# TEACHERS TRAINING AND PROFESSIONAL DEVELOPMENT
# WITHIN THE CRED PROJECT

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**Abstract:** *The "CRED- Relevant Curriculum, open education for all" project was developed to respond to some needs, including: to knowledge and use of the values of the new National Curriculum; to develop of relevant documents for educational policy (methodological guides for the various disciplines and Educational Resources Open (RED); to support the classroom application of the new school programs; to carry out thematic research to support the implementation process of the curriculum based on key competences, with a focus on students from disadvantaged categories; to train of 55,000 primary and secondary education teachers for a methodological approach centered on key skills and adapting learning activities to the specific needs of each student, including those at risk of dropping out, facilitating student-centered teaching-learning, the integrated approach (in the sense of making connections with real life), using alternative methods of formative assessment; to review the curriculum at the school's decision, capitalizing on the needs, resources and local cultural, social, economic context; to review the curriculum documents aimed at the "Second Chance" Program. The work "Teachers training and professional development within the CRED project" presents the results obtained in the framework of a mini-research carried out as a trainer in the program, Digital educational resources:*

*creation, use, evaluation", OME accredited training program no. 3306/22.02.2022.*

**Keywords**: *training courses; national curriculum; open educational resources.*

Title 1: Developing teachers' digital skills

The suspension of courses during the 2020-2021 and 2021-2022 school years in the education system in Romania and in many other countries, as well as the transition to the online learning formula, were determined by the declaration of the Covid 19 Pandemic and the measures imposed by the authorities in this context in order to prevent the spread of the virus.

This period was difficult for everyone, students, teachers, parents, the local community in general. From the perspective of the teachers, we can say that, on the one hand, it stimulated us, developed our motivation for research, information and creation of materials adapted to the activities specific to the online environment, and on the other hand, it forced us to develop our skills, skills and abilities to use new technologies.

"Selection of teaching aids suitable for the didactic activities carried out with a class of

students with certain age and individual peculiarities and in accordance with the educational objectives requires finding the answers to the following questions: "What type of learning and what mechanism of learning do students resort to under the conditions of using a certain means of education?" ", " What is the optimal ratio that should be established between concrete and abstract in the process of perceiving, understanding and assimilating the new", " What is the contribution of schematization and essentialization in the learning process?", " How do signs, symbols and images influence memory processes, fixation, storing and updating/mobilizing information? "Thanks to the exercise of the training function, each category of educational means can be considered a way of transmitting knowledge. Therefore, it is necessary that, in the choice of educational means, their efficiency should be taken into account in the transmission of new information, as well as in the formation of skills, intellectual skills, which will turn into useful tools in the assimilation of new information." (Ionescu, M., Radu., I., 2001)

Certainly, the main objectives of the discoveries in the field of technology were: easing work, considerably increasing the amount of information, exponentially expanding the spread area, eliminating some barriers, developing at the cultural, economic and social level.

Technological development, the use of the Internet, mobile communication services and related services have fostered easy access to information for most people. The main role of introducing computer science in school is not only to allow the access of young people to knowledge / information, but especially to ensure and make available to everyone the development of new learning tools but also to learn new techniques for reorganizing knowledge.

"Multimedia technologies, especially interactive ones, can play a special role in discovering new knowledge and values, in an agreeable form, in accordance with the students' interests. Digital transcoding involves additional, specialized operations - both from a didactic and IT perspective - and is ensured by teams of specialists that must include, at least, the pedagogue, the psychologist, the communication expert, the software developer and, possibly, the designer, because we live in a world where the forms, the appearance manage to enhance or compromise the contents. In other words, the digitization of learning involves a change in an important aspect of the curriculum - that which is available to the student through the textbook. However, it is known that a good curriculum, thought for the long term, is not done in a year or two, but requires several years of analysis, expertise, testing, evaluation, reformation. However, we are aware that, in today's times, reflection and reaction times need to be shortened." (Cucoş., C., 2013)

"With roots in neurocognitive sciences, the concept of "universal design for learning" - UDL, universal design for learning - is slowly gaining ground in education. Aware of the unique nature of each student, instead of imposing an educational path for all students in the class, we should propose diverse learning experiences that suit each one, maximizing the chances of progress. The challenge for teachers is to think of engaging activities that will draw students into the learning process - but it is obvious that, most of the time, one (same) activity does not satisfy the interests and needs of all students in a class, nor it is located in the zone of proximal development of each one. Therefore, we have two directions for optimizing didactic activities, which can be combined in practice by incorporating some suggestions from the theory of universal design for learning: differentiated design, by level groups, by interest groups, by potential groups (and mixed, when it is

possible); designing learning activities that are complex enough for each student to find their own path." (Istrate, O. 2020)

Through computer-assisted instruction, learners communicate interactively with the computer system using a system of programs intended for learning in various domains. The computer offers real possibilities for individualizing instruction. Alois Gherghuț considers the computer and related programs to be „a kind of mediator or pedagogue (...) whose role is to maintain, strengthen motivation and adapt the learning process to the student's school level." (Gherguț., A., 2005)

The DigCompEdu framework aims to capture and describe these digital skills specific to teachers, proposing 22 elementary skills organized in 6 domains.



(Figura 1)
https://eos.ro/wp-content/uploads/2022/10/eos_cadrul_european_pentru_competenta_digitala_a_profesorilor_-digcompedu_fin_002.pdf

"Domain 1 addresses the professional environment in a broad sense, that is, the use of digital technologies by teachers in their professional interactions with colleagues, students, parents and other interested parties, for their own professional development and for the collective good of the organization. Domain 2 addresses the skills needed to

effectively and responsibly use, create and share digital resources for learning. Domain 3 is dedicated to managing and orchestrating the use of digital technologies in teaching and learning. Domain 4 refers to the use of digital strategies to improve assessment. Domain 5 focuses on the potential of digital technologies for learner-centered teaching and learning strategies. Domain 6 details the specific pedagogical skills needed to facilitate learners' acquisition of digital competence. For each competence, a name and a brief description are provided, which serve as a main point of reference.

The DigCompEdu framework synthesizes national and regional efforts to encompass the specific digital skills of educators. It aims to provide a general frame of reference for developers of digital skills models, i.e. Member States, governments

regional, relevant national and regional agencies, public or private educational and professional training organizations. It is aimed at educators at all levels of education, from pre-school to higher education and adult education, including general and vocational education and training, education for those with special needs and non-formal learning contexts. It invites and encourages its adaptation and modification to specific contexts and purposes. The framework is based on the work carried out by the Joint Research Center (JRC) of the European Commission, on behalf of the General Directorate for Education, Youth, Sport and Culture (DG EAC)" https://eos.ro/wp-content/uploads/2022 /10/eos_European_framework_for_professional_digital_competence_-digcompedu_fin_002.pdf .

Title 2: Teacher Training Program: Digital Educational Resources: Achievement, Use, Evaluation

On May 9, 2022, the CRED project launched a new accredited training program entitled: "Digital educational resources: creation, use, evaluation", a 50-hour online course of which 25 are synchronous and 25 are asynchronous. Teachers in pre-university primary and secondary education have the opportunity through this course to perfect their computer skills and abilities, to strengthen their teaching career by accumulating a number of 15 transferable professional credits and to create open educational resources - RED. The course is structured on three modules, namely:

Module 1 - Platforms for creating open educational resources

Module 2 - Pedagogical perspective of RED design and use

Module 3 - Responsible and safe use of RED

I had the pleasure and honor of participating in the CRED-RED project as a national trainer for a number of 5 groups of trainees from Bihor and Bistrita Năsăud counties between October 2022 and March 2023.

The purpose of the training program is to prepare teachers for the design, implementation and evaluation of educational situations that integrate applications and educational resources and digital format. Among the specific objectives of the "Digital educational resources: creation, use, evaluation" training program, I mention the following:

to use digital technologies dedicated to the development of open educational resources

to pedagogically design digital educational resources in order to carry out significant and effective didactic activities, appropriate to the field of the discipline, the group - class and the external conditions of learning

to responsibly use the digital environment for educational activities, in compliance with the legislation, rules and principles of safe use of educational platforms and digital educational resources.

To take the pulse of my learners on digital skills I created a short questionnaire that I sent to them from our first online meeting. It was not a mandatory questionnaire so that out of the total number of 170 trainees who participated in the training program, 92 colleagues answered the questions. Out of the total of 170 trainees initially enrolled in the program, 10 dropped out during the training.

Title 3: Research methodology

The purpose of the research:

Studying the impact of the participation of primary and secondary school teachers in the approved training program entitled: "Digital educational resources: creation, use, evaluation" on the development of digital skills

Research objective:

Determining the level of development of digital skills of primary and

secondary education teachers in Bihor and Bistrita Năsăud counties

Title 4: Research hypothesis:

We assume that teachers' participation in the continuous training program that capitalizes on the paradigms of modern education contributes significantly to the development of their digital skills.

Independent variable:

the continuous training program "Digital educational resources: creation, use, evaluation" that capitalizes on the paradigms of modern education

Dependent variable:

the level of development of the digital skills of teachers participating in the training program

Title 5: Subjects

In order to carry out the research, we asked for the initial questionnaire a number of 92 subjects, and for the final evaluation questionnaire 77 subjects teaching staff from secondary schools, high schools and national colleges from the counties of Bihor and Bistrita Năsăud (57 from Bihor and 35 from Bistrița Năsăud the moderating variables used: form of education, type of institution, gender and environment.

| N o | Form of education | | Environm ent | | Type of institution | | | | Gender | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sp e-cia l | nor mal | urba n | rura l | second ary | schoo l center for inclus ive educa tion | hig h sch ool | natio nal high scho ol | fema le | ma le |
| 1 | 20 | 72 | 77 | 15 | 20 | 20 | 28 | 20 | 79 | 13 |

Table no. 1 Distribution of the research subjects according to the moderating variables

Title 6: Research methodology

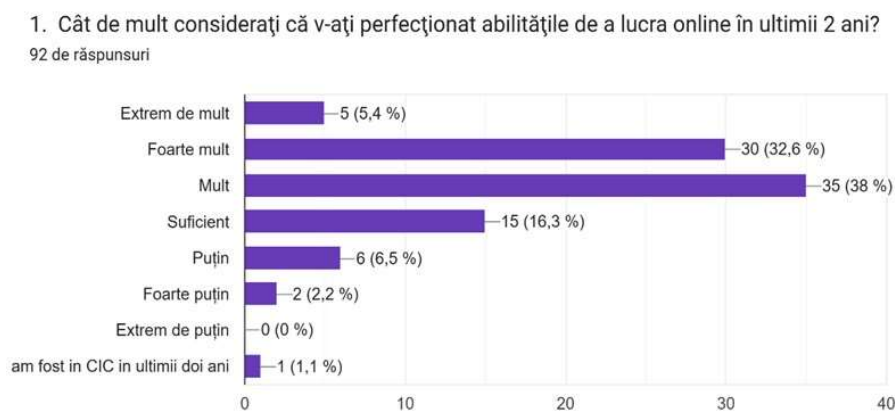The method used to carry out this mini-research was the questionnaire survey.

In the first week of the training program, I asked the trainees to complete a questionnaire, a google docs form containing a number of 12 questions. The questionnaire was designed by me and was not imposed by the project within the training program. Being an optional activity, only 92 participants completed the initial questionnaire. At the last meeting with the participants of the training course, we applied another evaluation questionnaire to which a number of 77 participants answered.

Title 7: Analysis and interpretation of results

From the initial applied questionnaire, I selected a number of 7 questions for the analysis and interpretation of the answers. The results obtained are presented below.

To the first question related to the improvement of online work skills among teachers in the last two years according to the results obtained, 38% consider that they have improved these skills a lot, 32.6% extremely much, 16.3% enough, 6.5% a little, 5.4% extremely much, 2.2% very little and 1.1% answered that they were on parental leave. For the answer option extremely little, we did not get any answer.

Figure 1. Improving the skills of teachers to work online using digital technologies



1. Cât de mult consideraţi că v-aţi perfecţionat abilităţile de a lucra online în ultimii 2 ani?
92 de răspunsuri

| Category | Value |
|---|---|
| Extrem de mult | 5 (5,4 %) |
| Foarte mult | 30 (32,6 %) |
| Mult | 35 (38 %) |
| Suficient | 15 (16,3 %) |
| Puţin | 6 (6,5 %) |
| Foarte puţin | 2 (2,2 %) |
| Extrem de puţin | 0 (0 %) |
| am fost in CIC in ultimii doi ani | 1 (1,1 %) |

To the question regarding the assessment of the level of digital skills possessed, where 1 means "Very little/Not at all", and 5 -„extremely

much", 44.6% selected the answer option 4, which means good, 43.5% marked with 3 i.e. sufficient, 8.7% scored 5 i.e. very good and 3.3% chose 2 as answer option i.e. a little. No answer was obtained for the variant marked with 1, i.e. very little/not at all regarding the level of digital skills possessed.

Figure 2. Assessment of the level of digital skills possessed by teaching staff



2. Apreciați pe o scară de la 1 la 5, unde 1 înseamnă "Foarte puțin/Deloc", iar 5 -"Foarte bine", cum apreciați nivelul competențelor digitale pe care le dețineți?

92 de răspunsuri
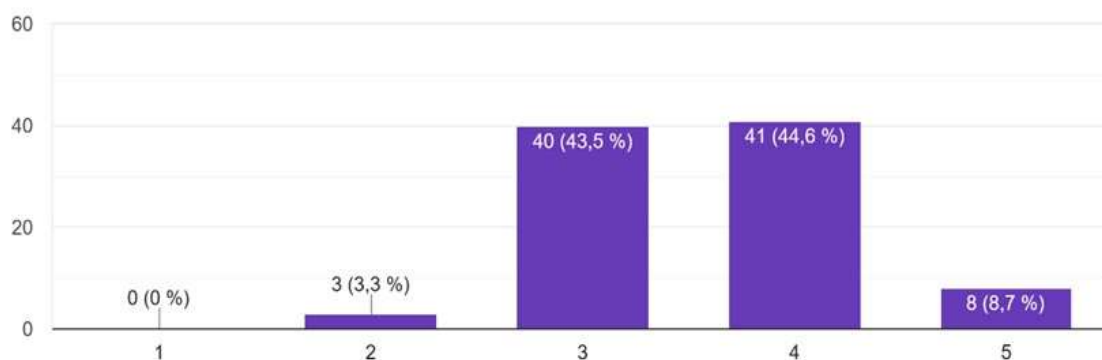
Through the third question, I tried to identify if the students have recently or in the last year participated in webinars, seminars, conferences or training courses that would support them in their online activity. Based on the answers received, we find that a percentage of 65.2% participated, 32.6% did not participate in such forms of training, 1.1% preferred not to answer and 1.1% participated in courses on this homework 2-3 years ago.

Figure 3. Learners' participation in different forms of training designed to support them in their online activity

Figure 4. Improving digital skills following training

3. Aţi participat recent sau în ultimul an la webinarii, seminarii, conferinţe sau cursuri de perfecţionare care să vă sprijine în activitatea online?
92 de răspunsuri
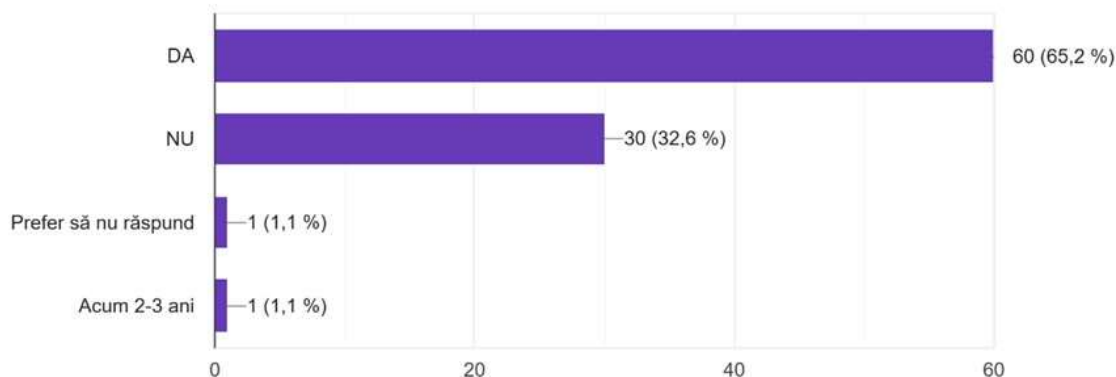


To the next question also related to the improvement of digital skills following the participation of teaching staff in various forms of training, a percentage of 73.9% of respondents appreciate that they have improved their digital skills following participation in training activities, 12% say no and - they improved these skills following the training, 7.6% preferred not to answer, 5.4% did not participate in such training and 1.1% stated that they did not teach during the pandemic.

4. În urma participării la aceste cursuri abilităţile d-voastră în online s-au perfecţionat?
92 de răspunsuri
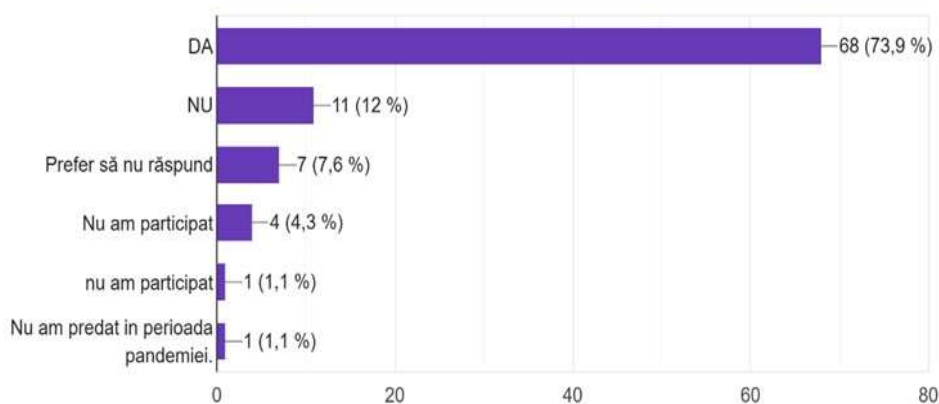


Through question number 5, we tried to identify whether the respondents have created open educational resources. Thus, a percentage of 25% did not create open educational resources, 77.2% of the participants created open educational resources while 1.1% created materials but did not publish them and 1.1% consider the material

87

created by them too simple
Figure 6. Realization of open educational resources



5. Aţi conceput resurse educaţionale deschise?
92 de răspunsuri
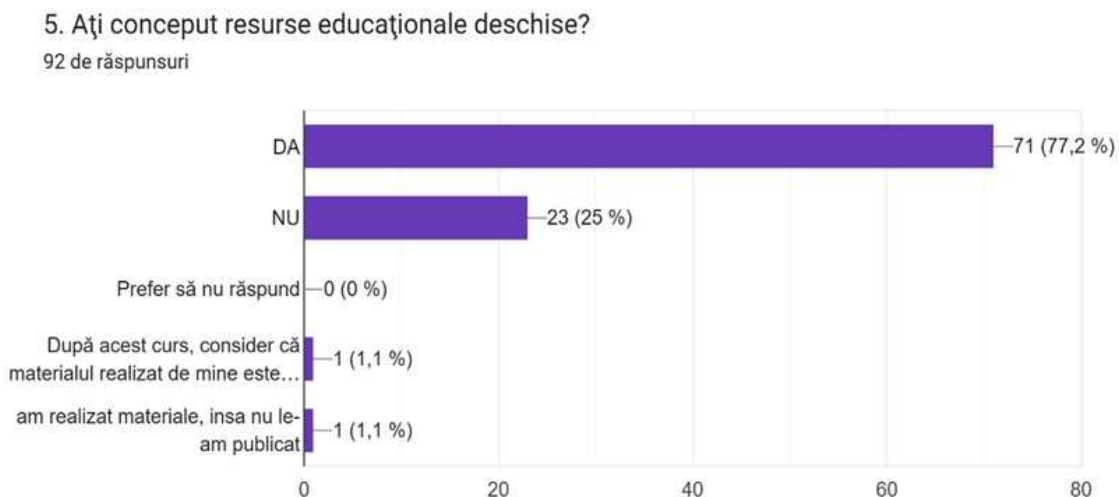
Through question number 6, I tried to identify the type of digital resources made by teachers. A percentage of 54.3% created digital text materials, 40.2% digital materials in graphic/image form, 16.3% digital video materials, 15.2% digital audio materials. For the answer variant an aggregate of different types, several percentages were obtained, namely: 12%, 9.8% and 5.4%. Animations were created by 8.7% of the respondents and word files by 1.1%. For the response option I have not achieved or have not yet achieved, several percentages were also obtained, namely: 3.3%, 2.2%, 1.1% and 1.1%
Figure 7. Type of open educational resources made by teachers.

6. Ce tip de resurse educaționale deschise ați realizat?

92 de răspunsuri
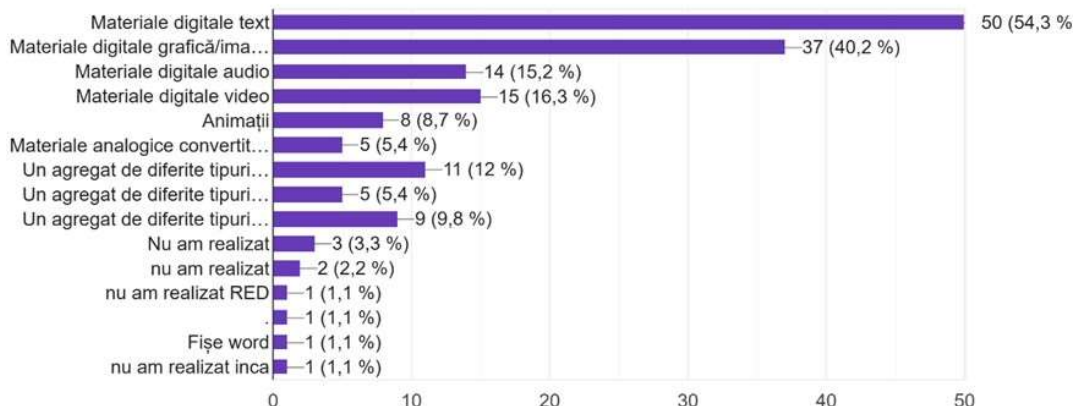


The next question concerns the applications/platforms used by teachers to create digital resources. Based on the answers, we can see that the most used application is world wall with a percentage of 47.8%, followed by google forms 40.2%, 30.4% jam board, 25% kahoot, 19.6% paint 3 D, learningapps 17 .4%, Canva 16.3%, video editors and others 13%, livresq 7.6%, prezi 6.5%, edpuzzle 2.2% and for a percentage of 1.1% we obtained the following answer options: pixlr, word, mentimeter, educaplay, freecam8, google classroom, photoshop, quiz, liveworksheet, microsoft office, as well as the answer options none and I didn't use them.

Figure 7. Applications/platforms used to develop open educational resources

7. Care sunt aplicațiile/platformele preferate de d-voastră pentru elaborarea resurselor educaționale deschise?

92 de răspunsuri
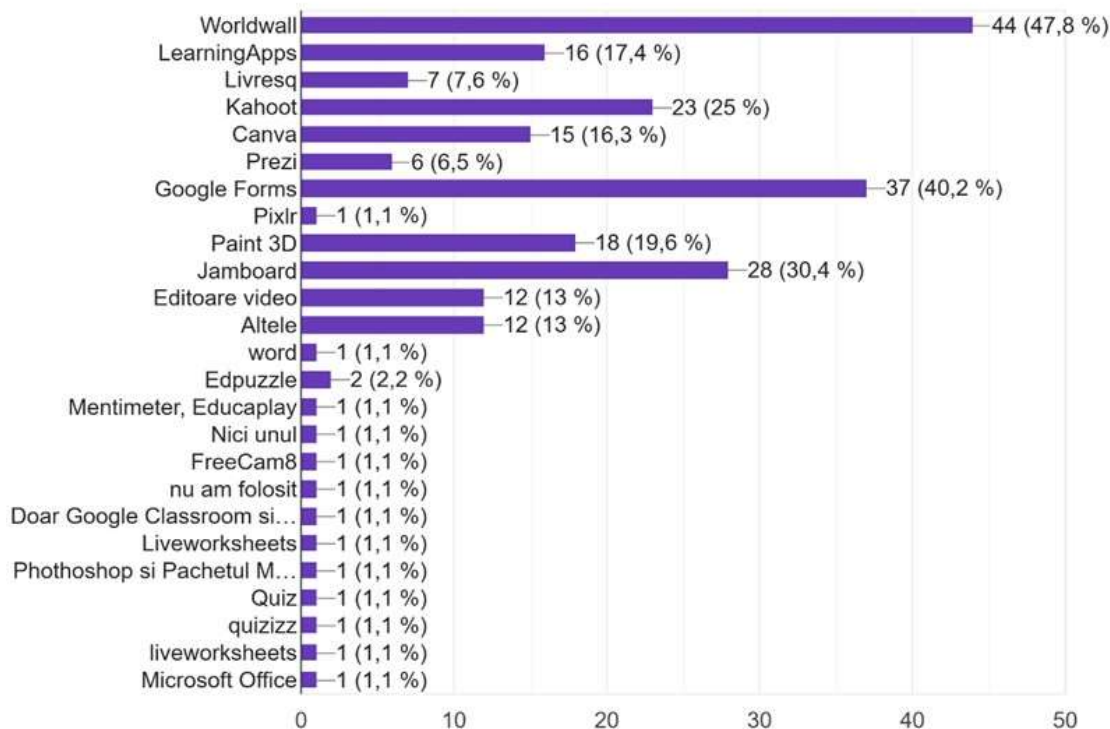


From the applied final evaluation questionnaire of the 10 questions, I selected a number of 5 questions for presentation and the results obtained are presented below.

The first question concerns the assessment of the trainees' experience in the training program. We observe that 72.7% consider that they have a very good experience, 23.4% a good experience and 3.9% consider that they have a satisfactory experience in the field.

Figure 8. Respondents' personal assessment of the training program experience

1. În general, cum ați aprecia experiența dvs. în acest parcurs de formare?          (1 = nu foarte bună - 5= foarte bună)
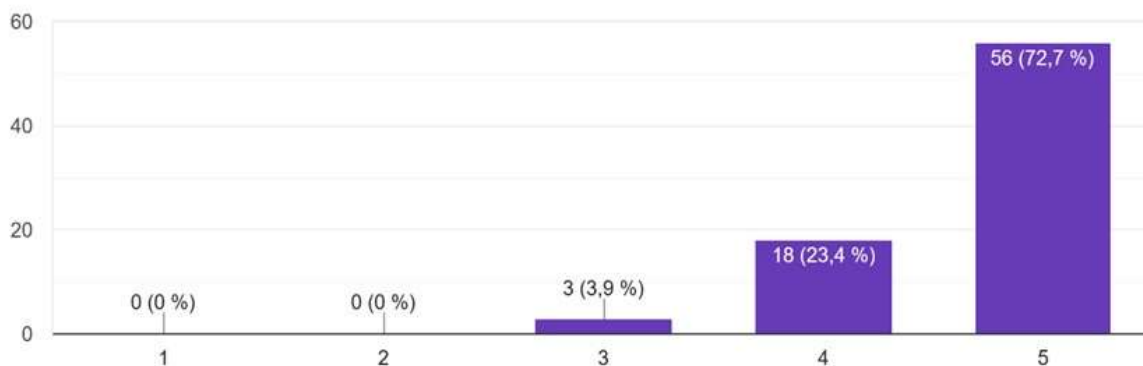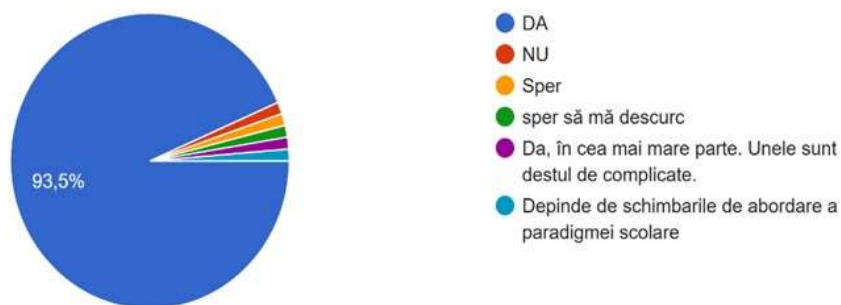
77 de răspunsuri



Figura 9. Aplicarea cunoștințelor și abilităților dobândite în cadrul cursului

3. Considerați că sunteți capabil(ă) să aplicați cunoștințele și abilitățile dobândite în cadrul acestui curs?

77 de răspunsuri



- DA
- NU
- Sper
- sper să mă descurc
- Da, în cea mai mare parte. Unele sunt destul de complicate.
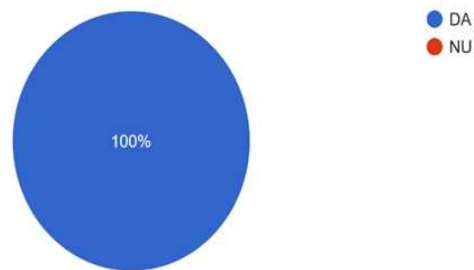- Depinde de schimbarile de abordare a paradigmei scolare

Question number 5 asked the respondents to decide on the usefulness of the course. 100% of all respondents found the course useful.

Figure 10. Usefulness of the course

5. Considerați că ceea ce ați învățat în acest curs v-a fost util?
77 de răspunsuri

● DA
● NU

100%

Ask how often they will apply the knowledge and skills acquired during the course in the classroom 49.4% of the participants say they will use them often, 27.3% will use them very often and 23.4% will use them normally.

Figure 11. Application of knowledge and skills acquired in the classroom training course

6. Cât de frecvent credeți că veți APLICA cunoștințele și abilitățile dobândite la acest curs în cadrul orelor dv?
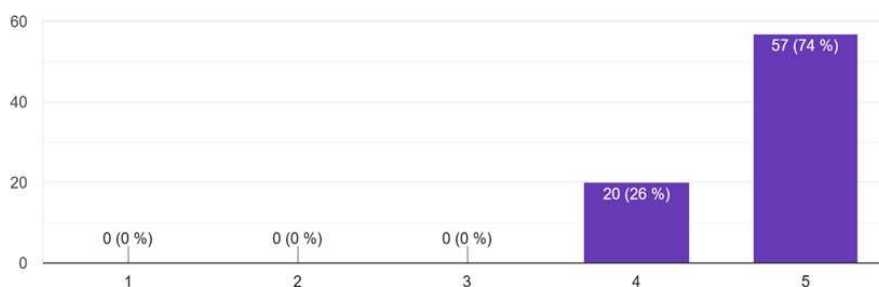77 de răspunsuri
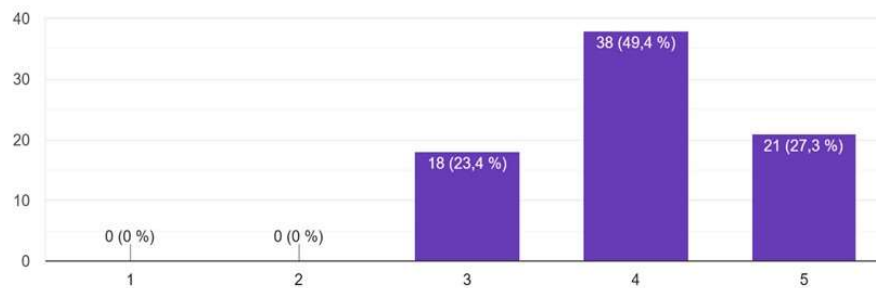
Learners were asked to say how they felt about the course and 74% of participants said they felt very good while 26% felt good.

Figure 12. Appreciation of how the participants felt at the training course

7. În general cum v-ați simțit la acest curs? (1 nu foarte bine, 5 foarte bine)
77 de răspunsuri



## Title 7. Conclusions

After analyzing the data obtained on the basis of the applied questionnaires, we can conclude the following:

teachers participating in the training course entitled "Digital educational resources: creation, use, evaluation" a significant percentage of participants believe that they have perfected their skills in this field. If at the beginning of the training course almost half of the participants assessed the level of their own digital skills as sufficient

In the last period of time, more than half of the respondents have participated in training courses that address digital technologies, which reflects the desire to improve teaching staff in this field

A high percentage of teachers (79.3%) believe that they have improved their digital competences and skills as a result of participating in training courses aimed at digital technologies. Drawing a parallel with question no. 1 from the final evaluation questionnaire, we notice that 72.7% appreciate that they have a very good experience and 23.4% a good experience in the field of digital technologies

A fairly high percentage of teachers have made open educational resources following participation in training courses

The most representative digital materials created by the respondents are: digital materials text and digital materials in graphic/image form.

The most used application through which teachers have created digital educational resources is according to the answers obtained the world wall application.

According to the final evaluation questionnaire, 93.5% of the respondents consider themselves able to apply the knowledge acquired during the training course in the classroom.

All those who answered the questionnaire find the training program useful.

Almost half of respondents say they will Ask how often they say they will use what they learned in the training course in the classroom.

A considerable percentage of teachers (74%) stated that they felt very good at the training course "Digital educational resources: creation, use, evaluation".

I believe that the hypothesis of the research, namely the participation of teaching staff in the continuous training program that capitalizes on the paradigms of modern education, contributes significantly to the development of their digital skills. It is confirmed. The teachers are eager for continuous improvement and even if it was not an easy training course, the satisfaction is that they managed to complete it, but especially the fact that they acquired new skills and abilities in the realm of digital technology.

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