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Technology of organizing inclusive education in modelship sports in institutions of out-of-school education

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Abstract

The organization of high-quality work with children with special educational needs in sports and technical sports requires the search and implementation of new forms, methods and means that make up the technology of inclusive education. In order to implement inclusive training in sports and technical sports, including modelship sports, it is necessary to take into account the strengths and weaknesses, as well as the opportunities and threats that may arise. An important role in the process of implementing the technology of inclusive education belongs to the organizational and methodical aspects, which play an important role in the formation of the educational environment and allow adapting the educational and training process to the needs and capabilities of each pupil.

Purpose: justification of the technology of organizing inclusive education in modelship sports in order to create conditions for the socialization of children with special educational needs.

Material and methods: analysis and generalization of scientific and methodical literature, documentary materials and Internet materials; questionnaire, expert survey of methodologists and heads of departments of sports and technical profile of out-of-school education institutions, trainers/heads of modelship sports in the number of 30 respondents; methods of mathematical statistics.

Results: on the basis of the generalization of the results of the questionnaire and expert survey, the technology of inclusive training in model ship sports was developed, which includes conditions, methods, forms and tools that should be used when working in groups with children with special educational needs. The goals and tasks aimed at the development and socialization of children, as well as success factors and problems affecting the success of inclusive education are defined. The developed technology of inclusive education is the basis of the model ship training program for teaching children with special educational needs.

Conclusions: the developed technology for organizing inclusive training in model ship sports is aimed at creating conditions for the socialization of children with special educational needs by identifying optimal conditions, forms, methods and means, as well as taking into account problems and success factors. It became the basis for the development of a curriculum for extracurricular education in the scientific and technical direction for teaching children with disabilities, which in turn is aimed at the formation of three competencies: cognitive, project-technological, and social-psychological.

Анотація

Єлизавета Шитікова, Ірина Когут, Вікторія Маринич. Технологія організації інклюзивного навчання у судномодельному спорті в закладах позашкільної освіти. Організація якісної роботи з дітьми з особливими освітніми потребами у спортивно-технічних видах спорту вимагає пошуку та впровадження нових форм, методів, засобів тощо, що в комплексі складає технологію інклюзивного навчання. Для реалізації інклюзивного навчання у спортивно-технічних видах спорту, в тому числі судномодельному, необхідно враховувати сильні та слабкі сторони, а також можливості та загрози, що можуть виникати. Важлива роль у процесі реалізації технології інклюзивного навчання належить організаційним та методичним аспектам, які відіграють важливу роль у формуванні освітнього середовища та дозволяють адаптувати навчально-тренувальний процес до потреб та можливостей кожного вихованця. **Мета:** обґрунтування технології організації інклюзивного навчання усудномодельному спорті задля створення умов для соціалізації дітей з особливими освітніми потребами. **Матеріал і методи:** аналіз і узагальнення науково-методичної літератури, документальних матеріалів та матеріалів мережі Інтернет; анкетування, експертне опитування методистів та керівників відділів спортивно-технічного

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Key words:
inclusive education technology
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Ключові слова:
технологія інклюзивного навчання
діти з особливими освітніми потребами
судномодельний спорт

профілю закладів позашкільної освіти, тренерів/керівників гуртків судномоделювання у кількості 30 респондентів; методи математичної статистики. **Результати:** на основі узагальнення результатів анкетування та експертного опитування розроблено технологію інклюзивного навчання у судномодельному спорті, яка включає умови, методи, форми та засоби, що доречно використовувати під час роботи в групах з дітьми з особливими освітніми потребами. Визначені мета та завдання, що спрямовані на розвиток та соціалізацію дітей, а також фактори успішності та проблеми, що вливають на результативність інклюзивного навчання. Розроблена технологія інклюзивного навчання покладена в основу навчальної програми з судномодельного спорту для навчання дітей з особливими освітніми потребами. **Висновки:** розроблена технологія організації інклюзивного навчання у судномодельному спорті спрямована на створення умов для соціалізації дітей з особливими освітніми потребами за рахунок виявлення оптимальних умов, форм, методів та засобів, а також з урахуванням проблем та факторів успішності. Вона стала підґрунтям для розробки навчальної програми з позашкільної освіти науково-технічного напряму для навчання дітей з ООП, яка в свою чергу спрямована на формування трьох компетентностей: пізнавальної, проєктно-технологічної та соціально-психологічної.

Introduction

Initiatives that are currently being implemented in the EU countries on inclusion are being actively implemented in education, sports, culture, etc. and essential for full participation in society. In addition to education, physical activity and sports contribute to the formation of a tolerant attitude towards children with SEN, and also allow them to socialize and integrate with other social groups (European Commission, 2021).

In recent years, inclusive education has been actively introduced in educational institutions, including extracurricular ones. According to scientific research, this learning model contributes to the development of children with SEN as individuals and, in accordance with their abilities and talents in the field of education, science, culture, physical culture and sports, technical and other creativity, contributes to the satisfaction of physical, intellectual needs and communication (Kolupaeva, 2016-2018; Bykovska, 2018). For the qualitative introduction of inclusive education in the system of out-of-school education, it is necessary to create conditions that would meet certain requirements for the formation of a socially adapted and harmoniously developed personality.

Researchers note that technologies leading to the creation of conditions for high-quality and affordable education for each category of children are called inclusive education technologies (Voloshinova, 2017). This is a system of knowledge about the optimal forms, methods, means and ways of organizing the education of children with SEN (Chaika, 2018).

Analysis of foreign literature sources by Losadetal (2021), Kamberidou (2019), Syed (2022) and studies of domestic scientists Romanyuk (2019), Hordiychuk (2021), Dubych (2011), Nagorna (2020) made it possible to generalize the views of specialists on the need to develop technology for inclusive education. And a survey of specialists became the basis for identifying key organizational and methodological aspects for developing a technology for organizing inclusive training in modelship sport.

The relevance of developing a technology for teaching children with SEN in sports and technical section, in particular in ship modeling classes, is justified by the need to improve the educational and methodological support for training athletes in modelship sports, as well as identifying optimal organizational forms for working with children with SEN, which will make technical sports are available for every category of children.

Relationship of research with scientific or practical tasks, plans, programs. The scientific work was carried out in accordance with the Research Plan of the National University of Physical Education and Sports of Ukraine for 2021-2025. on topic 1.4. Theoretical and methodological foundations for the development of professional, non-Olympic and adaptive sports in Ukraine in the context of reforming the sphere of physical culture and sports (state registration number 0121U108294).

Purpose of the study is to substantiate the technology of organizing inclusive education in modelship sports in order to create conditions for the socialization of children with special educational needs.

Material and Methods of the research

Participants

The study involved coaches, heads of section, methodologists and heads of departments of sports and technical profile of out-of-school education institutions with a total of 30 respondents aged from 18 to 60 years old, who have experience of participating in competitions as athletes, hold the position of heads of section and coaches of modelship sports, as well as have relevant qualifications and teaching experience. All participants signed an informed consent form to participate in the study.

Methods

Among the methods used in the study was the analysis of the website of the European Commission on sports and inclusion and strategies for the rights of persons with disabilities for 2021-2030, the synthesis of scientific and methodological literature on the technology of inclusive education, educational resources on the Internet; questioning, expert survey; methods of mathematical statistics.

Procedure (organization of the study)

To achieve the set goals, an analysis of the sites was applied: the European Commission, the Ministry of Education and Science of Ukraine, the Federation of Modelship and Modelship Sports of Ukraine; educational portals and search engines GoogleScholar, ResearchGate; international scientific journals and Internet materials; questioning, expert survey; methods of mathematical statistics.

The results of the survey made it possible to identify and systematize the organizational and methodological aspects of the implementation of inclusive education in modelship sections, as well as, based on the data obtained, to develop a technology for teaching children with SEN when working in inclusive groups.

Statistical analysis

In order to process the obtained data, methods of mathematical statistics were applied. The results were processed using the Microsoft Excel 2016 program. The question about identifying key teaching methods was designed to select three answers. To determine the conditions, forms and means of training ship modelers athletes, which are the basis of the training technology, the ranking method was applied, which made it possible to identify the location of statements in order of their importance. To obtain a high (optimal) degree of agreement among experts on the coefficient of concordance (W, at $p<0.01$), in the process of analyzing the data obtained, the answers that

differed significantly from the average statistical indicators were not taken into account, therefore, the results of a survey of 23 people were included in the analysis. In the studied results are presented in percentage terms.

Results of the research

Inclusive education in out-of-school education is a new and promising direction, in particular, in sports and technical sections, which include modelship sections. Therefore, there is a need to develop a technology for organizing this learning model for these sections, which would take into account the needs of all pupils in one environment.

Based on the analysis and generalization of scientific and information sources, the results of the research, in particular, a survey of specialists in sports and technical sports, including the heads of section / coaches in modelship sports, and our own practical experience, we have developed a technology for organizing inclusive training in modelship sports (Figure 1). The proposed technology is aimed at forming an individual learning trajectory by improving the organizational and methodological support of educational, training and competitive activities.

The developed technology has specific goals and objectives, organizational components (conditions, methods, means, forms) and results of training activities. Among the key teaching methods in modelship sections that are appropriate to use while working in an inclusive class, they singled out practical work (83.33%), the use of visualization methods (56,67%) and team games (36,67%). Among the most effective means of training ship modellers athletes are the use of various visual aids (33%), graphic aids (drawings, diagrams, templates) (27%) and information and communication technologies (simulators, computer programs) (20 %) (Shytikova, et al., 2022).

In each technology, organizational and pedagogical components are distinguished. The organizational aspects included in the technology of inclusive training in modelship sports include the conditions, forms, methods and means that, in the course of the study, the experts identified as the most appropriate when working in inclusive groups. Among the pedagogical factors, one should single out those that the coach uses in the process of preparing athletes. For example: differentiation and individualization of the educational process, the search for ways to overcome difficulties and barriers in the classroom, the interaction of section members and the formation of their social competence, the development of communication skills, the assessment of the achievements of pupils.

The developed technology of inclusive education in modelship became the basis for the curriculum of out-of-school education in the scientific and technical direction for teaching children with SEN. The goal of training is to create conditions for the socialization and technical and technological development of children in an inclusive environment by means of modelship sports (FMSS, 2021).

The objectives of the program are the formation of appropriate competencies that determine the child's readiness for independent living and his active participation in the life of society. Inclusive training in modelship sports is aimed at developing three competencies in children (cognitive, design-technological and socio-psychological), and classes in the section - moral standards, motivation and mutual support, as well as the ability to realize equal opportunities and diversity of children.

One of the aspects of the developed technology is comprehensive support, in particular, the need to involve not only coaches or heads of section, but also parents or other specialists (social workers, psychologists, child assistants, rehabilitators or speech pathologists).

Within the framework of the developed technology for organizing inclusive education in modelship sports, the advantages and significance of joint classes for practically healthy children and children with SEN are summarized (Figure 2).

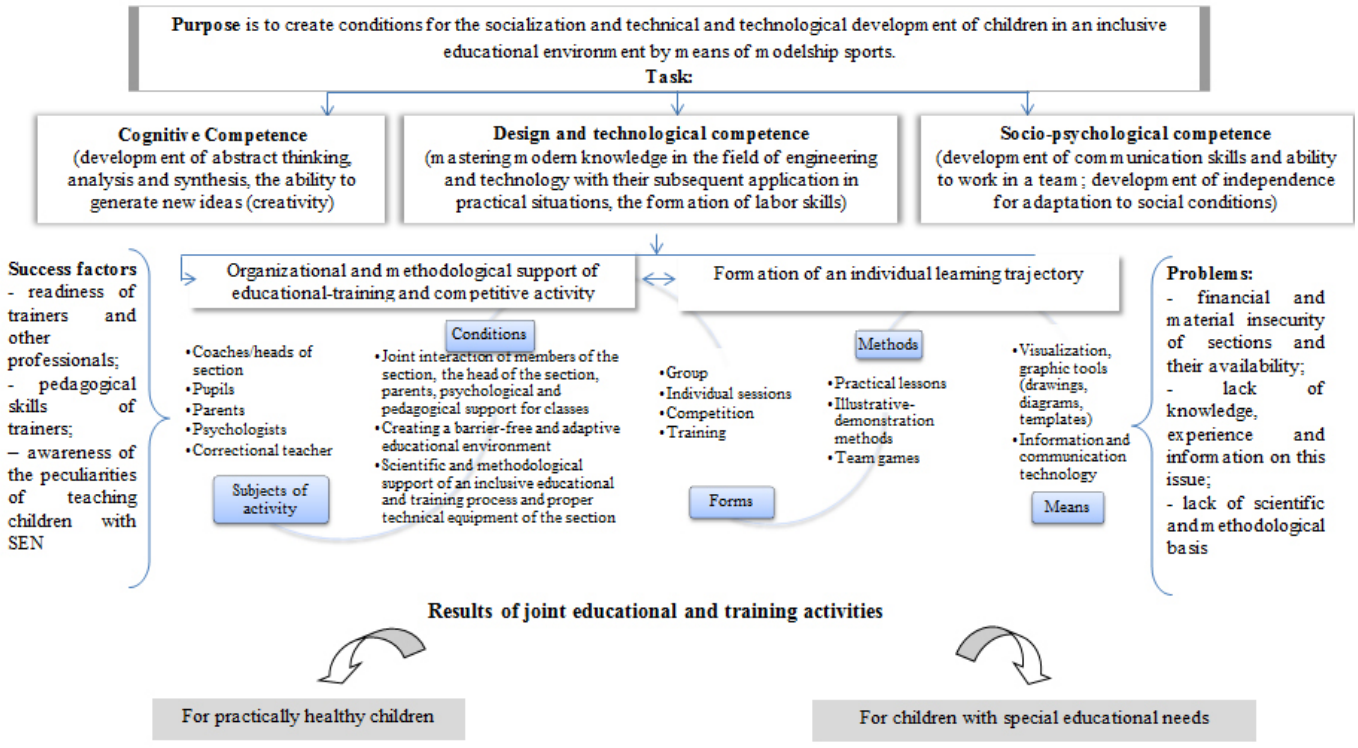

Fig. 1. Technology for organizing inclusive training in modelship sports

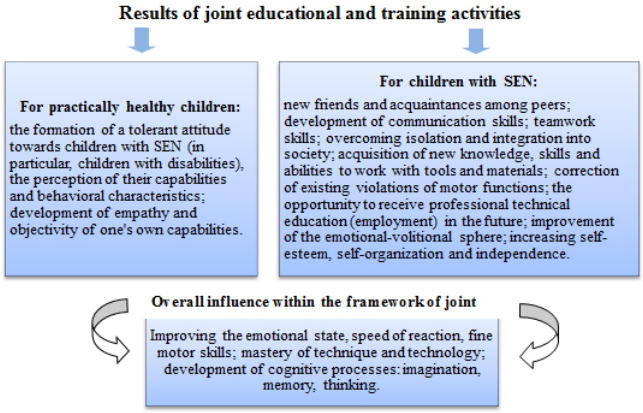

Fig. 2. Results of educational and training activities in the context of inclusive training in modelship sports

The creation of an inclusive educational environment in sports and technical sports and the implementation of the developed technology directly depends on the preliminary planning of classes and preparation for them. The organization of the training process with children with SEN and the organization of a high-quality educational environment depends on the readiness of trainers, their level of skill, theoretical and practical training, psychological attunement, and other factors.

Discussion

Technologies leading to the creation of conditions for high-quality and affordable education for each category of children are called technologies of inclusive education (Voloshinova, 2017). In his research, Dubych (2011) substantiates the technology of inclusive education as a system of knowledge about the optimal forms, methods, means and ways of organizing the education of children with SEN. Our study identified the key and most optimal conditions, forms, methods and means that, in the opinion of trainers / heads of section, it is appropriate to use and take into account when working with children with SEN.

When organizing education in an inclusive environment, it is necessary to take into account the individual characteristics and capabilities of children, as well as take into account their needs and interests. Such an approach, as noted by Nagorna (2020), requires the improvement of the forms, methods and technologies of teaching. Individualization of the training process underlies the technology of inclusive training in modelship sports and is associated with the organizational and methodological support of classes, and also depends on factors that generally contribute to the successful implementation of inclusive training.

Teachers with experience in inclusive education note that one of the key technologies of inclusive education is the formation of vital skills or social competence (skills of interaction, mutual assistance, productive activity, etc.). In the technology presented by us, training is aimed at developing social and psychological competence in children, namely: at developing communication skills and the ability to work in a team; independence for adaptation to social conditions.

Scientists (Voloshinova, 2017; Chaika, 2018) distinguish two groups of inclusive technologies: organizational and pedagogical. Some researchers (Mykhalsky et al., 2020) add health-saving technologies to the named components of inclusive education technology.

Organizational technologies are directly related to the creation of a high-quality inclusive environment, the relationship of a trainer (teacher, lecturer) and other specialists and, in general, the organization of the educational and training process, the formation of an adaptive educational environment and the programming of classes.

Among the pedagogical technologies that can be successfully used during inclusive education, scientists (Voloshinova, 2017) highlight:

1. Technologies of differentiated learning and individualization of the educational process.
2. Technologies for correcting educational difficulties that arise in children in the educational process.
3. Technologies aimed at the formation of social competence.
4. Technologies for evaluating student achievement.

In our study, pedagogical technologies are associated with the approach of the trainer/teacher to the implementation of the educational and training process. They are provided through the individualization and differentiation of the learning process, the formation of the necessary competencies of pupils, and the assessment of achievements. Differentiated learning should be seen as an approach that shows the teacher's acceptance of the diversity of the team: their knowledge, level of preparedness, educational interests, individual learning opportunities, etc.

As Kolupaeva (2018) notes, during the organization of the educational process as part of the work in an inclusive section, the professional skills of teachers, their desire to promote children to a higher level, contribute to their personal success, providing the necessary support and assistance, are clearly manifested. A necessary condition for successful learning is awareness of the ultimate goal and result, as well as planning your own actions to achieve them.

Health-saving technologies include the creation of a favorable microclimate in the team, the development of fine motor skills, communicative development and, in general, the differentiation of education, taking into account the capabilities of children and the ultimate goal of classes.

Previous studies have made it possible to determine that the readiness and qualifications of trainers/heads of section make it possible to create and provide a safe inclusive educational environment, taking into account the specifics of such a learning model and, in general, be able to work with children with SEN in the general team. (Шитікова, 2021).

The conducted survey of experts allows us to confirm the opinion of scientists (Dubich, 2011; Chaika, 2018) on the organizational basis for the implementation of inclusive education. In particular, the implementation of this model of training in modelship should be based on the need to train performers (trainer/heads of section), organization of their work and coordination of activities at different levels; providing scientific and methodological assistance to specialists and monitoring their activities with a view to further improvement; general analysis of the technologization process. In general, in order to implement the technology of inclusive education, it is necessary to create conditions for all areas: empowered school leaders, appropriate infrastructure, better selection and training of teachers, parent involvement and, above all, quality content, effective assessment and appropriate skills for students.

Therefore, in order to organize high-quality inclusive education in modelship sports, it is necessary to take into account a number of organizational and methodological aspects that form the technology for organizing inclusive education. In particular, to find the optimal forms, methods, means and ways of

teaching children with SEN in the same environment as practically healthy children. The totality of this knowledge and their structuring make up the technology of inclusive education in modelship sports.

Conclusions

1. Based on previous studies, analysis of scientific and methodological literature and our own practical experience, a technology for organizing inclusive education in modelship sports was developed, aimed at creating conditions for the socialization of children with SEN by identifying optimal conditions, forms, methods and means, as well as taking into account problems and achievement factors.

2. The developed technology of inclusive education has become the basis for the development of the curriculum for out-of-school education in the scientific and technical direction for teaching children with special educational needs and is aimed at the formation of three competencies: cognitive, design-technological and socio-psychological.

Author Contributions

Yelyzaveta Shytikova – research planning, data collection, manuscript preparation; Iryna Kohut – data interpretation, data analysis; Viktoriia Marynych – data analysis, literature analysis.

Conflicts of Interest

The authors declare no conflict of interest.

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