# International School of Young Scientists as a New Form of Professional Scientific Growth of Educational Institutions of Higher Military Education of Ukraine

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Keywords: Scientific Activity, Content of the Program, Theoretical Approaches, Young Scientists, International School, Non-Formal Education, Security and Defense Sector.

Abstract: The relevance of the research topic is due to the need to raise the military science of Ukraine to the level of world standards for the implementation of scientific activity, the ethics of the behavior of scientists, the presentation of results and achievements, as well as the transition of military affairs to international standards, the European integration of Ukraine, which requires the internationalization of military science, professional informal communication and joint scientific activity, new forms of scientific knowledge and education with the preservation of military secrecy, the specifics of military professional activity. The purpose of the article is to substantiate the essence, content, methods, conditions of preparation and conduct of the school. The research methods were on: 1. Theoretical: pedagogical analysis literature; synthesis and generalization; 2. Empirical: pedagogical experiment, observation and individual conversations, questionnaires, focus groups, express surveys. The scientific novelty of the article is: theoretical foundations of such education (complex of scientific approaches: competence, activity, system, environmental, ethical, theory of blended learning, distance learning, content of education, digital learning, digital pedagogical competencies, problem-oriented learning, theory of adult education, ideas of Waldorf pedagogy, developmental education (according to L. V. Zankov), personal, democratic.), its essence, content, methods of implementation, stages and conditions of preparation and implementation. The practical significance of the research is: methods of identifying stakeholder needs, features of material selection for such an event. The prospects for further research are the organization of the following events taking into account the needs of scientists in the war.

## 1 INTRODUCTION

The process of reforming the sphere of science and education in Ukraine made it possible to move it to the best world standards, a single global scientific space. Today, Ukraine has a large number of higher education institutions (HEIs), as well as departmental HEIs (DHEIs). The operational management of the Ministry of Science and Education of Ukraine (MES) does not include a large part of departmental higher education institutions, primarily military and special ones. At the same time, they all have common problems that require solutions. Thus, the problem of forming scientific consciousness and an individual scientific style of professional activity, teaching the logic of scientific research are urgent tasks for the

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image, accreditation, licensing, and rating of DHEIs. It should be noted that military science is characterized by certain limitations regarding open access to the work of foreign partners, a certain closedness and limitation of the scientific environment of the Armed Forces of Ukraine, scientific discussions due to a small number of specialists who are often subordinate to each other. Departmental restrictions and bureaucracy do not contribute to the development of science, for example, the regulatory framework of the Ministry of Education and Culture and military departments often contradicts each other. The presence of a significant number of closed specialized scientific councils for the defense of dissertations reduces the level of access to scientific achievements and their discussion, inhibits the academic mobility of scientists of higher education institutions.

Therefore, cooperation is needed in the scientific professional growth of scientific and pedagogical workers (SPW), between domestic and foreign higher education institutions, between higher education institutions and higher education institutions, between young scientists and experienced ones for the exchange of scientific activity experience. Previously, such activity would have been prohibited due to military secrecy and the secrecy of military teams from civilian life (Viiskova osvita, 2011). Today, the following changes are being implemented in the Higher Education and Higher Education Institutions: transition of military teams and armed formations of Ukraine to NATO standards, implementation of the competence approach, ensuring the requirements of the National Agency for Quality Assurance of Higher Education for the quality of education. This is possible under the conditions of maintaining the requirements for working with information with limited access and providing information that is open and generally scientific. It should be noted that professional growth of SPWs is their duty under the Law of Ukraine "On Higher Education" (Verkhovna Rada of Ukraine, 2014), it can be carried out in the form of internships, advanced training, scientific schools, webinars, seminars, etc. Until 2022, there were almost no international scientific trainings at DHEIs. There were projects to train teachers in foreign languages, soft skills, etc. by the British Council, the Ministry of Defense of Canada. The ability to conduct scientific research was not developed at the DHEIs and in the programs for obtaining the scientific degree of Ph.D. It was only about training in the educational component of the programs in research methods and methodology, pedagogical skills and professional disciplines from the specialty. Practical issues regarding the fulfillment of requirements for qualified scientific works were not the focus of such programs. The issue of conducting scientific research was also absent in the programs for obtaining a master's degree at DHEIs. Although some programs had "Methods and methodology of scientific research" disciplines, they did not provide a holistic view of scientific activity and its practical implementation.

Existing research in the military sphere and the available experience, which demonstrate the results of scientific research and work for their approval, were considered during the international scientific and practical conferences "Educational and scientific support of the activities of the components of the security and defense sector of Ukraine" (Osvitno-naukove zabezpechennia diialnosti skladovykh sektoru bezpeky i oborony Ukrainy, 2021); "Philosophical-sociological and psychological-pedagogical problems of training a military professional in a globalized world" (Ministerstvo oborony Ukrainy et al., 2021). Separate studies of military education are dedicated to the methodology of scientific research, and according to the definition of Medvid et al. (2021), each level of methodology and theory of scientific knowledge contributes its vision to the solution of the problem and allows us to outline the range of issues that it solves (Trubavina, 2022). Oliynyk (2021) defined the forms and methods of training future masters of military and social management, which is important for the further improvement of forms, conducting international schools. Kozubtsov (2017) claims that the development of the methodological culture of adjuncts during the period of study at the adjunct must be in inseparable unity with the scientific school, organized on the new basis of scientific and methodological support (Kozubtsov, 2017, p. 30). Boiko (2020) argued for carrying out scientific research on the problem of training military leaders on the basis of scientifically based concepts of leadership (Boiko, 2020, p. 37). A competent approach should be the basis of the content of all training of military and civilian military personnel. These studies reveal the common foundations of conducting scientific research. Some of the scientific activities at the Military Academy are conducted even with the involvement of international organizations and the Military Academy (Trubavina et al., 2021), which demonstrates a certain openness of scientific research in military science. At the same time, systematic training in the practice of integral scientific activity in the Higher Education and Research Institute was not the subject of attention of science managers and scientists. Today, this deficiency is compensated by the multifaceted informal education and experience of individual scientists of higher education

institutions, their personal authority in science and opportunities for cooperation. Scientific circles, scientific schools, master classes, scientific laboratories, webinars, methodological seminars of departments, seminars of individual professors on scientific topics, trainings on various aspects of scientific activity can be highlighted.

Internationality is present at many events of HEIs, which allows the exchange of experience and training, internships at the best world models. An example is the annual spring and autumn international scientific schools at H. S. Skovoroda Kharkiv National Pedagogical University, in which for a week graduate students from different cities and countries immerse themselves in scientific activity and the atmosphere of science, which includes getting acquainted with the lives of great scientists (for example, H. S. Skovoroda museum in the village of Skovorodinivka), lectures by leading scientists, exchange of experience, trainings, excursions, etc. The international conference at the same institution is dedicated to current problems of pedagogy and psychology of higher and secondary schools, is held online with master classes and trainings, with co-organizers and participants from all over the world. These are the best samples of scientific thought with attention to every study from student to academic. The conference is held over 3 days, with 300+ participants. Military scientists who have a non-secret topic of scientific activity often take part in such events. At the same time, they and other participants do not see such a scale and scientific activity in their HEIs of this scale, which to some extent underestimates the level of scientific achievements of the military.

It should be noted that when compiling the content of the programs of international science schools in HEIs, the wishes of the degree holders are not taken into account. As a rule, their topics come from the resources of the school's organizer of higher educational institutions, scientific achievements and research of professors. The school program should select the speakers and their topics, and not the conditions of higher education institutions will determine the purpose and content of education. This means that an international school will be successful when its content is built on the needs of all stakeholders of the educational process, when the difficulties in the scientific work of young scientists are taken into account in the school program, and the speakers will come from Ukraine and the world, higher education institutions and higher education institutions are those who correspond to the topic and can speak at the event. Note that this is either work under a grant or on public grounds in Ukraine for speakers and co-organizers. And this is non-formal education, which should not repeat the subject of the educational and scientific program of those obtaining a scientific degree or a master's degree, but should supplement it with what young scientists need. Therefore, the format of the international school as a form of informal education for young scientists of higher education and higher education is relevant, adequate and useful. This article is devoted to the justification of the content and results of the work of such a school. These questions became the purpose of the article.

## 2 RESEARCH METHODOLOGY, METHODS AND MATERIALS

To achieve the goal, we used the following scientific approaches: competence-based (we form research competence in all participants); activity (certain qualities, skills and competences can be formed only in the relevant activity); systemic (we take into account non-formal education as a subsystem of the educational program); environmental (learning through the creation of an educational and scientific environment), ethical; theories of blended learning, distance learning, content of education, digital learning for conducting an online school; problem-oriented learning, an androgogical approach to learning based on their own experience; ideas of Waldorf pedagogy regarding learning by epochs; developmental (learning at a fast pace at the level of theoretical concepts and categories followed by independent practice of skills in practice); personal (educates through the personality of a scientist); democratic (taking into account needs).

We used the following methods of scientific research:

1. Theoretical: theoretical analysis of sources on the problem to determine the format of the event and its content; synthesis and generalization for creating a school program, clarifying the difficulties of scientists, identifying similar experience in Ukraine and abroad;
2. Empirical: a pedagogical experiment to identify the effectiveness of Program 1 of the International School of Young Scientist of the Security and Defense Sector; individual conversations, surveys of all stakeholders; express survey of listeners regarding satisfaction with her program.

We will present the content of the entrance questionnaire. Questionnaire questions were formulated taking into account the purpose of the school and

to adjust the topics of the speeches. The exit questionnaire provided for identifying the results of the school's work, finding out whether the needs of the applicants were met, which are questions for the future.

Express-survey of participants was interactive, electronic and required an answer to 1 question – are you satisfied with your participation in the work of the school? A) Yes; B) Partially; C) No.

The questions for interviews with academic leaders were: What are the difficulties in writing and conducting scientific research for your applicants? What do they ask you most often? What mistakes do you often see in the works of graduate students and associate professors? What should you pay attention to in school? The questions for the heads of higher education institutions and departmental higher educational institutions, leaders of possible members of the organizing committee were as follows: What issues, in your opinion, should be included in the school program? Do you like the topic of the speeches? What can be added to them, taking into account the interests of DHEIs? The results of the surveys resulted in an information sheet outlining a list of topics for the school's performances for future participants of the school.

The pedagogical experiment to check the effectiveness of the school was carried out in the following stages:

1. Diagnostic – provided for the definition of criteria and performance indicators. We chose motivation as a criterion for the effectiveness of the school's work, since it did not include training and exercises for the formation of skills, but was focused on teaching the basic concepts and categories of science at a fast pace in a generalized form with specification and advice for further independent practice of skills in practice when writing your work Stakeholders' satisfaction with the school was also a criterion. We chose cognitive needs as an indicator of satisfaction.

2. Formative – the school itself was held, classes with students according to the program.

3. Final – an exit survey was conducted regarding the effectiveness of the school.

Then the results were compared, the effectiveness of the school was revealed.

# 3 METHODS OF ORGANIZING AND CONDUCTING THE INTERNATIONAL SCHOOL OF YOUNG SCIENTISTS

The 1st International School of Young Scientists of the Security and Defense Sector (1st ISYSSDS) was held on February 3-4, 2022 at the National Academy of the National Guard of Ukraine (NANGU) and included the following stages of work:

*1. Organizational stage.* With the aim of forming the organizing committee, selecting experts who wish to speak, co-organizers of DHEIs and HEIs, interested teachers and managers of DHEIs were told about the idea, the proposal to join the organizing committee and speakers, agreements were made with DHEIs and HEIs, questionnaires, questions for express surveys, interviews were drawn up, focus groups, the form of work of 1st ISYSSDS was selected. This made it possible to train a larger number of scientists. The choice of the form of education was determined by the educational goal. The school is a non-formal education for those obtaining a scientific degree. It is concentrated in time to immerse the participants in the scientific development environment. We have the idea of advancing at a fast pace and learning in epochs what the participant needs most, which excludes spending time on motivating and stimulating the participants, activating their attention and concentrating their attention on the topic of the performances. The school provided for learning through listening, asking questions and understanding listeners for further independent application in practice. School is a format of habitual communication in an educational environment, when it is necessary to convey a lot of material quickly to a large mass of listeners.

As for the organizing committee of the 1st ISYSSDS, it was formed from among experienced scientists and scientific leaders, like-minded people who wanted to go beyond the boundaries of one DHEIs and with joint efforts to do a good job in military education and science to help scientists and spread the best examples of scientific activity. The members of the organizing committee volunteered to become: the Government Commissioner of the CMU on gender policy, rectors and vice-rectors of HEIs and DHEIs – co-organizers of the event, well-known scientists who had interesting scientific achievements. All of them had something to say to the participants, and the topics of their speeches were discussed in the context of the relevance of the program, identified problems and difficulties of graduate students and adjuncts. The following list of in-

stitutions – co-organizers was received on this basis: Government Commissioner for Gender Policy of the CMU; Ukrainian and foreign higher education institutions and higher education institutions, the Council of Young Scientists at the Ministry of Education and Culture. Not everyone who wanted to speak and convey their thoughts on scientific research was able to participate in the first school – there was not enough time in the program, their reports can be used in the next event. All members of the organizing committee and speakers were warned about the free participation in the event and its freeness for the participants, the issuance of certificates of the member of the organizing committee and the school participant. At this stage, technical support for the event was organized with the participation of a large number of people through BigBlueButton.

*2. Diagnostic stage.* It was conducted with the aim of identifying the needs of those seeking education, compiling the content of the program. Answers to the entrance questionnaire and applications were received from 198 participants from 25 institutions of higher military education and civilian higher education institutions, both domestic and foreign. Among the participants were citizens of Ukraine, the People's Republic of China, and the EU. According to this questionnaire, the following answers were received from future participants of the school (these are adjuncts of higher education institutions and graduate students of civilian higher education institutions), they could choose several answers to the questions at the same time (table 1).

So, from table 1 we can see the interest of all topics for the participants, we put the most interesting topics for the majority in the program. These questions did not concern military secrecy, only the conduct of scientific research, are open for discussion. On the other hand, we were interested in the problems of scientists from other countries in their scientific activities. We interviewed post-graduate students from the People's Republic of China and the EU (15 people, various higher education institutions) about what worries them about science. It turned out to be the same questions. The exception was the problem of the procedure for the protection of scientific works, their registration, which are different in different countries. Regarding the desire of the heads of the DHEIs and HEIs institutions: to speed up the running of the school and asked what help is needed, there was a desire to include a gender approach in scientific research, issues of working with information with limited access and academic integrity.

The results of all surveys resulted in an information sheet, which outlined the list of topics for the school's presentations as follows: On February 3-4, 2022, the 1st International School for young academics of the security and defense sector, who want to improve the quality of their scientific activities, master modern technologies of creative scientific research and expand the scientific and educational environment of interaction with colleagues from different regions of Ukraine. During the work of the school, it is planned to conduct classes for young scientists of the security and defense sector by leading scientists of Ukraine from various areas of organization, methodology of conducting scientific research, preparation and defense of dissertations, etc. Based on the results of the scientific forum, it is planned to issue a collection of reports with the assignment of a DOI digital identifier, to send the presentations of the speeches to the participants, and to post a recording of the speeches on the YouTube video hosting site. The subject of the classes was given. After sending out the information letter, NANGU started receiving applications from future participants.

*3. The stage of direct implementation of the school program.* On the basis of surveys of all the main stakeholders of the school, we compiled a curriculum taking into account the approaches to its formation. All speakers made presentations, which were then received by all participants along with certificates. We present the content of the program (table 2).

The main method was informative messages in the form of advice from scientists lasting 20-30 minutes from speakers with the opportunity for listeners to ask questions in the chat for the speakers. This is due to the difficulty of feedback and the use of online interactive methods with a large number of participants for speakers and technical support. At the same time, we did not foresee exercises for 2 days of school work, since the task of applying this in practice corresponds to the individual independent work of everyone on their topic, and the speakers did not have the opportunity to work individually with each of the 198 participants during these 2 days. But it does lead to thoughts about creating an ongoing webinar and blog with advice for degree seekers on methodological and practical tips for advancing academically. And repeating the school after a certain period of time with a new program. Therefore, the school is the first. We expect 2, 3 and further schools after the victory of Ukraine in the war with the Russian Federation. It should be noted that the theoretical material was combined with examples of its application, which meant concretization and visual teaching methods. Speeches included methods of activating the attention of listeners: addressing the audience, showing errors and difficulties, using diagrams, tables, complete and incomplete

Table 1: Entrance questionnaire.

| Question | Answer options | Survey results |
|---|---|---|
| 1. What difficulties do you have when writing a scientific work? | a) choosing a topic;<br>b) substantiation of the scientific apparatus;<br>c) theoretical review of the state of development of the problem;<br>d) writing professional articles;<br>e) writing articles in scientometric databases;<br>g) use of mathematical statistics methods;<br>g) substantiation of research methodology and theory;<br>h) registration of scientific work;<br>i) something else, specify. | a) 101 people (51%)<br>b) 136 people (69%)<br>c) 140 people (71%)<br>d) 98 people (49%)<br>e) 180 people (91%)<br>yes) 87 people (44%)<br>g) 101 people (51%)<br>z) 80 people (40%)<br>i) passing the process of preliminary defense, defense, issues of plagiarism check, academic integrity, idea generation, patience and calmness while working on the dissertation, receiving grants and participation in scientific projects, working with information with limited access, etc. – 147 people (74% ) |
| 2. What are your expectations from participating in the event (school)? | a) obtaining new useful information;<br>b) the opportunity to communicate and get to know like-minded people;<br>c) the opportunity to check the correctness of one's scientific investigations;<br>d) formation of research skills;<br>e) something else, specify. | a) 98 people (49%)<br>b) 36 people (18%)<br>c) 24 people (12%)<br>d) 89 people (45%)<br>e) getting a vision of what a scientific work is and how to write it, what is scientific novelty and how to find it, learn how to write a scientific text – 102 people (51%) |
| 3. Are you interested in the subject of classes within the event (school)? | a) yes;<br>b) partially;<br>c) no. | a) 198 people (100%)<br>b) 0<br>c) 0 |
| 4. What subject of classes arouses the greatest interest? | *provide an answer* | – methodology of scientific research in the security and defense sector – 102 people (52%);<br>– gender approach in scientific research of forces of the security and defense sector – 61 people (31%);<br>– methods and methodology of dissertation work – 78 people (39%);<br>– use of the regulatory framework in the dissertation work – 88 people (44%);<br>– preparation and submission of scientific publications to journals included in international scientometric databases (Scopus, Web of Science, etc.) – 134 people (68%);<br>– preparation of scientific professional articles and theses of reports – 156 people (79%);<br>– methods of conducting scientific research and experimental work – 122 people (62%);<br>– theoretical foundations and state of development of the dissertation problem – 145 people (73%);<br>– work with scientific text: methodical recommendations – 102 people (52%);<br>– academic integrity in scientific research of the security and defense sector, prevention of corruption risks – 140 people (71%);<br>– compliance with information with limited access in scientific research – 121 persons (61%);<br>– publications abroad and internships in EU countries, participation in EU scientific projects – 88 people (44%);<br>- grants in the EU for scientific research. Fundraising activities – 68 people (34%).<br>– creativity in scientific work. How to develop it – 90 people (45%) |

Table 2: Program of the 1st ISYSSDS.

| Time | The topic of the speech |
|---|---|
| 1st day (February 3, 2022) | |
| 12.30-12.40 | Opening of the school, greetings from the members of the school's organizing committee |
| 12.40-13.10 | How to choose a topic for scientific research and stages of work on it |
| 13.10-13.40 | How to write a literature review for a dissertation, which is the theoretical basis of scientific research |
| 13.40-14.00 | Methodology and technique in scientific military-pedagogical research: essence and content |
| 14.00-14.20 | Opportunities for foreign publications and internships in Slovakia |
| 14.20-15.15 | Break |
| 15.15-16.00 | Academic integrity in scientific research in the security and defense sector, prevention of corruption risks. Compliance with Ukrainian legislation in the process of working with information with limited access in scientific research |
| 16.00-16.30 | Ukrainocentrism – origins, challenges, answers of scientific research |
| 16.30-17.00 | Stress resistance in the work on the dissertation |
| 17.00-17.10 | Break |
| 17.10-17.40 | Demarcation of legal acts according to the signs of their normativity during scientific activity |
| 17.40-18.00 | Preparation of scientific professional articles and theses of reports |
| 2nd day (February 4, 2022) | |
| 12.30-13.00 | How to turn from an adjunct into a scientific and pedagogical employee of DHEIs |
| 13.00-13.30 | Gender approach in scientific research of the security and defense sector |
| 13.30-14.00 | Modern trends in educational measurements to improve the quality of training of specialists in the security and defense sector of Ukraine |
| 14.00-14.15 | The importance of the creation and functioning of the Councils of Young Scientists in the Military Academy of the Security and Defense Sector of Ukraine (based on the experience of the National Academy of Land Forces named after Hetman Petro Sahaidachny) |
| 14.00-15.00 | Break |
| 15.00-15.30 | Grants in the EU for scientific research. Fundraising activity |
| 15.30-16.00 | Working with a scientific text: methodical recommendations |
| 16.30-17.00 | Creativity in scientific work. How to develop it |
| 17.00-17.30 | Preparation and submission of scientific publications to journals included in international scientometric databases (Scopus, Web of Science, etc.) |
| 17.30-18.00 | School closing. Summing up. Delivery of certificates |

comparisons, highlighting the main point, presentations, rhetorical questions, examples, explanations, switching attention by the teacher, using techniques of attracting involuntary attention. All speakers were experienced lecturers and prepared for speeches in advance, consulted among themselves and with the organizing committee regarding the content of the speech and its design, communicated with each other as like-minded people on how to do it better and more clearly. Therefore, teamwork was present not only at the stage of forming the content of the program, but also during the school. The performances were from different places in Ukraine and from abroad, it was difficult to unite everyone in time, for everyone to find a convenient time, free from work and classes, the Internet connection did not always work and the performances sometimes changed places, some people were sick with COVID-19 and performed together with one of their colleagues in a pair, because they could not speak for a long time. But the school was held, the program was maintained.

*4. The final stage* – with the aim of identifying the level of satisfaction of needs and solving problems, identifying issues for clarification for the future.

It should be noted that among the 198 participants there were also collective connections, where there were whole groups of masters, assistant professors and postgraduate students in the audience, who connected centrally in their educational institution. Therefore, the 1st ISYSSDS aroused considerable interest among applicants with its subject matter. During the 2 days of work, the listeners were not excluded from work, photographed the presentations, actively asked questions to the speakers, registered on time and returned from the break. This indicates great motivation for learning and correctly chosen topics of speeches. The express survey showed that 98 percent of students were completely satisfied with the school

Table 3: The results of the survey.

| Question | Answer options | The results |
|---|---|---|
| 1. Did your expectations from the school come true? | a) yes;<br>b) partially;<br>c) no. | a) 194 (98%);<br>b) 4 (2%);<br>c) 0 |
| 2. Which report aroused the greatest interest? | *provide an answer* | – methodology of scientific research – 78 (39%);<br>– writing articles and theses – 36 (18%);<br>– writing articles in Scopus and Web of Science journals – 39 (20%);<br>– literature review – 52 (26%) |
| 3. What topics would you like to add to the school's work program in the future (provide an answer)? | *provide an answer* | Publication of scientific articles abroad (such as Scopus, Web of Science) – 17 (6%) |
| 4. What forms of work would you like to see at school? | *provide an answer* | As much practice as possible – 67 (34%) |
| 5. What was useful about this school for your research? | *provide an answer* | – methodological part – 57 (29%);<br>– literature review – 32 (16%);<br>– writing articles –36 (18%) |
| 6. Should such measures be carried out in the future? | a) yes;<br>b) it is difficult to say;<br>c) no. | a) 186 (94 %);<br>b) 12 (6 %);<br>c) 0 |
| 7. Which of the speakers did you like the most? | *provide an answer* | Miroshnichenko V. – 32 (16%), Kalashnyk L. – 42 (21%), Trubavina I. – 39 (20%), Semyonova A. – 36 (18%), Cherednichenko O. – 42 (21%), Volkova N. – 52 (26%), Nedria K. – 48 (24%) |
| 8. What did you not like at school? | *provide an answer* | There was no time for practice |



(table 3).

The results of the interactive express survey also showed that 98% of students are satisfied with the school. The survey was conducted immediately after school closed.

Individual conversations with students and their academic supervisors generally confirmed these statements. The wishes were to make such a school regular, with practical exercises, which confirms our opinion about the expediency of the event, its benefit for scientists, compliance with the needs of degree holders, and their motivation to participate in the event. It should be noted that all the students were constantly present at the school on the 2nd day, asked questions in the chat, and even their supervisors listened in order to learn from their colleagues based on their experience. 98% of fully satisfied listeners means that the miners' needs were met. Even the format of the online school, with a fast-paced progression in theory followed by presentations and speeches, made a great impression on the trainees, although the trainees wanted practice. We note that practice is possible with individual feedback to everyone, which was technically impossible with online training of 198 people. There is a question about the pulsating form of the school – with tasks performed on a regular basis, a permanent seminar for those obtaining a scientific degree, checking of tasks and consultations, which requires the paid participation of speakers and project activities for the school. This is a perspective for further actions in this direction and is a debatable issue. The first school fulfilled its tasks – it united people, motivated them to participate in scientific activities, exchange experiences, provided the necessary knowledge and information for reflection. Moreover, she discovered a team of reserve speakers for the future who would like to share their creations. Interest was aroused by the presentations and theses of the speeches, which all listeners received by mail along with certificates. The recording of the school in YouTube was not taught due to the start of the war, and the promised manual was also not issued, since almost half of the speakers went to fight. But despite this, even the oral part online and communication through mail revealed the unconditional benefit of the event and its relevance to the needs of stake-

holders. Heads of educational institutions expressed their gratitude for the event, were surprised by its massiveness, the fact that people voluntarily kept in touch at the non-formal education event. Those seeking education expressed their admiration for the event and their surprise that science is both interesting and free. I also liked the program – everything is useful and reflects their needs. The speakers were also satisfied – they were listened to very attentively, with great motivation to learn. Winners even took photos of presentation slides and took notes. The scientific supervisors of the adjuncts and graduate students expressed their gratitude for the fact that the topics of the speeches were relevant, the new and classic requirements for dissertations were explained clearly, briefly and clearly, examples of the fulfillment of the requirements were provided, and the theory was connected with practice. All stakeholders appreciated the quality of the speeches, the interesting content of the program and the high level of the speakers' performances. We note once again that the entire project of the school was on a public basis, using the base of NANGU and other educational institutions – co-organizers. A positive feature is that there were 25 DHEIs and HEIs represented at the event, domestic and foreign. There were performances by foreign participants as well as Ukrainian, civil and military. The commonality of problems and topics, interesting and useful to every scientist, determined the success of the event and its high evaluation. Thus, the requirements for a scientific online school were met. The content of the program, which was justified on the basis of the needs of stakeholders, turned out to be necessary.

# 4 DISCUSSION

We conducted the first such school in the security and defense sector. It is interesting to compare its content and results with other schools and the results of their work (Trubavina et al., 2021; Diundyk, 2018; International School of Biology in Poland, 2017; Shevchenko, 2012). In comparison with the work of international scientific schools, the following common and distinctive features can be identified (figure 1).

Therefore, 1st ISYSSDS had the right to exist in this form in comparison with other schools, they are all different depending on the approach, purpose, opportunities and needs of the participants and co-organizers.

# 5 CONCLUSION

Based on the above, we can say that:

1. The international school is a relevant and possible form of informal education of young scientists of institutions of higher military education of the security and defense sector of Ukraine in the conditions of European integration and the transition of military affairs in the country to international standards. We discovered that school education should be built on a complex of theoretical approaches, namely: competence, activity, system, environmental, ethical, theory of blended learning, distance learning, selection of educational content, digital learning, digital pedagogical competencies, problem-oriented learning and theories of adult education (androgogic approach), ideas of Waldorf pedagogy, developmental (according to L. V. Zankov), personal, democratic approaches.

2. The content of the program of such an event of informal education is determined on the basis of identifying and taking into account the needs of all stakeholders of the educational and scientific process, which ensures the motivation to study of young scientists, the democratization of education and its maximum effectiveness. The subject of the school program concerns the methods and conditions of carrying out scientific activity, integrity, takes into account the features of working with information that are common to civilian and military scientists, and not characteristic of the content of a separate military science, contributes to the formation of an individual scientific style of activity in young scientists and encourages independent creating conditions for scientific search. The methods of education in such an event of non-formal education are, taking into account its fast pace, the number of questions of the program and the huge number of participants, which complicates feedback and the implementation of exercises and discussions, are information, examples, exchange of experience, analysis of regulatory documentation, etc. At the same time it is important to exchange the experience of scientific activity between foreign and native scientists, experienced and young scientists, civilian and military scientists, and scientific supervisors.

3. The conditions for the success of schools in the security and defense sector are: its international character in terms of speakers and participants, the combination of civilian and military institutions of higher education, its separate preparation and organization as a complex project. A

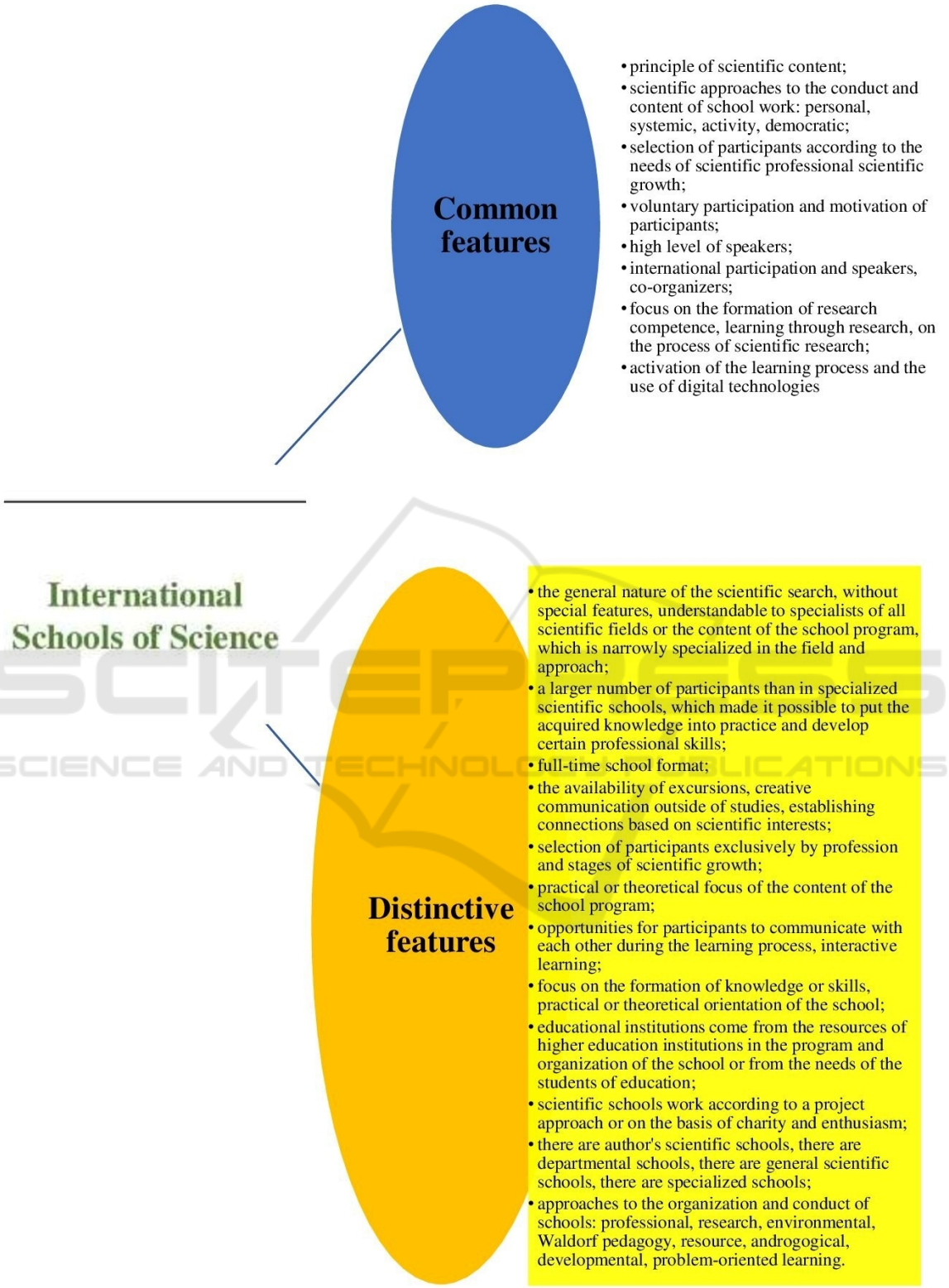


Figure 1: Common and distinctive features of international schools of scientists.

school of this level can be implemented as a charity project on public grounds or as a grant project. But there are many organizational works before, during and after its implementation.

4. The International School of Young Scientists of the Security and Defense Sector is defined by us as a complex form of informal education, a separate large-scale scientific project that requires special organization and training by various institutions of higher education, coordination of work in a single center on the basis of which it is conducted. The school must be planned and have stages of implementation: diagnostics and taking into account the needs of stakeholders in the content, formulating the content of the school program simultaneously with the formation of the organizing committee and speakers who are chosen according to the school's theme, and not according to the capabilities and resources of one educational institution (it should be a motivated team of like-minded people with experience and high own results of scientific activity, with democratic communication and distribution of duties and responsibilities), provision of the technical component of preparation and conduct of the school, its actual conduct and moderation of sessions, analysis of its results and feedback.

   Motivation of speakers and listeners is required, which ensures attention and interest in the program.

5. Questionnaires to identify the needs of stakeholders, content of the school program, effective methods for its implementation, stages and conditions of its organization and implementation were identified as practical achievements of the research.

The prospects for further research are the organization of the II International School of Young Scientists of the Security and Defense Sector in Ukraine, taking into account the needs and capabilities of scientists in the war, clarifying the needs of stakeholders in the results of scientific activity in this difficult time.

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