



# Digital Competences for Improving Security and Defence Education (DIGICODE)

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## EVALUATION REPORTS – INTELLECTUAL OUTPUT 5



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## 1. INTRODUCTION

In the digital era, teachers and students need to acquire a set of digital competencies that will enable them to navigate the ever-changing technological landscape and effectively integrate digital tools and resources in their teaching and learning practices. In fact, digital technology has become an integral part of teaching and learning, and as such, teachers and students need to possess digital competencies.

That is why this work is inserted in the context of the Erasmus+ Key Action 2 Strategic Partnership “Digital Competences for Improving Security and Defence Education – DIGICODE”, addressing education in the Security and Defence context combined with the use of digital education, tools, artifacts, and software. One of the objectives of the project is to favour teachers’ development of the needed digital competences.

Digital competencies are developed in relation with specific disciplines in Security and Defence education, mainly cybersecurity, logistics, mathematics, technical systems. The expertise on these disciplines has been brought by partner institutions, even though a full spectrum of topics is required for the training of military officers: STEM, foreign languages, law studies, etc. In this context, multidisciplinary scenarios have been developed by a joint work of teachers with different backgrounds, both military and civilian teachers.

The aim of the evaluation reports presented was to examine the design of formative exercises for students, work carried out by an international team of teachers participating in a week of staff training. The structure of the document is based on three chapters covering the evaluation reports for activities C1, C2, C3, respectively, followed by the conclusions of the survey conducted in activity C4, and the evaluation of activities in activity C5 and C6.

The aim of this reports was to investigate the design of activities in the specific area of security and defence. The main research question of the reports was the following: how to design and implement training activities that require digital skills from teachers and make inter-university students develop digital skills in the field of Security and Defence? In the context of the DIGICODE project, which aims to help teachers develop digital skills that cascade onto students, an analysis of the needs has been carried out to understand what the advantages and disadvantages of online education are in relation to digital competencies of teachers.

## 2. EVALUATION REPORT ON C1, C2 and C3 LTTA

### 2.1. Overall information about report

The aim of first report is to investigate the design of formative activities for students, a work carried out by an international team of teachers participating to a staff training week. The first subsection identifies the framework of theoretical perspectives that are relevant to the development of digital competence of teachers and students, which were emphasized during C1, C2, C3 LTTA. The second subsection describes the activities that were carried out in the context of the DIGICODE project. It describes the research question and methodology that was asked during the development of this report as well as presents the results of the collaboration between teachers and activities among students. Finally, discussion about the analyzed results and the educational digital context according to four dimensions: pedagogical, human, technological and institutional were conducted.

In the framework of the DIGICODE project, 4 Learning, Teaching and Training Activities (LTTA) took place. The first LTTA was a staff training week in Warsaw at the Military University of Technology: in this event teachers exchanged their didactic practices and shared opinions on the teacher toolkit. The second LTTA was a school in Bucharest at the Military Technical Academy, for 10 selected students, 2 per partners plus two additional students from the home institution. These two LTTA are considered for this research.

In this report the first edition of the staff training and of the school for students are considered to answer the research question. According to the frameworks, the activity of students and teachers will be analysed across 4 different dimensions: (P) Pedagogical, (H) Human, (T) Technological and (I) Institutional. We asked the participating students to submit a questionnaire. The questionnaire was composed of closed-ended and open-ended questions. The analysis has been carried out with a mixed method approach, joining both quantitative and qualitative results. Median values are considered for quantitative scales. Qualitative indicators are collected by open answers to the students' questionnaire and focus groups, which took place at the end of the week, to detect the effectiveness of the staff training and of the school.

## 2.2. Results

The analysis involved 10 students (4 students from Romania, 2 from Bulgaria, 2 from Poland and 2 from Italy) who participated to the staff training week. First, we asked students about “How would you rate your digital competencies in the following areas?” (Q1), comparing their perception before and after the school and “Did you improve your digital competencies during the latest years in relation to the changes the COVID-19 pandemic required in the following areas?” (Q2), just as it was before participating to the school. The rates are expressed over a 5-point scale from “very little” to “very much”. Results are reported in Tables 1 and 2.

Tab. 1. Teachers’ digital competencies as in (Q1) before and after the staff training

Item	Median (before)	IQR (before)	Median (after)	IQR (after)
Approach new software	4	1	4	1
Artificial Intelligence	3	0.75	3	1
Communication and collaboration (e.g. Social Media)	4	0.75	4	1
Digital content creation and editing (texts, images, audios, videos)	4	1.75	4	0
Military applications of digital tools	3	0	4	0
Retrieve, store and manage digital data	3	0.75	4	1
Safety and Cybersecurity	3	0	4	1

Source: Own elaboration based on survey results

Tab. 2. Improvement of digital competencies as in (Q2) in relation to the COVID-19

Item	Median (before)	IQR (before)
Approach new software	3	1
Artificial Intelligence	3	1
Communication and collaboration (e.g. Social Media)	4	1
Digital content creation and editing (texts, images, audios, videos)	3	1
Military applications of digital tools	3	1.5
Retrieve, store and manage digital data	3	0.75
Safety and Cybersecurity	3	1

Source: Own elaboration based on survey results

Results show the confidence of students in their digital competencies varying from average to high. The school helped in improving several rates. This trend is also highlighted by the fact that almost all students have used a digital learning environment (1 student rarely, 5 students usually and 4 students a lot / always) and they consider digital competencies quite important in

fields such as: their own career, defence and security (and related technical systems), logistic support for military operations, cybersecurity, mathematical problem solving. This is confirmed by observing a median 4 for all these items, 4.5 for cybersecurity.

Second, the initial questionnaire proposed items about learning activities. The aim of the question was to understand “How much are you familiar with the following learning methodologies?” (Q3) and, since the methodologies are used in a specific context, we asked students also: “How much do you think these learning methodologies are of help in learning the topics of this international module?” (Q4). Students could evaluate the various items over a 5-point scale, where 1 was “very little” and 5 was “very much”. Results are listed in Table 3.

Tab. 3. Students’ familiarity with learning methodologies as in (Q3) and (Q4)

Item	Median (familiarity)	IQR (familiarity)	Median (helpfulness)	IQR (helpfulness)
Problem solving	4	1	4	1
Problem posing	4	1	4	0
Learning by doing	4	1	5	1
Collaborative learning	3.5	1	4	0
Formative assessment	3	0.75	3	1
Problem based learning	3	1	4	0.75
Flipped classroom	2.5	1.75	4	0.75

Source: Own elaboration based on survey results

From Table 3, we can see that students are averagely or quite familiar with most learning methodologies, especially problem solving/posing and learning by doing which are typical practices in military training. All the methodologies are perceived as helpful (the formative assessment has a 3.7 average) for learning in an international module (and not only in this case presumably). These methodologies can be adopted with different activities and students were asked “Which activities do you think are more effective for learning?” (Q5) and “Which learning activities do you like more” (Q6). Students could evaluate the various items over a 5-point scale, where 1 was “very little” and 5 was “very much”. Results are listed in Table 4.

Tab. 4. Perceived effectiveness and confidence with activities as in (Q5) and (Q6)

Item	Median (effectiveness)	IQR (effectiveness)	Median (liking)	IQR (liking)
Lectures, seminars	3.5	1.75	3	1
Team working	4	0	4.5	1

Item	Median (effectiveness)	IQR (effectiveness)	Median (lik-ing)	IQR (lik-ing)
Discussions and focus groups	4	0	4	0.75
Student presentations	3.5	1	3	1.75
Interactive activities in a digital environment	4	0	4	1

Source: Own elaboration based on survey results

From Table 4, we can infer that students are aware that transmissive lectures are the less effective activities among those listed, but in general students tend to feel confident in delivering any kind of activity.

In the questionnaires there were no specific questions about institutions and organizational policies, but these aspects emerged in the open answers, which are treated below. To discuss the results and the discussions among teachers, creating relations among the various dimensions: (P) Pedagogical, (H) Human, (T) Technological and (I) Institutional.

Let's start analyzing from the technological point of view (T). From discussion among teachers, it emerged that their digital competencies are quite developed since the recent pandemic required them to use many digital tools for education and it emphasized the need for improvement. Some teachers highlighted that they started a change in the way of teaching even before the pandemic, the use of technologies in their daily teaching was quite spread. Future improvements of students and teachers are also connected to the policies of institutions (I), to the sharing of good practices (P) with other teachers and other students, maybe in international modules, through digital media in dedicated staff training and schools (H) and to meet the expectancies of students (H). Among the various digital competencies, the ones that are mostly useful to teachers are related to educational digital contents (in particular Open Educational Resources), to effective communications and cooperation, and the ability to approach new software. This importance of digital competencies in education was asked even after the school, to compare with the previous perception, but no differences were detected, just a strong emphasis on those competencies that were cited at the beginning of the staff training.

Moving to the pedagogies (P), from the results we can see that students are aware and accustomed to any kind of methodology and activity, and they know that practical formative activities are to be preferred. From open answers, it emerges the importance of collaborative learning (H) with students from different countries and institutions (I). Moreover, teacher highlighted that not every digital tool (T) can be used in Security and Defence, thus an appropriate choice must be made and that the training with digital tools is aimed at using them in their future career, not only for educational purposes.

About the human dimension with its interactions (H), it emerged from the questionnaire that collaborative learning between teachers and students of different institutions (I), working on different



scientific fields in the field of Security and Defence plays an important role. In particular, a positive aspect is given by the fact that teachers collaborated in blended mode, remotely and face-to-face. Unfortunately, students lacked an online phase, which would have fostered face-to-face collaboration. The school organization was focused on the event with several commitments and things to be designed and prepared, given the novelty of the experimentation. Considering this, the second school will be designed to boost attendance with online moments, both synchronous and asynchronous, in order to let students to know each other and to prepare for some of the activities. The encouragement of collaboration among students should occur in different modalities (blended mode, remotely and face-to-face), inside specifically designed activities (P) and enhanced by digital and social tools (T). Furthermore, students were able to acquire in turn competencies and teamwork capabilities, but not on crosscutting themes. In the second school, it would be good for teachers to better define the interdisciplinary scenarios, connecting them to both the formative goals and didactic methodologies and technologies.

Last dimension deals with institutional (I) participation: the design of the school was an effective moment of collaboration between different institutions and of internationalization, but since teachers encountered each other for the first time during staff training, it has not been possible to fully harmonize the various disciplines in the activities of the school, even if they are strictly related. This interdisciplinarity will be an important aspect in the future to network among institutions and stakeholders, and to design effective BIPs.

The exploration of these four dimensions can pertain also the detection and classification of strengths and weaknesses, as benchmark for establishing what is adequate, and what on the contrary should be improved in subsequent initiatives. For example, a weakness concerning the pedagogical dimension (P) regarded the fact that, being this school the first one, teachers had to meet and share educational practices, spending less time on the design phase and not developing a completely organic logical thread. Another weakness, this time concerning the human dimension and its interactions (H), is related to have single students in the groups to prevail on the other ones during certain group activities, with an individual overtaking the other members of the group: in the end not all the students developed competencies uniformly. Strengths and weaknesses that were highlighted here and by the previous discussion are reported in Table 5, which shows a selection of these elements for each of the four dimensions.

Tab. 5. Strengths and weaknesses relative to the four dimensions

Dimension	Strengths	Weaknesses
Technological (T)	<ul style="list-style-type: none"> <li>• Awareness and proficiency in using digital tools for education</li> <li>• A variety of tools can be used to show students different possibilities</li> </ul>	<ul style="list-style-type: none"> <li>• Difficulty to choose the most appropriate tools (not all tool are suitable for educational purposes)</li> <li>• Need of more digital competencies</li> </ul>
Pedagogical (P)	<ul style="list-style-type: none"> <li>• Students can learn by means of various methodologies and activities</li> <li>• Students recognize some learning activities as more effective</li> </ul>	<ul style="list-style-type: none"> <li>• It is difficult to design a first edition of a school since most teachers meet for the first time</li> <li>• Lack of interdisciplinarity</li> </ul>
Human (H)	<ul style="list-style-type: none"> <li>• Collaborative learning, transversal with respect to several scientific fields</li> <li>• Promoting internationalization among teachers and students</li> </ul>	<ul style="list-style-type: none"> <li>• Single students can prevail in a group, causing discrepancies and reducing personal learning</li> <li>• Lack of online meeting phase</li> </ul>
Institutional (I)	<ul style="list-style-type: none"> <li>• Collaboration between institutions, in an international setting</li> <li>• International networking and sharing of good practices</li> </ul>	<ul style="list-style-type: none"> <li>• Policies or constraints may not promote the most effective practices</li> <li>• Involve more stakeholders (more students, even not only officers)</li> </ul>

Source: Own elaboration based on survey results

### 3. EVALUATION REPORT ON C4 LTTA

#### 3.1. Overall information about report

The aim of first report is to investigate the design of formative activities for students, a work carried out by an international team of teachers participating to a staff training week. The first subsection identifies the framework of theoretical perspectives that are relevant to the development of digital competence of teachers and students, which were emphasized during C4 LTTA. The second subsection describes the activities that were carried out in the context of the DIGICODE project as well as it includes the result analysis from survey which were conducted during activity.

The fourth LTTA was a staff training week in Warsaw at the Military University of Technology: in this event teachers exchanged their didactic practices and shared opinions on the teacher toolkit as well as prepared common scenarios for classes which were realized during second edition of summer school. The fourth LTTA was a intensive staff training in Schumen at the National Military University, for 11 selected teachers, aprox. 2 per partners.

In this report the second edition of the staff training were considered to answer the research question, how do you assess the level of digital competence you have and how can the training provided contribute to the quality of student training? The questionnaire was composed of closed-ended and open-ended questions. The analysis has been carried out with a mixed method approach, joining both quantitative and qualitative results. Median values are considered for quantitative scales. Qualitative indicators are collected by open answers to the teachers' questionnaire and focus groups, which took place at the end of the week, to detect the effectiveness of the staff training and of the school.

#### 3.2. Results

The analysis included 11 teachers (2 from WAT, 2 from NMU, 4 from MTA and 3 from UNITO) who answered the survey at the beginning and end of the Intensive Staff Training for Teachers. As part of the survey, questions were asked to assess their digital competencies in the areas indicated and to assess their improvement in recent years, to assess the relevance of their digital competencies, as well as their use of digital tools in the past. The rates are expressed over a 5-point scale from "very little" to "very much." Open-ended questions were also asked about the evaluation and suggestions for improving the learning process using digital tools. The

conclusions of the analyses are presented below.

Tab. 6. Rating of digital competencies in the diverse areas

Item	Median (before)	Median (after)
Approach new software	3.8	4.6
Artificial Intelligence	3.1	3.7
Communication and collaboration (e.g. Social Media)	4.1	4.6
Digital content creation and editing (texts, images, audios, videos)	4.3	4.8
Military applications of digital tools	3.6	4.9
Retrieve, store and manage digital data	4.2	4.7
Safety and Cybersecurity	3.7	4.6
Education	4.5	4.9

Source: Own elaboration based on survey results

Teachers rated digital competencies in areas related to Approach new software, Artificial Intelligence, Communication and collaboration (e.g. Social Media), Digital content creation and editing (texts, images, audios, videos), Military applications of digital tools, Retrieve, store and manage digital data, Safety and Cybersecurity and Education. Prior to the training, teachers rated their skills at a high level (3.91), best rating their digital competencies in the field of education. After the training was implemented, teachers gave responses indicating that they had raised their competencies to a very high level (4.60). Teachers also indicated that the use of digital competencies is crucial in their area of education (4.9) and declared that they use digital learning very often (4.5).

The next question asked about the teachers' upgrading of competencies in previous years and the reasons for undertaking personal development. The responses were ranked from very little (1.0) to very much (5.0). Teachers responded that they had often improved their competencies in previous years (most in the area of education, while on average in the area of Artificial Intelligence). The main trigger to that activities was point as to switch to distance learning according to covid-19 pandemic restriction. Some of the teachers pointed that a need to continuous improvement triggered them to improve their skills.

Tab. 7. Improving of digital competences

Item	Median
Approach new software	4.0
Artificial Intelligence	3.2
Communication and collaboration (e.g. Social Media)	4.0
Digital content creation and editing (texts, images, audios, videos)	4.1
Military applications of digital tools	3.6
Retrieve, store and manage digital data	4.1
Safety and Cybersecurity	3.8
Education	4.3

Source: Own elaboration based on survey results

Teachers also unanimously stated that a factor that supports them in the development of digital competence is participation in all kinds of trainings and workshops, such as those planned under the project.

In the next part of the survey, teachers reviewed the most relevant methodologies from their point of view, which can be applied to teaching in their area. They also assessed their knowledge of basic classroom methodologies. All of these questions led to the identification of the need to develop collaborative, interdisciplinary lesson plans, which, according to the survey respondents, are very important (4.0 - 100% answers) during the development of the Summer School program. The question formed the basis for a further approach in the development of curricula for students at subsequent LTTAs. Teachers emphasized that they were most familiar with the following methodologies: problem solving, learning by doing and collaborative learning.

Tab. 8. Familiar with teaching methodologies

Item	Median
Problem solving	4.5
Problem posing	3.6
Learning by doing	4.4
Collaborative learning	4.2
Formative assessment	3.5
Problem based learning	4.0
Flipped classroom	3.1

Source: Own elaboration based on survey results

Tab. 9. Which teaching methodologies are the most helpful

Item	Median
Problem solving	4.7
Problem posing	4.4
Learning by doing	4.8
Collaborative learning	4.8
Formative assessment	4.0
Problem based learning	4.4
Flipped classroom	3.7

Source: Own elaboration based on survey results

Teachers emphasized that they are most familiar with the following methodologies: problem solving, learning by doing and collaborative learning. They also indicated them as the most helpful when teaching with digital tools. The above conclusion made the construction of the Summer School program for students based on the application of selected elements of the indicated methodologies.

They also indicated that the most useful digital competencies when applied to teaching are the knowledge and ability to use digital learning environment, as well as the ability to engage students in mutual collaboration and communication. It is also important to develop digital content that can be applied to the education process.

The next question asked about agreement with individual statements about teamworking with other teachers when teaching based on a shared scenario.

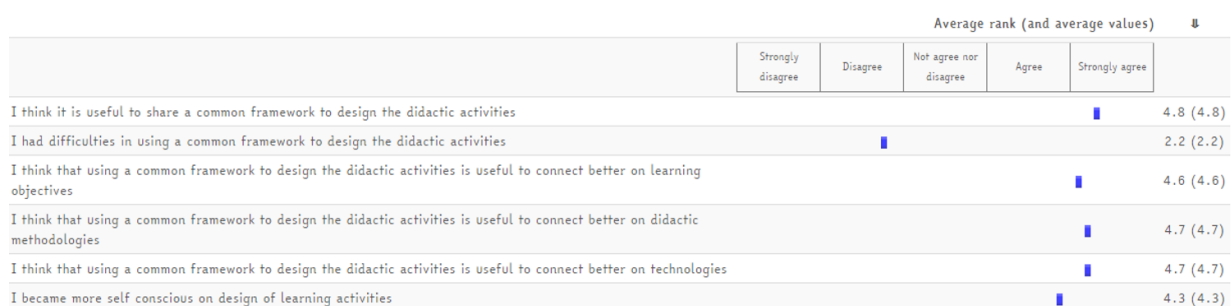


Fig. 1. Agreement with the statement

Source: Own elaboration based on survey results

Teachers strongly disagree that they have difficulties in developing common scenarios for teaching activities. In addition, they agree that such an approach is very useful, supporting a better understanding of learning objectives, the implementation of innovative methodology and

digital technologies in teaching activities.

Also noteworthy is the fact that teachers participating in Intensive Staff training completely identify with the goals of the workshops conducted, indicating that they will encourage other teachers to participate in such events and will disseminate the experience gained during the training as ambassadors of the project.

The survey conducted as part of the C4 LTТА activity showed that this type of workshop is crucial for teachers, as it directly improves their digital competencies. In addition, it enables the exchange of experience. On the basis of the developed report, the need to develop common interdisciplinary lesson plans and the use of a unified methodology for conducting activities during the preparation of the Summer School program and its further implementation in the second edition (under C5 and C6 LTТА) was accepted as correct..

Tab. 10. Improving of digital competences

Item	Median
Approach new software	4.0
Artificial Intelligence	3.2
Communication and collaboration (e.g. Social Media)	4.0
Digital content creation and editing (texts, images, audios, videos)	4.1
Military applications of digital tools	3.6
Retrieve, store and manage digital data	4.1
Safety and Cybersecurity	3.8
Education	4.3

Source: Own elaboration based on survey results

## 4. EVALUATION REPORT ON C5 AND C6 LTTA

### 4.1. Overall information

The aim of first report is to investigate the design of formative activities for students, a work carried out by an international team of teachers participating to a staff training week.

The first subsection identifies the framework of theoretical perspectives that are relevant to the development of digital competence of teachers and students, which were emphasized during C5 and C6 LTTA. The second subsection describes the activities that were carried out in the context of the DIGICODE project. It describes the research question and methodology that was asked during the development of this report as well as presents the results of the collaboration between teachers and activities among students. Finally, discussion about the analyzed results and the educational digital context according to four dimensions: pedagogical, human, technological and institutional were conducted.

In the framework of the DIGICODE project, 6 Learning, Teaching and Training Activities (LTTA) took place. The fifth and sixth LTTA was a school in Turin at the University of Turin, for 28 selected students, 2 per partners plus twenty additional students from the home institution. These two LTTA are considered for this research.

In this report the second edition of the summer school for students/teachers were considered to answer the research question. We asked the participating students and teachers to submit a questionnaire. The questionnaire was composed of closed-ended and open-ended questions. The analysis has been carried out with a mixed method approach, joining both quantitative and qualitative results. Median values are considered for quantitative scales. Qualitative indicators are collected by open answers to the students' questionnaire, teacher's questionnaire and focus groups, which took place at the end of the week, to detect the effectiveness of the school.

### 4.2. Results

Twenty-eight students (2 from MTA, 2 from WAT, 2 from NMU and 22 from UNITO) participated in the student survey. They completed the questionnaire both at the beginning of Summer School and at its conclusion.



Tab. 11. Rating of digital competencies in the diverse areas

Item	Median (before)	Median (after)
Approach new software	3.1	4.0
Artificial Intelligence	2.5	3.7
Communication and collaboration (e.g. Social Media)	3.8	4.0
Digital content creation and editing (texts, images, audios, videos)	3.5	4.0
Military applications of digital tools	2.7	3.6
Retrieve, store and manage digital data	3.0	3.9
Safety and Cybersecurity	2.8	3.9

Source: Own elaboration based on survey results

Students rated their competency in each area quite low at the beginning of summer school. It should be noted that they rated their competencies significantly lower than the assessments conducted by teachers in the C4 LTTA. After the Summer School, students again completed the survey questionnaire, answering how they assessed their level of digital competence after participating in the workshop. Students indicated an increase in their competence as a result of participation in LTTA from a low/medium level (3.06) to a high level (3.87).

Tab. 12. Improving of digital competences

Item	Median
Approach new software	3.2
Artificial Intelligence	2.5
Communication and collaboration (e.g. Social Media)	3.2
Digital content creation and editing (texts, images, audios, videos)	3.2
Military applications of digital tools	2.5
Retrieve, store and manage digital data	2.9
Safety and Cybersecurity	2.8

Source: Own elaboration based on survey results

Students indicated that they rarely, or even very rarely, improved their cy-fr competencies in the past, even at the outbreak of the Covid-19 pandemic, where they only minimally increased their competencies adapting to the global situation. But they showed familiarity with Digital Environment Learnig (19 respondents indicated that they use it often or very often).

At the same time, respondents expressed how important it was to have digital competencies in particular areas, indicating high importance.

Tab. 13. Importance of possessing digital competences

Item	Median (before)	Median (after)
For your career	4.0	4.1
In the defence and security field	4.2	4.2
In Logistic support for military operations	4.1	4.1
In Cybersecurity	4.5	4.5
In Technical systems for defence and security	4.2	4.2
In Mathematical problem solving	3.7	3.9

Source: Own elaboration based on survey results

Students made the above assessment both before and after the summer school. It should be noted that after the workshop, students were confirmed in the statement that possessing digital competence in the areas indicated is very important.

Another question concerned the evaluation of the effectiveness of the various forms of training during the course of the workshop (the evaluation was made both before and after the Summer School). It should be noted that after conducting workshops, students rated their own presentations, team working and interactive activities as more effective (an increase in their importance compared to the start of the Summer School).

Tab. 14. Effectiveness of learning activities

Item	Median (before)	Median (after)
Lectures, seminars	3.4	3.5
Team working	4.1	4.5
Discussions and focus groups	4.2	4.3
Students presentation	3.0	3.8
Interactive activities in a digital environment	3.9	4.1

Source: Own elaboration based on survey results

In addition, they assessed how interesting the above forms of education were (also before and after the workshop). Both before and after the workshop, students indicated that theoretical, giving forms of education were of little interest. There was an increase in interest (to from medium to high) in practical forms of education, involving students in mutual communication, team-work and presentation of developed content. Students identified team working, problem solving and learning by doing as the most important and useful forms of education.

Tab. 15. Effectivnes of learning activities

Item	Median (before)	Median (after)
Lectures, seminars	3.4	3.4
Team working	3.9	4.3
Discussions and focus groups	4.0	4.2
Students presentation	3.0	3.5
Interactive activities in a digital environment	4.0	4.2

Source: Own elaboration based on survey results

The survey also asked students about their familiarity with the different methodologies. At the beginning of the Summer School, students' familiarity with individual metaphologies was rated at a low or medium level. In contrast, at the end of the workshop, stu-dents rated the usefulness of these methodologies at a high level.

Tab. 16. Which teaching methodologies are the most helpful

Item	Familiar Median	Helpful Median	Likeness Median
Problem solving	3.8	4.1	3.9
Problem posing	3.4	4.0	3.7
Learning by doing	3.0	4.4	4.3
Collaborative learning	3.4	4.1	3.7
Formative assessment	3.1	3.4	3.2
Problem based learning	3.4	4.0	3.5
Flipped classroom	2.9	3.7	3.2

Source: Own elaboration based on survey results

Students also responded that the individual elements included in the Pilot Summer School materials and the elements of the individual course modules in the common interdisciplinary course scenario met their expectations to a degree - a lot (4.1).



Fig. 2. Meeting with expectation

Source: Own elaboration based on survey

They also highly rated the various functionalities and capabilities of the e-learning platform

built as part of the project.

	Average rank (and average values)					↓	N/A
	Very low	Low	Average	High	Very high		
Accessibility					■	4.2 (4.2)	0
Collaboration and social learning tools					■	4.1 (4.1)	0
Completion of activities					■	4.2 (4.2)	1
Effective reporting					■	4.1 (4.1)	1
Variety in learning resources					■	4.2 (4.2)	1

Fig. 3. Assessment of functionalities and capabilities of e-learning platform

Source: Own elaboration based on survey results

An overwhelming majority of respondents indicated (93%) that the use of an interdisciplinary, collaborative lesson plan was useful. Mainly for the reasons indicated in Figure 4. This confirms the right and correct development of the Curriculum of Pilot Summer School during the implementation of the project.

Response	Average	Total
To develop more competencies	75%	21
To acquire different point of view	64%	18
To view the connections among different disciplines	57%	16
To acquire a global and comprehensive military perspective	61%	17
Total responses to question	100%	28/28

Fig. 4. Reason for effectiveness of interdisciplinary scenario

Source: Own elaboration based on survey results

The second part of the evaluation report of activities C5 and C6 was devoted to collecting the opinions of teachers on the Summer School conducted for students. Again, the need for digital competence in diversified areas was highly appreciated.

Tab. 17. Rating of digital competencies in the diverse areas

Item	Median
Approach new software	4.4
Artificial Intelligence	4.0
Communication and collaboration (e.g. Social Media)	4.5
Digital content creation and editing (texts, images, audios, videos)	4.5
Military applications of digital tools	4.5
Retrieve, store and manage digital data	4.4
Safety and Cybersecurity	4.5
Education	4.7

Source: Own elaboration based on survey results

In addition, they rated highly or very highly the important importance of having digital

competencies in the security and defense field, especially with regard to: information dissemination (4.4), critical thinking (4.9) and socio-civic application (4.4).

Teachers were also asked again about their agreement with the opinions indicated. Teachers again agreed that common frame work is very useful, important and effective, and stressed the lack of problems in teaching in a common-scene environment.



Fig. 5. Agreement to the statement

Source: Own elaboration based on survey results

Teachers also appreciated the high level of involvement of students during the classes conducted during the Summer School, as well as the fact that digital competencies were raised among students. The above indicates that the activities undertaken within the framework of the project were pro-rated, and the developed program of the Summer School was appropriate.



Fig. 6. To what extent do you rate the following sentences (1=Not at all, 5=Very much)

Source: Own elaboration based on survey results

## 5. CONCLUSION

The reports presented an experience of teacher training and students' school in Security and Defence field across European Military Academies and University. Teachers' and students' digital competencies were found to be high: the pandemic emphasized the need for improvement. There is always room for improvements, which are connected to institutional policies, sharing of good practices with other teachers in international networks, and meeting student expectations, which are changing together with the digitalization of society. This answers to the research question on how to design and implement training activities that require digital skills from teachers and make inter-university students develop digital skills in the field of security and defence: a careful design through collaborative working and sharing of ideas across different disciplines.

Collaborative learning between teachers of different institutions and scientific fields in the Security and defence area is important, and institutional participation is useful in designing effective BIPs. The development of digital competencies is also essential: the most useful digital competencies for teachers are related to educational content, effective communication and cooperation, and the ability to approach new software. Teachers are aware and accustomed to different teaching methodologies and activities, and practical formative activities are preferred. Collaborative learning with students from different countries and institutions must be promoted, and appropriate digital tools must be chosen for Security and Defence. The findings of the paper connected all the different dimensions in education in the digital world, emphasizing the relationships pedagogical, human, technological, and institutional dimensions.

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