary point C and draw straight lines through it parallel to the sides of the angle BAD. The resulting figure is a parallelogram in which the diagonal AC does not bisect its angle.

Figure 1. *(AC diagonal of a parallelogram ABCD)*

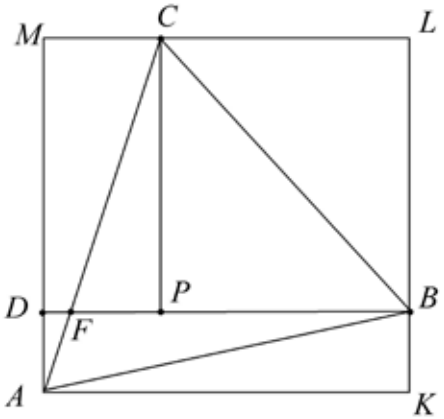


Let us note that refuting a thesis does not mean completely denying it and discarding it as a false statement. In some cases it can be clarified. In our example, the above construction shows that the statement will be true if the parallelogram is a rhombus.

Along will the considered technique of giving a counterexample, you can use indirect techniques to refute statements. Let’s explain them.

Let triangle ABC be inscribed in a rectangle $AMLK$. Let us draw through point B a straight line BD parallel to side AK, intersecting the segments AM and AC at points D and F, respectively. On the other side let $CP \perp BD$. Then

Figure 2. *(Equilateral triangle ABC be inscribed in a rectangle AMLK)*



$$S_{AFB} < S_{ADB} = \frac{1}{2} S_{AKBD},$$

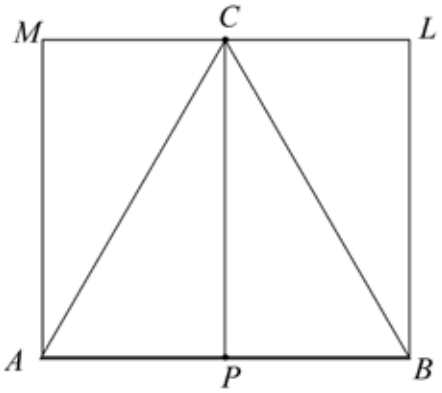
$$S_{FCB} = \frac{1}{2} FB \cdot CP < \frac{1}{2} BD \cdot CP = \frac{1}{2} S_{DBLM}.$$

$$S_{ABC} = S_{AFB} + S_{FCB} < \frac{1}{2} S_{AKBD} + \frac{1}{2} S_{DBLM} = \frac{1}{2} S_{AKLM},$$

$$S_{ABC} < \frac{1}{2} S_{AKLM}.$$

From here

Figure 3. *(Equilateral triangle ABC be inscribed in a rectangle AMLB)*



The found special case refutes the stated statement, which another special case can lead to.

Let equilateral triangle ABC be inscribed in a rectangle $AMLB$ be as in the Figure 3. Let us draw $CP \perp AB$. Then

$$S_{ABC} = \frac{1}{2} AB \cdot CP = \frac{1}{2} S_{ABLM}.$$

When solving not only physical, but also geometric problems, a good and simple means of self-control is "checking by dimension". In any formula, the quantities written on the right and left sides must have the same dimension. This consideration allows us to immediately refute some hypotheses that arise when searching for mathematical patterns. For example, it is known that the area of a triangle with sides a,b,c is calculated using Heron's formula

$$S = \sqrt{p(p-a)(p-b)(p-c)},$$

where p is the semi-perimeter of the triangle. A hypothesis arises that the area of a quadrilateral with sides a,b,c,d is calculated by the formula

$$S = \sqrt{p(p-a)(p-b)(p-c)(p-d)}.$$

Comparison of the dimensions of both parts rejects this hypothesis.

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THE ROLE OF TASKS IN THE DEVELOPMENT OF REFLEXIVE ABILITIES IN STUDENTS IN THE PROCESS OF LEARNING MATHEMATICS

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Abstract

The problem of developing the reflexive abilities of each schoolchild is one of the complex, multifaceted and always relevant problems. Reflection is a universal property of the psyche that ensures the success and effectiveness of an individual's activities.

The article presents various types of reflexive tasks that contribute to the development of reflexive abilities.

Keywords: *reflection, ability, reflexive task, optimality of the method, result of activity, research task, provoking task, self-control*

Introduction

An important goal of teaching in a secondary school is to improve the quality of students' mathematical education. Improving the quality of students' mathematical knowledge largely depends on deepening the student's understanding of mathematical material. One of the means of deepening the understanding of mathematical material is the formation and development of the student's reflective activity. And the development of a student's reflective activity depends on his experience in solving reflective problems.

The role of reflection in learning has been studied by many scientists. But they all agree that the effectiveness of the teacher's influence on students increases due to the activation of reflexive processes. One of such means of activating reflexive processes is the systematic solution of reflexive problems (Далингер В.А., 2014).

Solving reflective problems is seen as a tool that allows the student to understand the process of solving a problem. Solving reflective problems helps students develop the ability to "independently analyze the process of solving a problem" and "critically evaluate their learning activities."

Solving reflective problems serves to develop the following educational skills in students:

– the ability to analyze the condition of the problem in order to identify the main connections in a given educational situation;

– ability to model identified connections;

– ability to generalize methods for solving similar problems.

Leading methodologists identify the following types of reflexive tasks:

– tasks related to finding errors in the proposed solution example;

– tasks related to finding errors in proposed judgments;

– provoking tasks;

– research tasks.

Below are some examples of reflective tasks.

First, let's look at the research questions:

Problem 1. In an aquarium in the shape of a rectangular parallelepiped, 40 cm high and with a base area of 1200 ⟦cm⟧^3, there are 8 red, 4 yellow and 12 white fish.

Question 1. Find the dimensions of the aquarium if the width of its base is 10 cm less than its length.

Solution. Let us denote the width of the base by u. Then we have:

$$u(u+10)=1200,$$

$$u^2+10u-1200=0,$$

$$u=30cm,\quad u+10=40\ cm.$$

This means that the length of the aquarium is 40 cm and the width is 30 cm.

Answer: 30 cm and 40 cm.

Question 2. Find how many ⟦dm⟧^3 volumes of the aquarium are there for each fish?

Solution. According to the conditions of the problem, the height is 40 cm, the width is 30 cm, and the length is 40 cm. Then the volume of the aquarium will be

V = 30 · 40 · 40 = 48000 ⟦cm⟧^3=⟦ 48dm⟧^3.

According to the problem, there are 8 + 4 + + 12 = 24 fish in the aquarium.

This means V/24 = 48/24 = 2 ⟦dm⟧^3.

Answer: 2 ⟦dm⟧^3.

Question 3. Rashid pulled out 2 white fish from the aquarium. Find the probability that a randomly drawn fish is white or red.

Solution. After 2 white fish are pulled out, 10 white, 4 yellow and 8 red fish will remain in the aquarium. First, let's find out what percentage of the fish in the aquarium are yellow?

$$P=\frac{4}{22}=\frac{2}{11}.$$

Then the probability that a randomly drawn fish is not yellow is equal to

$$P=1-\frac{2}{11}=\frac{9}{11}.$$

Task 2. In a school with 500 students, there are 2 clubs – football and chess. Each student can attend one or both clubs. 35% of students do not attend any of the clubs.

Question 1. $\frac{2}{13}$ of the students attending clubs attend both clubs. Find their number.

Solution. First, let's find the number of students attending at least one of the clubs:

$$500 \cdot 0.65 = 325.$$

Of the 325 students, $\frac{2}{13}$ attend both clubs. Means,

$$325\times\frac{2}{13}=50$$

Students attend both circles.

Question 2. Find the number of students attending only one of the clubs if the number of students attending the chess club is half as many as attending the football club.

Solution. Since the number of students attending both clubs is 50, we have:

325 = u +2 · u – 50, 3 · u = 275, u = 125.

Here u is the number of students attending the chess club.

Example. Find the error in the following evidence:

a) "$\frac{1}{25}>\frac{1}{5}$".

Proof:

$$\frac{1}{5}=\frac{1}{5},$$

$$\ln\frac{1}{5}=\ln\frac{1}{5},$$

$$2\cdot\ln\frac{1}{5}>\ln\frac{1}{5},$$

$$\frac{1}{25}>\frac{1}{5}.$$

The error in this proof is that $\ln\frac{1}{5}<0.$

b) "8 = 3"

Proof: Let us solve the system of two linear equations:

$$\begin{cases} x+2y=8? \\ y=6-\frac{x}{2} \end{cases}$$

Substituting y from the second equation into the first, we get:

$$x+2\left(6-\frac{x}{2}\right)=8$$

$$x+3-x=8.$$

$$3=8.$$

The error in this proof is that the value of $x+2y$ in the first equation is taken to be 8, and in the second it is 12.

c) "Half of any number is equal to half of its opposite."

Proof: Take an arbitrary number a and set $b=-\frac{a}{2}$. Then we have that $2\cdot b+a=0.$ Multiplying both sides of the last equality by a we get: $2\cdot ab+a^2=0.$ Adding b^2 to both sides, we get: $b^2+2ab+a^2=b^2$. Taking the square root of both sides of the last equality we get: $b+a=b.$

Since, by condition $b=-\frac{a}{2}$, then from the last equality we have:

$$-\frac{a}{2}+a=-\frac{a}{2} \text{ or } \frac{a}{2}=-\frac{a}{2}.$$

The first mistake in this "proof" is that the case $a = 0$ is not taken into account.

The second mistake is that both sides of the equality cannot be multiplied by a variable that can take the value zero.

The third error is when taking the square root of both sides of an equation.

The above examples show that reflective tasks help students develop assessment skills:

– assessment of the results of activities;

– assessment of the optimality of the method of action;

– assessment of the generality of the method of action.

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