Competence development of STE(A)M educators through online tools and communities

STEAMonEDU – 612911-EPP-1-2019-1-EL-EPPKA3-PI-FORWARD

D20: Project Dissemination Events

Abstract: During 2021, STEAMonEdu partners have organised and delivered local/regional/national events where to promote the project results and bring forward the discussion on STE(A)M related topics with relevant stakeholders.

Authors: ALL DIGITAL, ALL PARTNERS

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1 INTRODUCTION

The STEAMonEdu project has been promoted throughout the project by the consortium via online events. During the project life, stakeholders have been engaged at any stage in understanding, evaluating, and discussing projects' outputs and tools, aims and results establishing a constant conversation on STE(A)M related topics. All the events and communication and dissemination activities have been listed in the Communication and Dissemination report and they are also visible on STEAMonEdu communication channels.

During 2021, project partners have organised specific events where to share project results and bring forward the discussion on the next stages related to the tools and outputs developed and the STE(A)M education field in general.

Further down, there will be described the event ALL DIGITAL delivered within its ALL DIGITAL WEEK and the local events partners have organised at local/regional/national level on STE(A)M related topics where the STEAMonEdu results have been promoted with relevant stakeholders.

1.1 Summary of the project

The project aims to increase the adoption and impact of STE(A)M education by investing in the community of stakeholders and the professional development of educators.

The approach of the project is to nominate educators as the pillars of implementation of STE(A)M education policies and support their professional development either by blended training or by their participation in a community of practice. The training programme and the exchange of experience, collaboration and creative work of the community are supported by an online peer learning and crowdsourcing platform.

As a result of research conducted by the consortium, the STE(A)M education framework, Educator's profile and Self-Assessment STEAM have been developed, including competences, policies, methodologies, learning objects, etc.

These findings have the core elements of the design of the training curriculum for STE(A)M educators, addressing the training programme: the MOOC "STE(A)M education for educators: Design, orchestration and implementation of STE(A)M education" and the blended training. The MOOC is available to everyone interested in the topic, and more than 500 people have already enrolled. Also, 50 MOOC graduates have been selected for the blended training to focus their attention on the production of learning activities templates, STE(A)M education projects and policies to strengthen their competences in adopting and further develop and promote STE(A)M education at both local and national level.

The project has a bottom-up participatory approach when delivering:

- The **online community** of educators, collecting good practices and STE(A)M education policies.
- The **STE(A)M education framework**, including the body of knowledge, template curricula and learning activities, with a focus on diversity.

- The **STE(A)M competence framework**, detailing the competences needed to design and implement STE(A)M education activities (STEAMComp will specialize DigCompEdu with STE(A)M-specific competences).

- The **STE(A)M educator profile**, designed on the principles of ESCO (European multilingual classification of Skills, Competences, Qualifications and Occupations).

- The training programme, targeted to STE(A)M educators and delivered online on a MOOC (with OERs contents) and blended training.

- The guide of STE(A)M educational **practices**

- The guide on STE(A)M education **policies**

- The STE(A)M **policy influence toolkit**

- The Guide for **STE(A)M education policy makers** (Policy recommendations)

- The STE(A)M readiness **self-assessment online tool** for educational organisations that implement STE(A)M education policies, that will implement or expand SELFIE.

1.2 STEAMonEdu Partnership

1. Computer Technology Institute and Press "Diophantus" (CTI), Greece (Coordinator)
2. ALL DIGITAL, Belgium
3. Stati Generali dell'Innovazione (SGI), Italy
4. Helliwood/21CCC, Germany
5. EOS Foundation, Romania
6. Colectic, Spain
7. Regional Directorate of Primary and Secondary Education of Western Greece/Ministry of Education Lifelong Learning and Religious Affairs, Greece.

## 1.3 Local events results and impact in numbers

- 7 events in 4 countries in November and December 2021

- 1100+ participants in presence and online

- 400+ streamed visualisation on YouTube

2 ONLINE EVENT WITHIN ALL DIGITAL WEEK

On 26 March 2021, from 2 pm to 4 pm, **153 participants** joined our STEAMonEdu webinar "**Competence Needs and Professional Development of STE(A)M Educators**", organised by the Consortium as part of the All Digital Week 2021 campaign.

2.1 The format, programme and participants

The event participants were welcomed by CEO of ALL DIGITAL **Peter Palvolgyi**, who introduced the ALL DIGITAL network activities and the campaign.
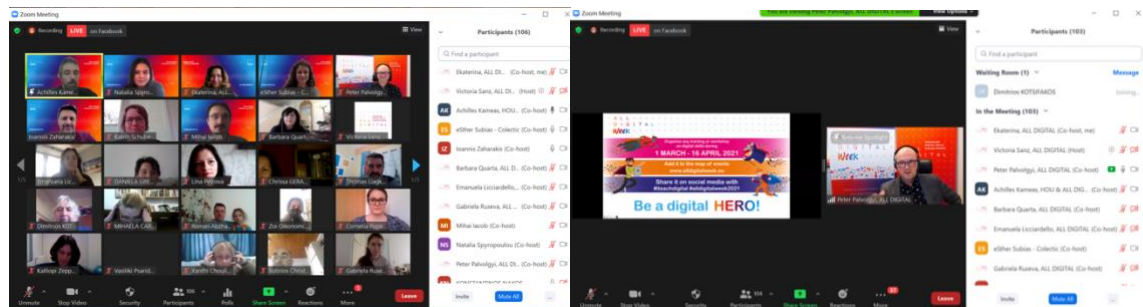
Figures 1 and 2. Screenshots from the programme and webpage of the event.

At the event, we presented the key activities, findings, and outputs of our STEAMonEdu project. **Prof Achilles Kameas** from the project coordinating organisation CTI – DAISSy Research Group gave the overview of the project and moderated the event.

The event highlighted the three main aspects of the project:

- **Ecosystem.** The **STE(A)M competence framework**, which was presented by **Natalya Spyropolou** of CTI, details the competences necessary for implementing STE(A)M education leading to the the STE(A)M educator profile and supporting a STE(A)M-readiness self-assessment tool for educators and organizations.

- **Mihai Iacob** from EOS Romania Foundation talked about the **STE(A)M education framework** that describes the related methodologies, body of knowledge, Open Educational Resources (OERs), and practices.

- **Professional development of teachers and educators**: The project will deliver a training course, which includes a MOOC that is based on the STE(A)M competence framework, supplemented by a blended course that will result in the collaborative development of STE(A)M learning activity templates and projects. **Ioannis Zaharakis** of CTI introduced participants to the STEAMonEdu training offer consisting of the MOOC and the blended learning course, with detailed description of specific areas covered in each week of the MOOC. *If you are interested in joining the MOOC, follow our website https://steamonedu and Facebook and Twitter @steamonedu*

- **Community**: Teachers and educators are given a central role as members of a community that is supported by an online platform in collecting best practices, designing educational scenarios, discussing the necessary competences and sharing experience. **Esther Subias** of

Colectic presented STEAMonEdu platform and community, outlining the benefits, and invited all to join it.

Speakers' presentations and the webinar recording (the timings refer to the video)

00:00:28 Welcome. Peter Palvolgyi, CEO of ALL DIGITAL. *Presentation*
00:06:35 Key results of the STEAMonEdu project. Prof Achilles Kameas, CTI. *Presentation*
00:20:30 STE(A)M Educator Competence Framework. Natalia Spyropoulou, CTI. *Presentation*
00:31:40 STE(A)M Education Framework. Mihai Iacob, EOS Romania Foundation. *Presentation*
00:44:55 STEAMonEdu Training Offer. Ioannis Zaharakis, CTI. *Presentation*
01:02:00 STEAMonEdu online platform and community. Esther Subias, Colectic. *Presentation*
01:12:00 Final Remarks. How to get involved

Participants are international stakeholders within the ALL DIGITAL audience and the ALL DIGITAL Week audiences, such as educators, policymakers, managers and staff of learning centres, public libraries and people interested in digital topics especially in combination with education.

2.2 Communication and Dissemination activities to launch and promote the event

The communication and dissemination of the event was within the ALL DIGITAL Week 2021 strategy and activities. The ALL DIGITAL Week was organised in partnership with: Europeana, Lifelong Learning Platform, Public Libraries 2030, CEPIS that have supported in promoting and disseminating the campaign through their media channels.

Themes of ALL DIGITAL Week 2021:

- Basic Digital Skills and Media Literacy
- Coding, STE(A)M, and AI
- Advanced Digital Skills and Employability
- Digital Cultural Heritage

Within the ALL DIGITAL Week, learning centres can run an event and link it within the ALL DIGITAL Week flag and map on the dedicated website. Overall, 20 countries took part in 171 cities (also outside Europe) with 440 events held by 140 partners engaging a total of 108,000 participants.

Within this scenario the STEAMonEdu event took place.

3   LOCAL EVENT IN GERMANY

In the strategy to roll out the dissemination event Helliwood decided to provide different events to reach different levels of stakeholders and educators in order to reach more people within the very challenging pandemic 4th wave in Germany. Finally with a two step-strategy we could achieve in both events at least 20 people participating directly in our online-sessions.

In the first two multiplier events Helliwood focused on providing the STE(A)MonEdu competence framework in combination of promoting the STE(A)M educational approach so that participants had the opportunity to reflect on their own competences. The illustration of their competences created a discussion of the impact of the material and supported the empowerment of STE(A)M educators.

To reach 30 participants who should be addressed by the dissemination events Helliwood decided to implement information about the STEAMonEdu outcomes also within an internal school qualification day at Rudolf-Virchow-Oberschule on 13th of December. So, the local level was met, and schoolteachers were involved directly to reflect about their competences and their STE(A)M approach regarding team skills and collaboration as well as getting to know STE(A)M activities.
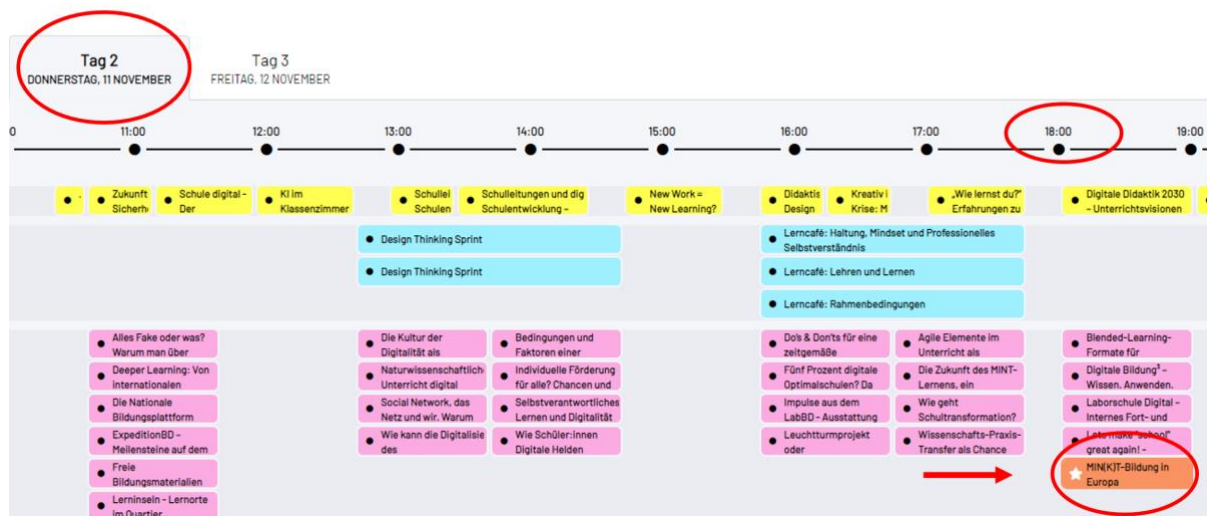
3.1   National event – MIN(K)T Bildung in Europa, 11.11.2021
The format, programme and participants

Session at the annual national event "Konferenz Forum Digitalisierung 2021" with more than 1.400 registered participants within the whole event. The session was listed within the three days programme. The embedment allowed to have many conversation and networking parts with national STEM stakeholders and those who are active in promoting digital transformation for the German school system.

Programme of the dissemination event which last one hour:

1. Welcome and interaction with questions like: In which field are you working? From which federal state you come?
2. Definition of STE(A)M education: Why should we add the A to STEM?
3. Purpose of STE(A)M education
4. Interaction about competences of STE(A)M educator within the participants
5. Provision of STEAMonEdu competence framework
6. Discussion about competence of STE(A)M educators

Figures 3 and 4. Screenshots from the programme and webpage of the event.

3.2   Results and impact

The event focussed on the competence development of STE(A)M educators apparently the most valued outcome of the project for practitioners in Germany. So, participants were firstly connected to real STE(A)M practices from the STEAMonEdu collection at the [platform](#).

Secondly, they were asked to reflect about competence development of STE(A)M educators. Firstly, they were informed about the tools the STEAMonEdu project was delivering within the project runtime.
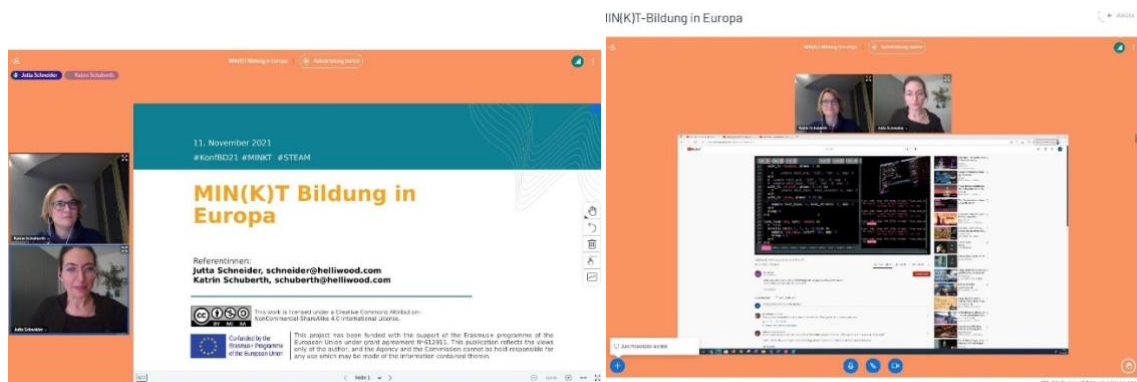
Interactive board with suggestions for competences in order to raise awareness for the complexity of skills an STE(A)M educator has to deal with. It further served to determine the clarification that those networkers should build or follow a community which support the enrolment of STE(A)M activities.
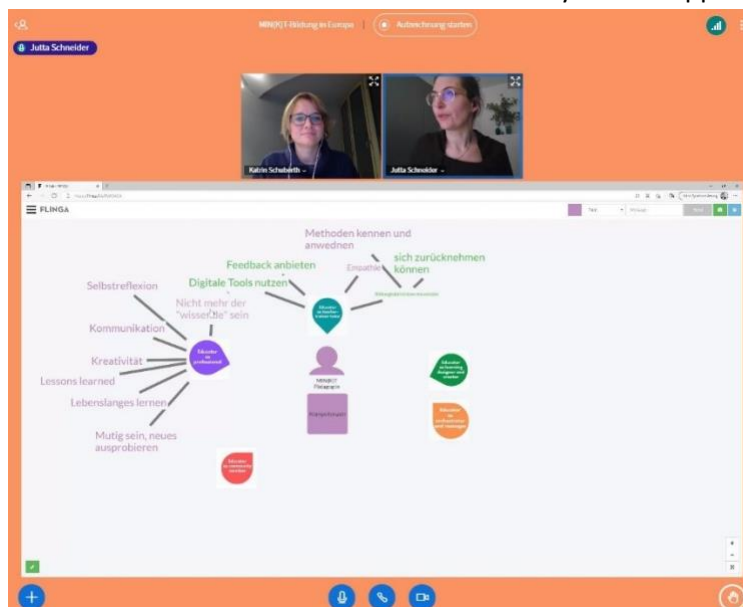
Figures 5-7 Screenshot from the live event

3.3 Communication and Dissemination activities to launch and promote the event

- Cooperation activities with Forum Bildung Digitalisierung in advance of the event in order to get invited for contributing starting in April 2021
- News at the STEAMonEdu-website: https://steamonedu.eu/news/steam-education-in-europe-register-now-for-the-german-final-event/
- Invitation via mail of more than 250 STEM networks to the session
- Several tweets and posts to announce the session three weeks before the event took place:
  19.10.: https://twitter.com/helliwood/status/1450375095801815041
  02.11.: https://twitter.com/helliwood/status/1455462786138525696
  11.11.: https://twitter.com/helliwood/status/1458768708940271617

3.4 Regional event – 4. Zukunftskonferenz MIN(K)T-Qualifizierung von Pädagog:innen, 25.11.2021 and qualification day at Rudof-Virchow-Oberschule, 13.12.2021

Within a regional event Helliwood was able to localise the STE(A)MonEdu approach and involve at least regional networkers and educators from Berlin. It was integrated in a regional programme to certify participant's attendance to the event by local authorities. The 4th Zukunftskonferenz MIN(K)T-Qualifizierung von Pädagog:innen is a yearly held conference within the school network of Berlin teachers and organised by two departments of fjs e.V. – Helliwood media & education and bits21.

It further was embedded in a national action week #MINTAktionswoche which run from 22th to 26th of November initiated from the recently founded national MINT-Vernetzungsstelle.

2.5 The format, programme and participants

The online event was held 2,5 hours with about 15 participants. Compared to the first event Helliwood had the opportunity to focus on practical STE(A)M activities which are relevant to create understanding and the involvement of participants. Thus, participants could build a link to the STE(A)MonEdu material and its purposes.

|	
15.00 – 16.00 Uhr	Vorstellung MINKT-Aktivitäten aus der Praxis von Helliwood (Turtle Coder, Szenarien mit Miniaturrobotern, Smart home)
16.00 – 16.10 Uhr	Input Definition MIN(K)T-Bildung und das K darin
16.10 – 16.45 Uhr	Welche Kompetenzen müssen MIN(K)T Pädagog:innen entwickeln? Europäischer MIN(K)T-Kompetenzrahmen für Pädagog:innen
16.45 – 17.00 Uhr	Interview mit Dr. Renger zur Netzwerkaktivitäten und Erfahrungen
17.00 – 17.30 Uhr	Diskussion und Fragen

Further Katrin Schuberth from Helliwood interviewed an active STEM expert – Dr. Anke Renger – who represents the junior2stein initiative and was ready to talk about her experience as well as she named the demands for the policy level within Berlin region.

3.6 Results and impact

Within the very interactive part at the beginning were participants get to know current STE(A)M activities and learned about very easy to handle learning activities like:

- TurtleCoder activity
- Miniatur roboter activities
- Topics which can be combined with Calliope-activities

To provide the online event as interactive as possible participants were asked in parallel to the first dissemination event to reflect about the competences that STE(A)M educators should have or bring along in order to implement such STE(A)M learning acitivies. The event provided the information about STEAMonEdu competence framework and highlighted the STEAMonEdu community as well as the follow up of the MOOC.
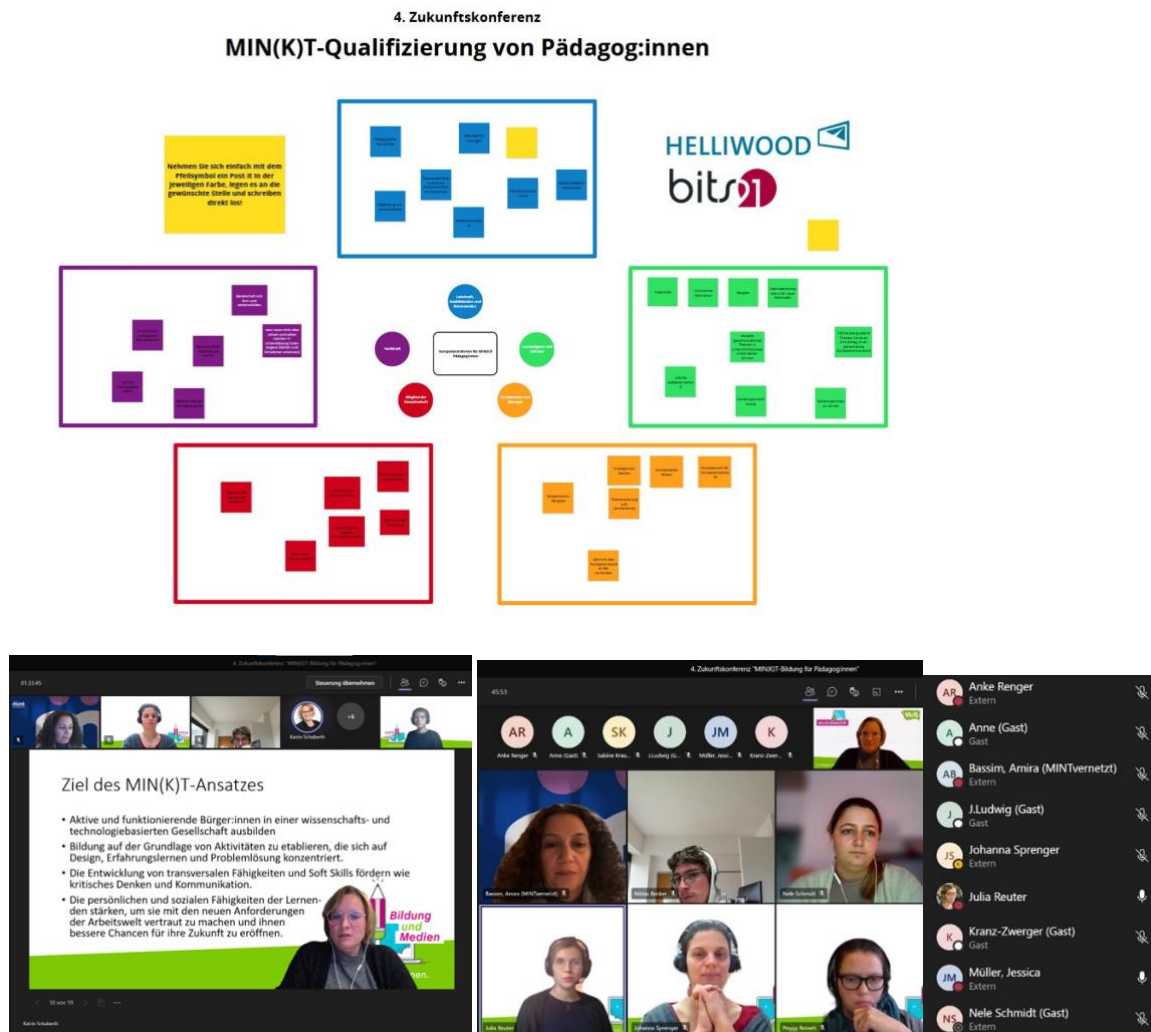
Figures 8-10. Screenshots from the event.

Further impact was provided from the MINT-Vernetzungsstelle which highlighted future cooperation activities and demonstrated interest for being involved in further steps regarding the STE(A)M community.

The regional qualification initiative was further interested in providing the information about the upcoming MOOC in spring 2022.

3.7 Communication and Dissemination activities
- Cooperation with the initiators for MINTAktionswoche and announcement on their website: https://mint-vernetzt.de/event/innovation-inspiration-und-impulse-fuer-die-mint-bildung

- Cooperation with the local authorities and announcement on the website of Regionaler Fortbildungsverbund: https://www.fortbildung-regional.de/suchen/index.php?pageID=a
- E-Mailing to more than 300 teachers and educators from the Helliwood and Bits21 network
- Website announcement for registration: https://www.bildungundmedien.de/Einblicke_in_unsere_Arbeit/379_4_Zukunftskonferenz.htm
- Social Media announcement, e.g. Twitter (parallely on Facebook):
  16.11.: https://twitter.com/helliwood/status/1460525812722159617
  19.11.: https://twitter.com/helliwood/status/1461590564483260421
  23.11.: https://twitter.com/helliwood/status/1463085904495624193

3.8   Survey to the Audience and the perception of the event

Interactive part for the beginning of the workshop:

About the event:
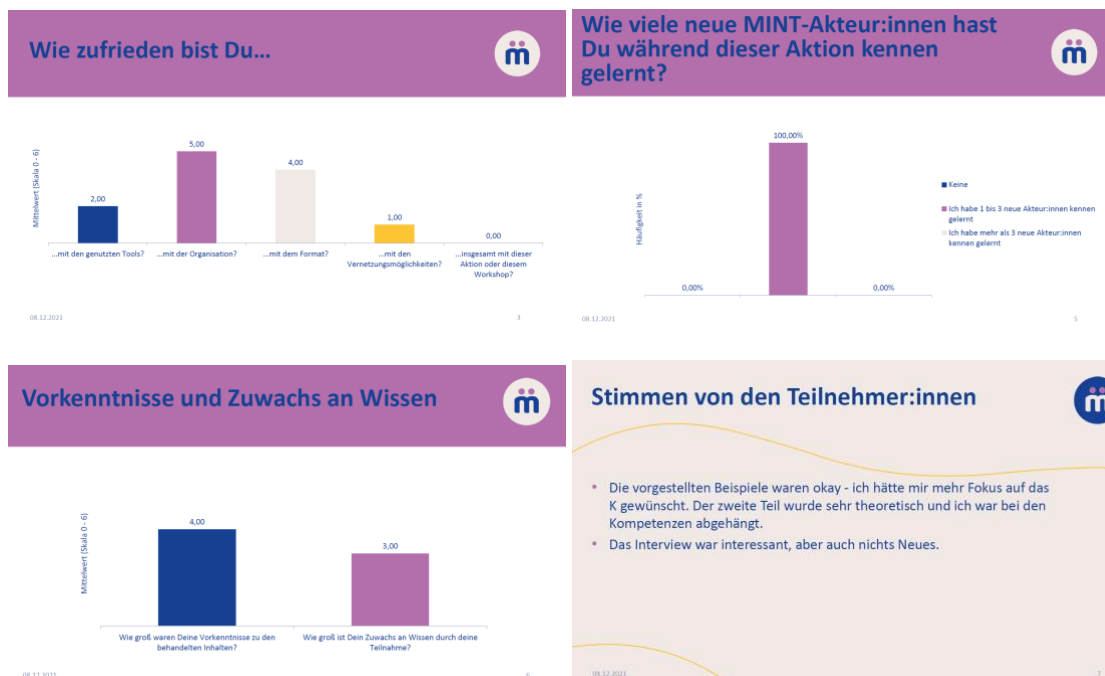
Figures 11-17. Survey results.

Local dissemination event for teachers from 13th of December:

Figure 18. Screenshot from the event held on the 13th December.

Survey from local event:

5. Beurteilen Sie folgende Aussagen:
Weitere Details

■ trifft nicht zu   ■ trifft teilweise zu   ■ trifft zu   ■ trifft sehr zu

Ich fühle mich über das Thema des Angebots gut informiert.

Ich kann die Inputs und Inhalte des Angebotes in meinem beruflichen Alltag anwenden.

Ich habe neue und sinnvolle Anwendungen und Tools kennengelernt.

Das Angebot hat meine inhaltlich meine Erwartungen erfüllt.

100%   0%   100%
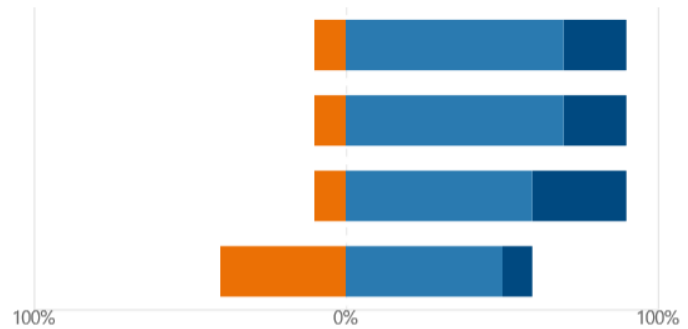
6. Beurteilen Sie folgende Aussagen:
Weitere Details

■ trifft nicht zu   ■ trifft teilweise zu   ■ trifft zu   ■ trifft sehr zu

Ich konnte den Aufgaben gut folgen und wusste was zu tun ist.

Ich konnte mich gut in die Diskussionen einbringen.

Ich konnte mich gut in die Gruppenarbeit einbringen.

Ich hatte genug Gelegenheiten, um meine Fragen zu stellen.

Der Ablauf des Angebots gefiel mir gut.

100%   0%   100%
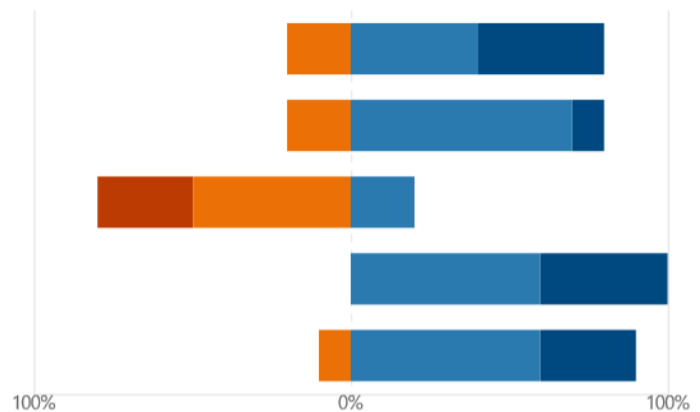
Figure 19-21. Survey results of the 13th December event.

4   LOCAL EVENT IN GREECE

CTI in collaboration with RDEWG organised the final national event of the STEAMonEdu project, on 24 November 2021, to present the achievements of the project. The event took place in CTI premises; it was a hybrid event with both physical and digital presence. All the necessary precautions against Covid-19 were secured.

The event was addressed to teachers and trainers, who are interested in practicing STEM/STEAM education, as well as education and training organizations, researchers in educational methods and techniques, educational authorities and policy makers and other stakeholders (e.g. career consultants).

The participation was free and certificates of attendance awarded to those who registered and attend.

4.1   The format, programme and participants

Εθνική εκδήλωση με θέμα «Εκπαίδευση STEM/STEAM education: δεξιότητες εκπαιδευτικών και ευκαιρίες επαγγελματικής ανάπτυξης μέσα από τα αποτελέσματα του έργου STEAMonEdu»

24 Νοεμβρίου 2021, 17:00-19:00
Αμφιθέατρο Ινστιτούτου Τεχνολογίας Πληροφορικής και Εκδόσεων «Διόφαντος»
**Οδός Ν. Καζαντζάκη, Πανεπιστημιούπολη Πατρών**

17:00 - 17:05   Καλωσόρισμα - επισκόπηση έργου (Α. Καμέας, Καθηγητής ΕΑΠ, Επιστ. Υπεύθυνος έργου)

17:05 - 17:20   Πλαίσιο Ικανοτήτων Εκπαιδευτών STE(A)M και εργαλείο αυτο-αξιολόγησης STE(A)M (Ν. Σπυροπούλου, ερευνήτρια έργου)

17:20 - 17:40   Το εκπαιδευτικό πρόγραμμα του έργου STE(A)MonEdu (Α. Ιωσηφίδης, Καθηγητής Διεθνούς Πανεπιστημίου)

17:40 - 17:50   Πλατφόρμα υποστήριξης κοινότητας (Ι. Καλέμης, μέλος ομάδας έργου)

17:50 - 18:15   Παρουσίαση 3 επιλεγμένων καλών πρακτικών που έχουν εφαρμοστεί στην τάξη

1η Πρακτική (Νηπιαγωγείο): Παραμυθένια μαθηματικά / Fairytale Mathematics

Παγανιά Γεωργία, Κατερίνα Γαστεράτου, Παναγιώτης Παπαδουρής

2η Πρακτική (Δημοτικό): Μικρόβια δε σας φοβάμαι …τους κανόνες πρόληψης πάντα θυμάμαι!

Αικατερίνη Νικολακοπούλου & Αικατερίνη Νάστου

3η Πρακτική (Γυμνάσιο): "Όταν ο ήλιος είναι πιο ψηλά … της Γης την περίμετρο μετρά". Το πείραμα του Ερατοσθένη στο ΠΓΠΠ."

Αθανασία Μπαλωμένου ΣΕΕ ΠΕ03, Βασιλική Ρήγα, ΠΕ03,ΠΓΠΠ

Σπυριδούλα Σουλιώτη ΠΕ03, 3ο Εσπερινό ΕΠΑΛ, Παρασκευή Πούλου ΠΕ04.04, ΠΓΠΠ

Λαμπρινή Βουτσινά ΠΕ04.01, ΠΓΠΠ

18:15 - 18:45   Συγγραφή STEAM Σεναρίων με βάση templates στο LAMS (Δρ. Σ. Παπαδάκης, Σ.Ε.Ε. ΠΕ86, ΠΕΚΕΣ Δυτ. Ελλάδος)

18:45 - 19:00   Συζήτηση και βιωσιμότητα (Α. Καμέας, Καθηγητής ΕΑΠ, Επιστ. Υπεύθυνος έργου)

4.2   Results and impact

Over 680 participants participated in the Greek National Event of STEAMonEdu project (665 online participants and 20 people who were physically present at the amphitheatre of CTI in Patras, Greece).

A wide variety of topics and speakers were included in the event's program, which was moderated by Prof. I. Zaharakis, the STEAMonEdu project manager.

Prof. A. Kameas, the scientific coordinator of STEAMonEdu project, opened the event with an overview of the project approach, tasks and outputs. He emphasized that, in order to achieve widespread adoption of STE(A)M education, the project focused on the professional development of teachers, educators and trainers, firstly by developing a dedicated international community of practice that was supported by a user-friendly online platform. With the aid of CoP members, project researchers adopted a holistic approach to competence development and produced significant outputs, including frameworks, tools, practices, policies and of course, dedicated high-quality training.

N. Spyropoulou described STEAMComp, the first-ever STE(A)M Educators' Competence Framework and the STEAM Readiness Self-Assessment online tool that is based on it. Prof. A. Iosifidis familiarized the participants with the full educational program of STEAMonEdu. Also, researcher I. Kalemis demonstrated the STE(A)M Educators Community via our online platform, which will remain active and refreshed with new STE(A)M practices due to the enthusiasm and interaction of its members.
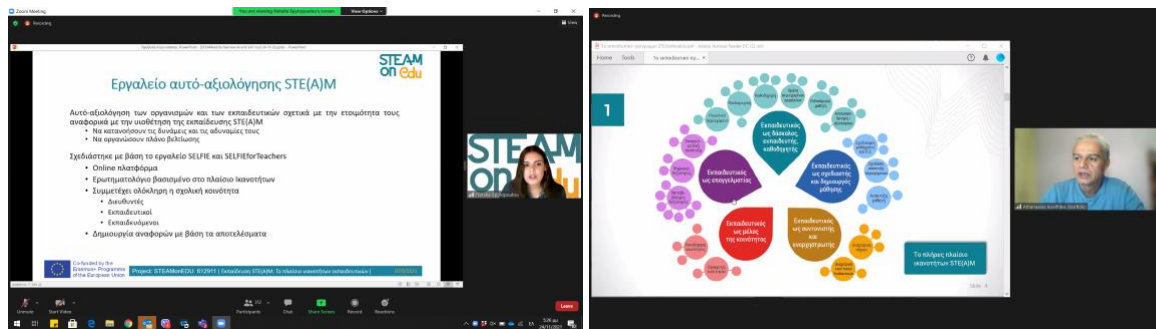
Figure 22 and 23. Screenshots from the presentations.

Good STE(A)M practices were also presented by Greek members of the Regional Directorate of Education of Western Greece. In particular, Professor P. Papadouris and educators G. Pagania, K. Gasteratou presented "FairyTale Mathematics", Dr A. Nikolakopoulou and educator A. Nastou presented "Germs I am not afraid of you…I always keep in mind the health precautions rules", Dr A. Mpalomenou and educators V. Riga, S. Soulioti, P. Poulou, L. Voutsina presented "When the sun is higher… it measures earth's perimeter".
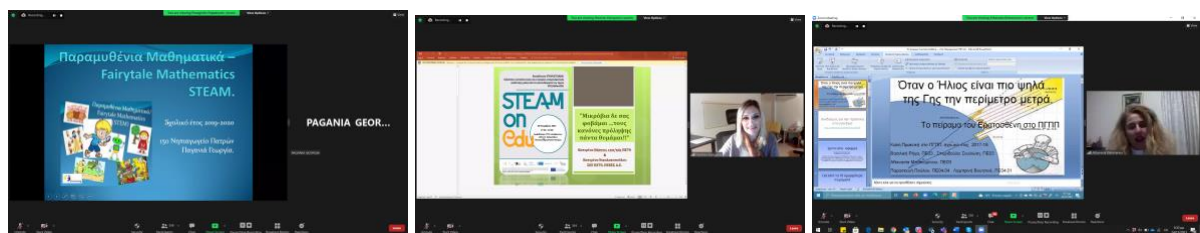
Figure 24-26. Screenshots from the practices.

Finally, Professor S. Papadakis, scientifically responsible for the Regional Directorate of Education of Western Greece on STEAMonEdu, gave an explanatory presentation of step by step designing STE(A)M educational scenarios by using LAMS Template.

Towards the end of the event, Prof. Kameas, in response to questions posed by participants regarding the next steps of STEAMonEdu, mentioned that the project team will now focus on the sustainability of the project results. In particular, the consortium considers offering again the MOOC and Blended Course in 2022, as well as designing more versatile training offers based on their digital content. Moreover, adaptation of the STE(A)M educators' competence framework, profile and self-assessment tools in different education contexts will be pursued.
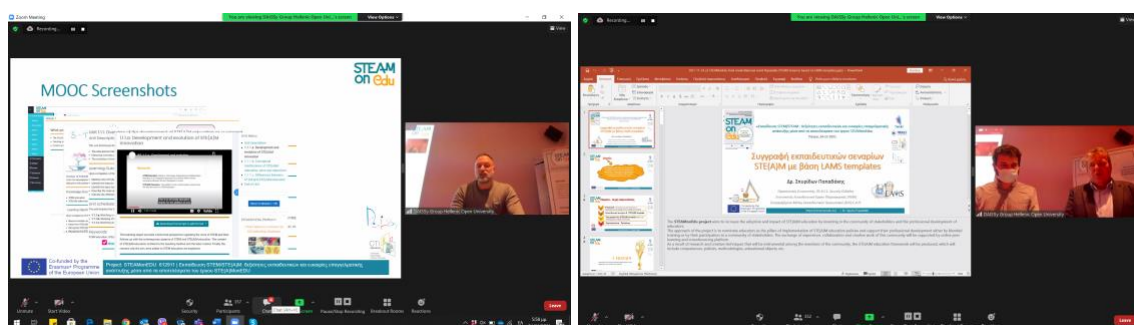
Figure 24 and 25. Screenshots from the last presentations.

The STEAMonEdu Greek National Event is available online on [YouTube](#).

4.3 Communication and Dissemination activities to launch and promote the event

Posters, flyers and banners were created to promote the event as the following. The social channels, the project web site and the sites of the participating partners were used for the communication of the event.

Figure 26 and 27. Flyer and graphics of the event.

Figure 28. The STEAMonEdu third leaflet in Greek.

5   LOCAL EVENT IN ROMANIA

Fundatia EOS Romania (EOS) organized the final multiplier event of the STEAMonEdu project on 03 December 2021, an event that took place online using Microsoft Teams platform. The event was organized together and with the support of **Timis County School Inspectorate** and the network of schools from Timișoara and Timis County.

In the session entitled "**STE(A)M education framework, understanding and developing STE(A)M education in Romania**", the Romanian STEAMonEdu team from EOS Romania, spoke about the achievements of the STEAMonEdu project and about the importance of implementing STE(A)M education as a teaching method in the education system.
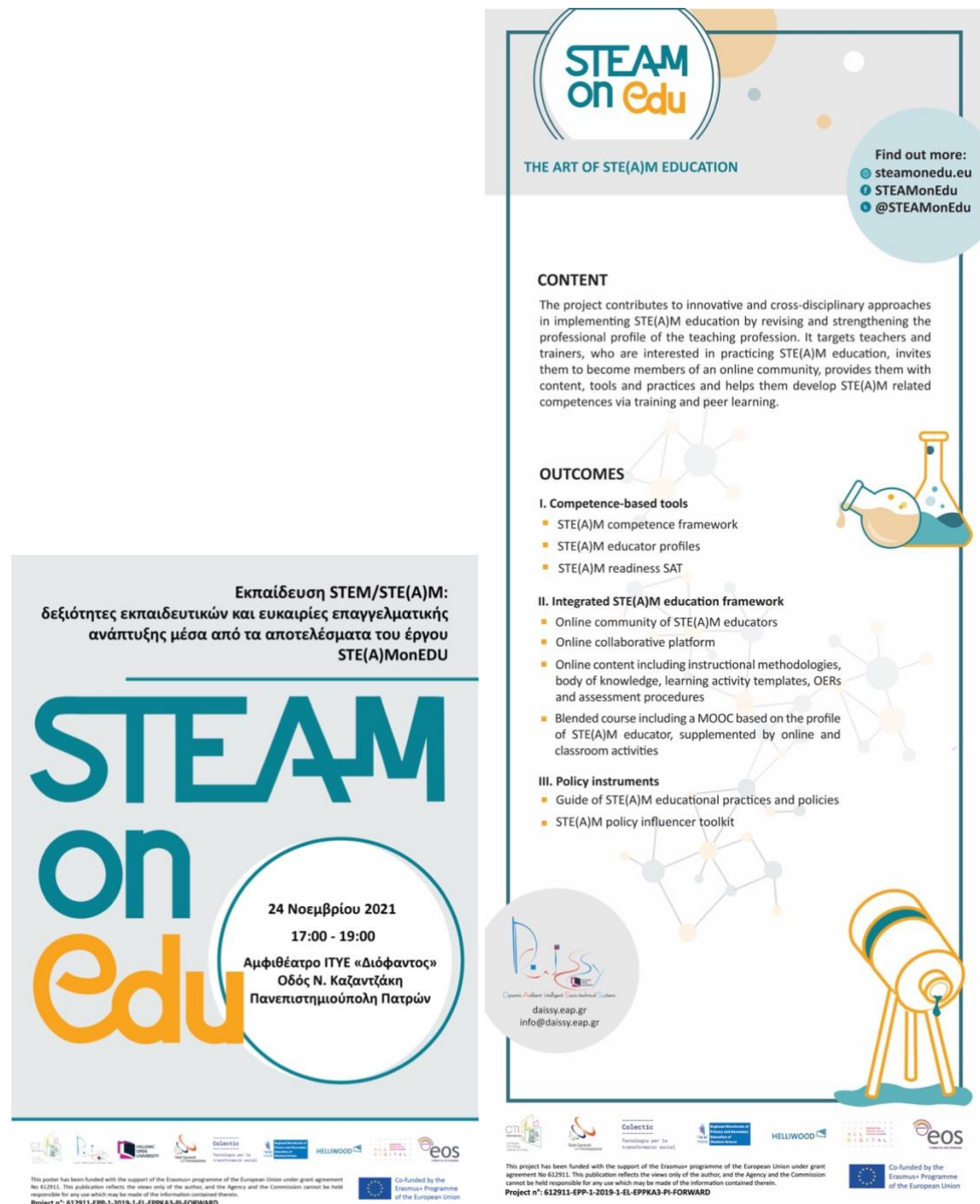
STEAMonEdu dissemination event was organised within a bigger conference/ symposium organised each year by the **Timis County School Inspectorate** which is called Smart kids. This year symposium focused on "Education and new IT technologies in the Euroregion" and had as speakers professionals from NGO's, IT companies and the university sector, all of them being formal and non-formal training providers. The event was opened with an official welcome by Professor Marin Popescu, General School Inspector, Timis County School Inspectorate and was moderated by Professor Jelco Stancov - School inspector for computer science, Timis County School Inspectorate.

Figure 29. Graphic from the Romanian event.

5.1   The format, programme and participants

The event was structured in five sessions as follows:

13.00 – 13.10: Login into Teams Platform/Registration of participants

13.10 – 13.20: Welcome session from organizers

13.20 – 15.30: Project/Papers presentation – session 1:

- **The Digital Transformation**, Mihai Tătăran, General Manager, Avaelgo Timisoara
- **The future of batteries**, Conf.univ.dr. Vlad Chiriac, West University of Timisoara, Faculty of Chemistry, Biology, Geography - Department of Chemistry

15.40 – 17.15: Project presentation – session 2

- **STE(A)M education framework, understanding and developing STE (A) M education in Romania:** Cornelia Popescu, Project Manager, Fundatia EOS Romania and Mihai Iacob, Researcher, Fundatia EOS Romania

17.15 – 18.30: Presentation of scientific works by sections

18.30 – 18.40: Conclusions and closing the event

STEAMonEdu dissemination session "**STE(A)M education framework, understanding and developing STE(A)M education in Romania**" was structured based on the presentation of the general information and detailed presentation of all the project outputs/deliverables.

15.40 – 15.50	Welcome and a very brief introduction of EOS Romania Foundation regarding the STEAM education at national level. **Cornelia Popescu**, Project Manager Fundatia EOS Romania
15.50 – 16.10	Presentation of STEAMonEdu project: • Scope and objective of the project • Partnership • Target groups • An overview regarding all the outputs developed within the project **Cornelia Popescu**, Project Manager Fundatia EOS Romania
16.10 – 16.30	Presentation of the MOOC course • Content/structure • Results • Interest to participate in the MOOC course if it will be replicated Presentation of the STEAMonEdu platform and community and discussion about how and why to join the community/platform **Cornelia Popescu**, Project Manager Fundatia EOS Romania
16.30 – 16.50	

	Presentation of the **STE(A)M education framework** and discussion about the importance of this document for the educational system and educators **Mihai Iacob**, Researcher Fundatia EOS Romania
16.50 – 17.10	Presentation of the **STEA(M) competence framework**
17.10 – 17.15	Conclusions – closing the session
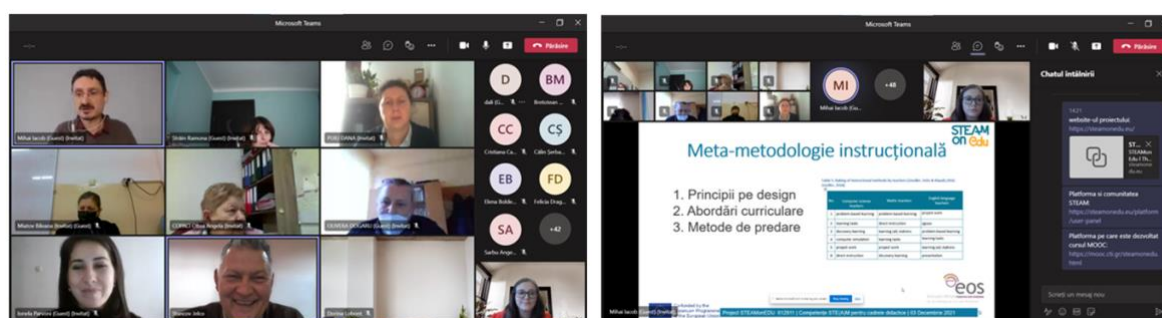
Figure 30 and 31. Screenshots from the Romanian event.

Participants were mainly teachers/educators and trainers from pre-university and university sectors but also ICT professionals from different companies and ICT training providers. EOS Foundation has a long-term partnership with Timis County School Inspectorate and the networks of schools/universities at regional and national level. In this context, the involvement of teachers/trainers from these networks and their participation to the dissemination event session was not so difficult to achieve. Almost 50 people attended the STEAMonEdu dissemination session.

5.2 Results and impact

During the session, participants learned about **STEAMonEdu project objectives, results and outputs and the developed MOOC and blended training**. Participants were very enthusiastic about the content of the event, and they have shown a special interest in the MOOC training, STE(A)M education framework and STEAMonEdu community.

The highlights of the event were related to the big number of participants that responded to the invitation and the interest manifested by them towards the topics presented during the event sessions. Networks of schools, training centres from universities and private ICT training centres are constantly interested in using new resources and training approaches in their training activities. These kinds of resources are very few in Romania, and representatives of schools and educational training

centres emphasized the importance of STE(A)M resources for the education sector, whether they are formal or non-formal training providers.

Thanks to the good collaboration that EOS Foundation has with these networks and following the big number of projects developed together for teachers and staff members, STEAMonEdu resources will be fully exploited in the future, ensuring this way the project sustainability and a positive impact regarding the use of all the outputs developed within the project.
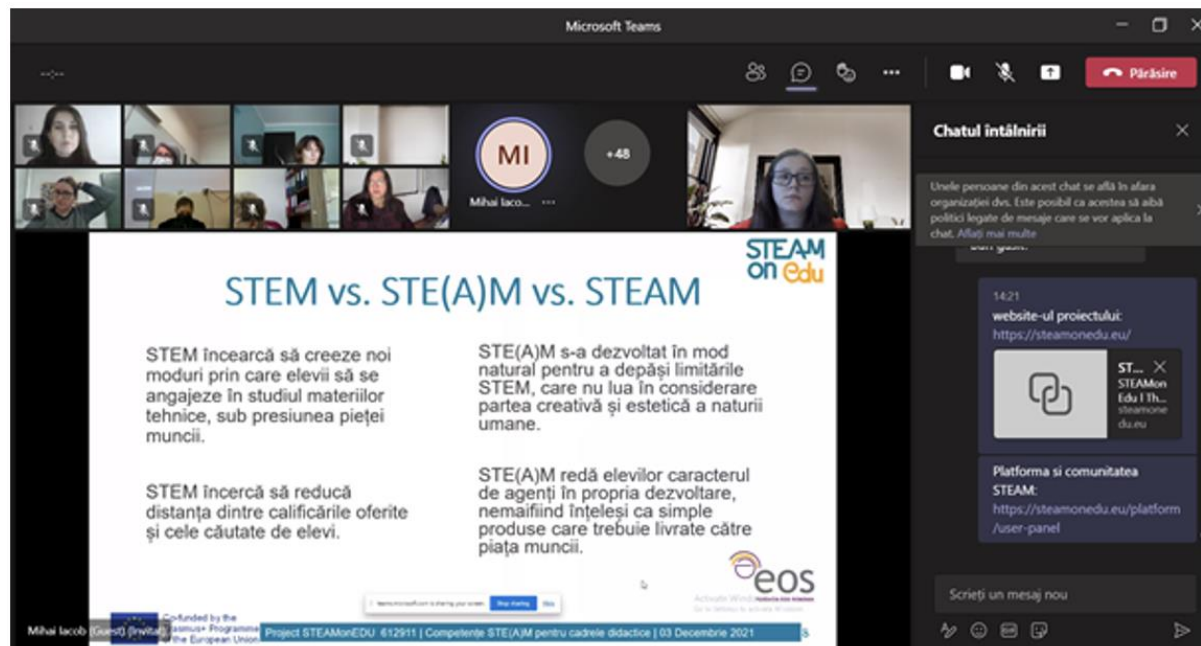
Figure 32. Screenshot during the presentation at the Romanian event.

5.3 Communication and Dissemination activities to launch and promote the event

The event was mainly promoted through the network of schools and universities from Timisoara and Timis County, through their internal channels of communication: mailing list and newsletters.

Additionally, EOS Facebook page was used to promote the event with the aim to raise awareness about STEAMonEdu project and the results achieved during the project lifetime:

https://www.facebook.com/FundatiaEOS/posts/476584297014555549

A short blogpost was also posted on the STEAMonEdu website after running the event:

https://steamonedu.eu/news/event-in-romania-steam/.

Main dissemination partner of the event was Timis County School Inspectorate.

5.4 Survey to the Audience and the perception of the event

An online survey was used in order to assess the STEAMonEdu dissemination event. The link with the survey was posted in the chat and participants were asked to complete it after the session ends.

The results of the survey showed that the dissemination event was evaluated in a positive way and participants considered that project outputs presented were qualitative and interesting for them.

Results of survey questions can be seen bellow:

Question 1: **Type of the organization/institution/ the role of the participants in relation with the STEAMonEdu project**
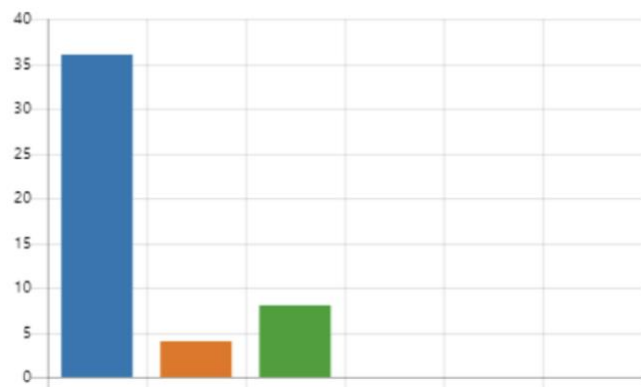
Out of a total of 48 respondents:

- 36 participants were teachers/educators/trainers
- 4 participants were representatives of local, regional or national education authority
- 8 participants were STEAM school representative

Question 2: How did you find out about this event?

Out of a total of 48 respondents:

- 4 participants found out about the event from social media

- 19 participants responded that they were informed about this session from their colleagues/friends
- 25 participants found out about the event from the newsletter sent by Timis County School Inspectorate

Question 3: How clear were the overall goals and objectives of the project for you? Please select the option that works best for you.

Cât de clare au fost pentru dvs. scopurile și obiectivele generale ale proiectului? Vă rugăm selectați opțiunea care vi se potrivește cel mai bine.

Mai multe detalii   💡 Insights

🔵 Foarte clar	26
🟠 Destul de clar	22
🟢 Mai mult sau mai puțin clar	0
🔴 Deloc clar	0

Out of a total of 48 respondents:

- 26 participants answered that the scope and general objectives of the project were very clear
- 22 participants answered that the scope and general objectives of the project were pretty clear

Question 4: If STEAMOnEdu goals / objectives were not very clear to you, what was the reason for this?

Dacă scopurile/obiectivele STEAMonedu nu au fost foarte clare pentru dvs., care a fost motivu care a condus la acest lucru? Selectați toate variantele care se aplică.

Mai multe detalii   💡 Insights

🔵 Proiectul este prea complicat	0
🟠 Informația prezentată a fost p...	0
🟢 Prezentarea a avut o calitate r...	0
🔴 Nu am înțeles cum se aplică p...	1
🟣 Nu este cazul	47
🟤 Altele, vă rugăm specificați:	0
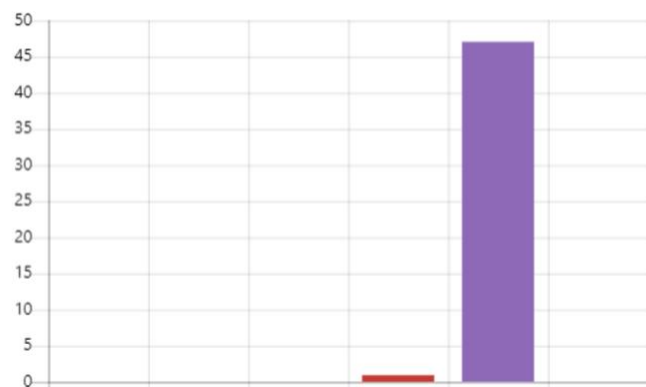
Out of a total of 48 respondents, 47 participants stated that STEAMOnEdu goals / objectives were clear for them and just one participant stated that "I didn't understand how it applies to me".

Question 5: If the tools and products developed by the STEAMonedu project were difficult for you to understand, what was the reason that led to this?

Dacă instrumentele și produsele dezvoltate de proiectul STEAMonedu au fost pentru dvs. dificil de înțeles, care a fost motivul care a condus la acest lucru?

Mai multe detalii 💡 Insights

- 🔵 Prea multe detalii, care au fost... 0
- 🟠 Prea multe informații 0
- 🟢 Prezentarea a avut o calitate r... 0
- 🔴 Nu am înțeles cum se aplică p... 1
- 🟣 Nu este cazul 47
- 🟤 Altele, vă rugăm specificați 0
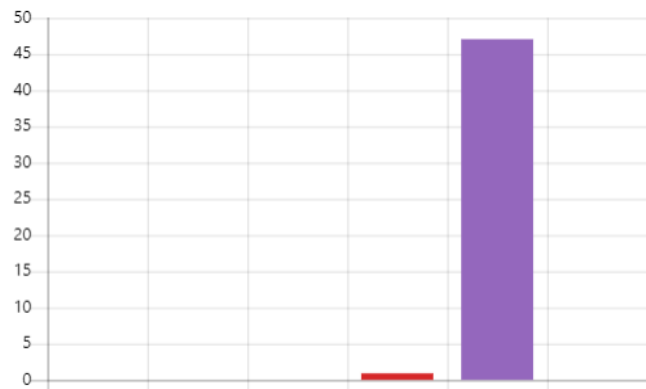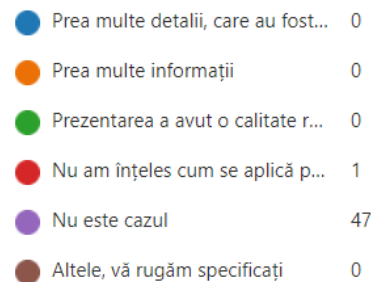
Out of a total of 48 respondents:

- 47 participants answered, "Is not the case", they understood well the tools and products developed by the STEAMonedu project
- Only 1 participant answered "I didn't understand how it applies to me".

Question 6: Which of the project results presented are more useful for you?

Dintre rezultatele de proiect prezentate, care au fost cele mai utile pentru dvs.?

Mai multe detalii 💡 Insights

- 🔵 Oferta de formare - cursul MO... 22
- 🟠 Comunitatea/platforma STEA... 5
- 🟢 Cadrul educațional STEAM 11
- 🔴 Cadrul de competențe STEAM 10
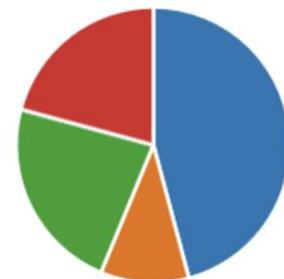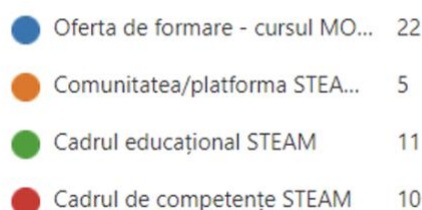
Out of a total of 48 respondents:

- 22 participants answered that MOOC training is the most useful resource to be used by them in the future
- 5 participants answered that STEAMonEdu community and platform will be more useful and they intend to use it
- 11 participants had a particular interest for STEAM education framework
- 10 participants answered that STEAM competence framework will be useful for them

Question 7: Did you have the opportunity to obtain specific information if you needed or if you didn't understand something?

All 48 respondents stated that "yes", they had the opportunity to get specific information if they received answers to their questions.

Ați avut ocazia să obțineți informații specifice dacă ați avut nevoie sau nu ați înțeles ceva anume?

Mai multe detalii   💡 Insights

● Da   48
● Nu   0
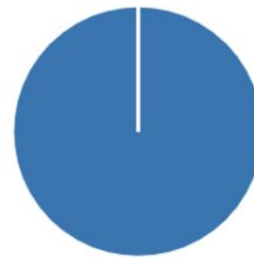
Question 8: Will you recommend the MOOC course, the STEAMonEdu community of educators, and the other project outputs to other people?

Veți recomanda și altor persoane cursul MOOC, comunitatea de educatori STEAMonEdu si rezultatele proiectului?

Mai multe detalii

● Da   48
● Nu   0
● Nu știu   0

Figures 33-40. Survey results of the Romanian event.

All 48 respondents stated that "yes", they will recommend some of the outputs to their colleagues and other professionals.

4. LOCAL EVENT IN SPAIN

It took place on December 9 at the Valkiria Hub space in Barcelona. Under the motto of "Twenty Years Responding to Digital Gaps" brought together about sixty people in hybrid format sharing and collaborating on technological and social innovation, STEAM education and changes in digital gaps. The open retransmission through YouTube channel reached 308 visualizations.
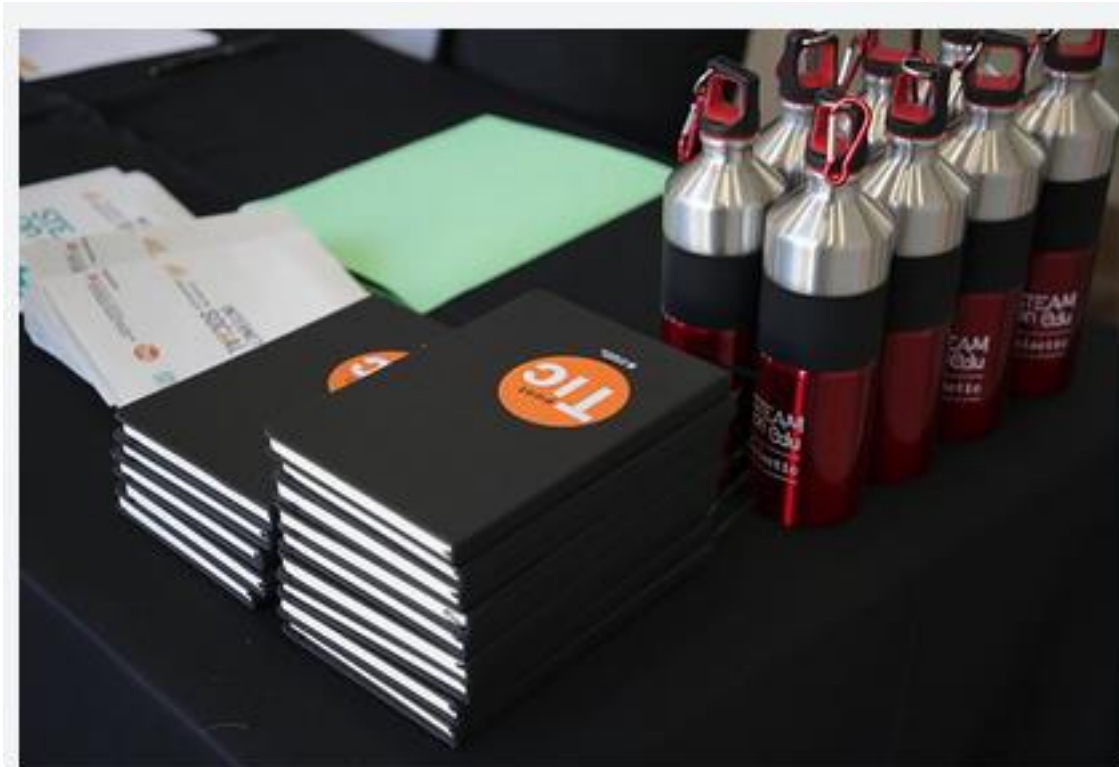
Figure 41. Gadget overview at the reception of the event

The Conference was inaugurated with a welcome by Anna Inglés, Director of the Technical Office of the Punt TIC Network and Pep Oliveras, Technician of the STEAMonEdu project. Across the day, a virtual panel was presented open to all people who want to participate to collect the main ideas.

The inaugural session "STEAMonEdu for digital inclusion", facilitated by Esther Subias, Project Manager at Colectic, unveiled the STEAMonEdu project which aims to increase the adoption and impact of STEAM education by investing efforts in empowering the community of stakeholders and professional development of educators and trainers. The project is aimed at educators working in the field of STE(A)M (in its centuries in English: Science, Technology, Engineering, Art and Mathematics).

The project has generated an online platform and community of educators; a guide to good practice and educational policies STE(A)M; the creation of a STE(A)M digital competency framework, to design and implement STE(A)M educational activities and plan the professional development of educators; a MOOC course for educators. The presentation was international in nature and was attended by people from European and it was offered by the STEAMonEdu members of the partnership in English, with direct translation to Catalan.

First the people who start this presentation space were:

- Achilles Kameas, Professor of Pervasive and Mobile Computing Systems, DAISSy research group at Hellenic Open University in Greece.
- Cornelia Popescu, Project Manager at Fundatia EOS - Educating for an Open Society in Romania.
- Paolo Russo, Secretary-General, Stati Generali dell'Innovazione in Italy.

Achilles Kameas presented the competence framework of educators STE(A)M emphasizing that "the STEAMonEdu project has not stopped during the pandemic, although it has been a challenge." The implementation of the competence framework proposal has provided relevant results in the different areas of the communities where it has been carried out. This outcome is aimed at working with educators and facilitators and, for this reason, a key aspect is their ability through specific skills and abilities. The implementation of the competence framework proposal has provided relevant results in the different areas of the communities where it has been carried out.

Throughout the implementation of the project, a specific need was identified that highlighted the facilitators and was the lack of a tool that could be used as a guide to self-assessment and define their professional profile. This task is particularly complex, as STE(A)M educators do not have a single, but multiple profile. For this reason, the competence framework for STE(A)M educators has been developed. This framework encompasses different groups of competencies, which include practical and specific competencies. The defined competencies describe the educator as: Tutor, designer or developer of training proposals, administrator or coordinator of learning processes and available resources, professional who develops his skills constantly.

> "Why do we need this competency framework? We identified that educators said we needed a tool that would provide guidance, a way to do self-assessment, as well as define types of profiles of facilitators."

Figure 42. Professor Achilles Kameas during the event.

Cornelia Popescu specifically contextualized the goal of the STE(A)M education framework. This framework is intended to cover such important issues as: what is STE(A)M education, what are the

possibilities of the educator, or what is the difference between STEM and STE(A)M? "We developed this framework based on a questionnaire aimed at educators in partner countries. STEAM ".

The aim of the educational framework was to bring together in a single framework different issues as relevant as:

   - What is #STEAM education?

   - What is the difference between #STEM and #STEAM? "

This framework includes from practice to research in the STE(A)M methodologies themselves, the profiles and professionals and the skills needed to work in the STE(A)M field.

Figure 43. Cornelia Popescu presenting the STE(A)M education framework

Paolo Russo introduced the STE(A)M community of practice, noting that the educator is not alone in his tasks but is within different communities. One of these communities is the virtual one, a community with several strong potentialities. The virtual community proposed by STEAMonEdu aims to share the knowledge and resources of each expert. Specifically, it allows to generate synergies, to have the support of other professionals, to share good practices and to obtain practical resources to be able to carry out innovative training activities.

There are currently more than 700 members in this practical community, among whom we can find different profiles of educators and very diverse knowledge. By joining this community, it is possible to access different STEAM resources with different proposals and policies on how to implement them in your own practical context.

"The practical community aims to share the knowledge, the resources of each expert. There are currently more than 705 members "

Figure 44. Paolo Russo presenting the STEAMonEdu CoP

In the second part of the space for the presentation of the STEAMonEdu project, the theme focuses on the framework of public policies and involves:

- Claudia Matera, Project and Fundraising Officer, ALL DIGITAL, Belgium.
- Spyros Papadakis, Project Manager at the Regional Center for Educational Planning of Western Greece.
- Katrin Schuberth, Project Manager at Helliwood media & education, Germany.

Claudia Matera presented the policies talking about the European Commission's Digital Education Plan, which is a system of digital competences and skills. It is intended for the training of educators. However, it is also intended to start this digital training from secondary education and is therefore applicable to various training contexts.

The European Commission, which is driving this plan, is committed to encouraging digital inclusion in all communities. The European agenda includes STE(A)M education with the intention of having an impact on the world of work and the professional development of people. With special emphasis on the fact that this digital inclusion is oriented towards sustainability. For this reason, Claudia Matera highlights the importance of public policies for working on individual digital skills to develop professional contexts geared towards digital and sustainable work. Currently, the European education landscape focuses on the quality of training, gender mainstreaming, fostering resilience and online education systems.

"The EU Digital Education Plan is a system of digital skills and competences to be able to train educators. It is also intended to start this digital training from secondary education."

Figure 45. Claudia Matera talking about EU policies

Figure 46. Spyros Papadakis introducing the audience to LAMS

Katrin Schuberth focused on the potential and impact that STE(A)M education can have on networks of digital centers and ICT Points. The STE(A)M approach allows us to ask real, contextualized questions, so it can help us find solutions together. Not just in the classroom, but as a community. A clear example of this idea is how issues such as COVID-19 have been addressed with initiatives such as screen protector printing with 3D printers.

An interesting point is to value the A, of art, of the STE(A)M approach because it allows to work the critical thought. The other relevant aspect of the STE(A)M approach is its multidisciplinarity. We can see this in the participation of professionals from all fields in the virtual courses of the STEAMonEdu project. Although STEAMonEdu focuses on formal education in the classroom, it is essential to consider how informal education can contribute to the teaching-learning processes.

> "The STEAM approach allows us to ask real, contextualized questions, so it can help us find solutions together. Not just in the classroom, but as a community."

Figure 47. Katrin Schuberth sharing key points on STE(A)M within networks

After a coffee break, in the second block of the day, we talked about our regional network. We watched the video summary of the year of the ICT Point Network. We are 448 active points in the Punt TIC Network and this year we have lived a time marked by the hybridization of proposals, face-to-face and telematic.

Then, Joana Barbany, General Manager of Digital Society of the Government of Catalonia, joined on video conference to emphasize the urgency to intervene in the digital gaps and share the various proposals that are currently already affecting this social issue, such as proposals such as the DonaTIC Plan or the ACTIC program. It highlights the importance of the ICT Point Network for digital social innovation to be widespread throughout the territory.

Figure 48. Joana Barbany during the event

The following presentation, "What have we learned during these years?", was a conversation about the digital divide in ICT Points with the participation of experts from the ICT Point Network and representatives of the different types of points. It was led by Pep Oliveras.

Figure 49. Pep Oliveras facilitating the discussion

Jordi, facilitator of Punt Òmnia Calabria 66 at Barcelona, shared his experience as a facilitator in the period of the pandemic through which he highlights the difficulties due to the digital access gap, specifically due to lack of hardware and access on the Net.

> "With the # covid19 we lived digital access gap due to lack of hardware and network access. Now, we detect an added complication for access and digital literacy of citizens with the implementation of online administrative procedures."

Anna Blazquez, from Fablab in Sant Cugat, introduced the Fab Labs proposal and pointed out that it is much more than a space with machines. The proposal focuses on everything we can do with machines to enable the empowerment of people in the use and appropriation of new technologies through the Maker philosophy and the use of free software.

> "The task of the Fab Lab is to empower people to improve their living conditions. An outstanding experience is when a teacher prepared a colour tablet for students with vision or autism difficulties." # JdIS2021

Carles Roca, facilitator of the ICT Point of Alta Ribagorça, from the most competent point of view and shares his experience working with ACTIC in relation to basic skills and also the part of innovation.

> "There has been a demand for research work on prostheses and I needed to print a hand for their research and we have worked with a drone project to enhance the territory and promote the decentralization of tourist uses."

He explained that before the demand was more oriented in the instrumental field and, currently, the most notable demand is the accreditation of digital skills. In recent years, there has been an increase in the number of people interested in being accredited with ACTIC. Certification for selection processes and professional training has increasingly been recognized, this has also influenced.

> "I have been working in the ICT field for 18 years. Before, the demand was oriented in the instrumental field. Currently, in the accreditation of digital skills. People come to the ICT point to respond to everyday needs."

Sergi Porteles, assistant technician at the Cardedeu library, highlighted the role of this public facility in accessing and understanding the needs of citizens. As public workers, they cater to all kinds of needs and very diverse audiences. It shares the initiative of a group of elderly people who are getting started in digital literacy thanks to the dynamism of a volunteer. He also explained the digital fiction program in which the library participates. Digital fiction is a multimodal work of art that looks at illustration, poetry or narrative.

> "These works, like video games, invite us through the game to discover and learn about new playful proposals. It has been a great success with families."

Mercè Fort, from the Smart Center in Santa Bàrbara, is an example of multidisciplinary work. Years ago, they reorganized the different services offered to citizens to create a unique space of reference for training and digital innovation. Mercè highlighted how initiatives such as the use of 3D printers promote the appropriation of these digital tools by the public.

The last space of the day was dedicated to working the most practical part through two workshops. Pep Oliveres presented with the new Ubuntu-based model of the Canonical company. Linux has been

present on servers, but thanks to Ubuntu it is possible to access and use free software from personal computers. This technical proposal aims to promote the appropriation of digital media by citizens, but not only individually.

Next, a small space for participation in relation to the "ICT Point Experiences and the potential of networking", where different points shared their experiences.

And with the workshop on innovative methodologies, we worked on a case study in small groups where four training proposals that correspond to different innovative methodologies are explored: gamification, problem-based learning, inverted class and learning based on projects.

Sharing group reflections highlights:

- "Role-playing: digital social innovation team." Corresponding to gamification allows you to experience experiences through characters. On the part of the group, the option of opening the creation of a fictitious situation to the participants themselves is proposed so that they can take part in the whole creation process. This opens up the possibility of new proposals.
- "How to make a resume for a specialized professional profile?" Through problem-based learning, it is proposed to work on digital and other skills such as job search, group work, self-networking and specific resource search. A strong point of this proposal, emphasizes the participating group, is the possibility of sharing knowledge and working together. In the same way, it would be possible to go deeper into the resolution of specific doubts and requests. From this individual detection it was found that it was a recurring demand and that it could be satisfied as a group with the same demands, for example the case of the elderly.
- "2.0 Job Search Tools." An inverted class proposal where the facilitator acts as a facilitator. Material to work on has already been shared before the practical session. Here they also ask about the privacy and security of the data. As a strong point, the autonomy of the people participating in the session is considered. Autonomy doing and learning value. As an experience this type of methodology in the Fab Lab work with university students to solve a problem. They have worked before and perhaps the difficulty is that when they arrive at the workshop if they are not prepared there may be different rhythms. The advantage is that if they have prepared it, the previous reflection motivates more work and more progress.
- "We claim, we inspire!" The methodology covered is project-based learning. From the perspective of STEAMonEDU, in this case they raise the reflection on age. If we work from an early age, we can help the girls to participate, get involved, join the STE(A)M. If it gets too late, we lose young people in scientific-technical vocations, STEM vocations.

The chat of the streaming channel is invigorated in a transversal way, asking about what characterizes the innovative methodologies and what advantages they can bring to the training activities. The collection of these contributions is:

- Punt Òmnia d'Espronceda: For me, an innovative methodology would be a different way of doing things than the one used so far to address a problem or learn something. Perhaps also more original and creative. / I believe that they are more open, changing, inclusive methodologies that are formed with the help of all the people who work in them. With which they also adapt better to the people and territories. / The fact of being methodologies, sometimes focused on addressing specific learning or problems, not whether they could always be extrapolated to other areas or not. Maybe it could be a weak point.

- Aj_vilallonga: Punt Omnia 1 A methodology that goes beyond the traditional role of the expert-student, but seeks and uses participatory techniques, in which the 'learner' is the protagonist. / I agree, also that they are constantly rehearsing and can give space to the error, but this could also be seen as a strong point, the error makes you learn.
- Masiaespinos Punt Omnia. they are very attractive methodologies, especially for children and young people. / These methodologies are often based on very changing tools, this can be a problem especially for older people.
- Alcover Library: Yes, I agree with all of you, they are inclusive methodologies that are accessible to all kinds of users. / They have the advantage over traditional methodologies that reach more people.
- Valls Punt Omnia: Innovative methodologies would be to make the teaching-learning process different, to adapt even more to the goals and needs of users with different and current tools and resources.

At the end of the day, to collect contributions, a participatory space of a virtual panel has been set up, facilitated by Anna Inglés and Pep Oliveras. Outstanding ideas that have emerged are:

- STE(A)M skills are not the same as ICT skills. They are closely related, but STE(A)M competencies encompass competencies that do not have to make direct use of digital tools. Example: Knowing how to design an assessment test is a STE(A)M skill and does not involve the use of digital skills directly.
- Facilitators are digital mediators, although there is currently no official qualification that recognizes them as such.

Finally, Ricard Faura, head of the Digital Inclusion and Training Service, spoke at the conference to gather the main points. The reason why this day has been planned with the theme specifically focused on the reality of ICT points is to assess the expert knowledge that the facilitators of the points themselves have. It is essential to note that the circumstances arising from COVID-19 have put on the table the existence and urgency to intervene in the digital divide. One of the current opportunities is the European Sources that could enable specific actions in this phenomenon.

5.5   The format, programme and participants

It took place on a blended format: on December 9 at the Valkiria Hub space in Barcelona, for the ones who wanted to come in presence, and through virtual channels (Big Blue Button videoconference system) for those who prefer virtual presence.

Figure 50. Online streaming service

Under the motto of "Twenty Years Responding to Digital Gaps" brought together about sixty people in hybrid format sharing and collaborating on technological and social innovation, STEAM education and changes in digital gaps.

The open retransmission through YouTube channel reached 308 visualizations.

The programme

9:00 h - Accreditations and reception
9:30 h - Welcome
9:45 h - STEAMonEdu for digital inclusion: Presentation of results of the project

The STEAMonEdu project aims to increase the adoption and impact of STEAM education by investing efforts in empowering the community of interested people and in the professional development of educators and trainers. The project is aimed at educators working in the field of STE(A)M (Science, Technology, Engineering, Art and Mathematics).

STEAMonEdu works to strengthen a network of people interested in this field and offers the opportunity to share their experiences. During the project, experts involved have designed the training curriculum and some learning activities that can be applied by teachers and STE(A)M educators.

The project has generated an online platform and a community of educators; a guide to good educational practices and STE(A)M policies; an STE(A)M digital competences framework for

educatiors, several STE(A)M educational activities and a very completed plan of professional development of educators; this includes a MOOC course for educators that will be offered again in the near future.

During this conference, we will present the most relevant results of the project with the facilitation of Esther Subias, PM of STEAMonEdu at Colectic (Catalonia-Spain) and

Achilles Kameas, Professor of Pervasive and Mobile Computing Systems, DAISSy research group, Hellenic Open University. Greece: STE(A)M educators' competence framework

Cornelia Popescu, Project manager at Fundatia EOS - Educating for an Open Society. Romania. STE(A)M Education Framework – and the Open Educational Resources

Paolo Russo, Secretary-General, Stati Generali dell'Innovazione. Italy: STE(A)M Community of Practice

Claudia Matera, Project and Fundraising Officer, ALL DIGITAL. Belgium. STE(A)M within policies.

Spyros Papadakis, Project Manager at The Regional Center for Educational Planning of Western Greece. The relevance of STE(A)M training for educators.

Katrin Schuberth, Project Manager at Helliwood media & education. Germany. STEAM education impact on the networks of Telecenters.

10:50 h - Coffe - networking
11:10 h - Intervention of Joana Barbany (@joanabarbany), Director General for Digital Society of the Catalan Government (Generalitat de Catalunya)

11:15 h - Conversation about the digital divide in ICT points: What have we learned over the last 20 years?

In the last twenty years, at the Punt TIC Network (telecenters at Catalonia) we have experienced the changes and the challenges and checked first hand the evolution on the digital gaps. In this conference, we want to address this situation to respond and continue working from the digital social innovation perspective. In 2020, we found ourselves in a health emergency caused by covid19. Problems related to digital inequalities have emerged strongly. We will talk to different e-facilitators to reflect on these changes.

12:15 h - Interactive Spaces
Workshop: Free software tools and resources: the Punt TIC experience

In this workshop, we will talk about free software tools and solutions that help us to work and share our work, with open standards that facilitate intercooperation. This allow us to have more control over our computer, our data and our privacy. We will take the Punt TIC experience in order to explain how this can be implementd at the telecenters.

13:00 h - Interactive spaces

Workshop: SteamOnEdu and the telecenters: exploring the intersections

In this workshop we are going to explore how the professional profile of digital trainers and facilitators impacts and matters. And how to share ideas, experiences, activities, resources, networks and dialogue is an element that makes a difference.

The STEAMonEdu project has explored all these avenues that have also been explored by Xarxa Punt TIC. Now is the time to share, analyze the results and see how we can improve our impact on the citizens with whom we interact. Is the STEAM profile a must on a telecenter?

13:45 h - Closing session. Goodbye and thank you.

5.6   Results and impact

The conference had a direct impact on the more than 60 participants through the event in person or online-by the videoconference room and indirectly on the more than 300 views that the streaming broadcast has had.
The true impact of the conference, in which policy makers from the department of digital policies and the department of social affairs participated, will be better visualized in the long term.
The comments collected in situ by the participants were very favourable, including those who registered in the virtual panel of the event.

Figure 51: http://scrumblr.ca/jdis2021
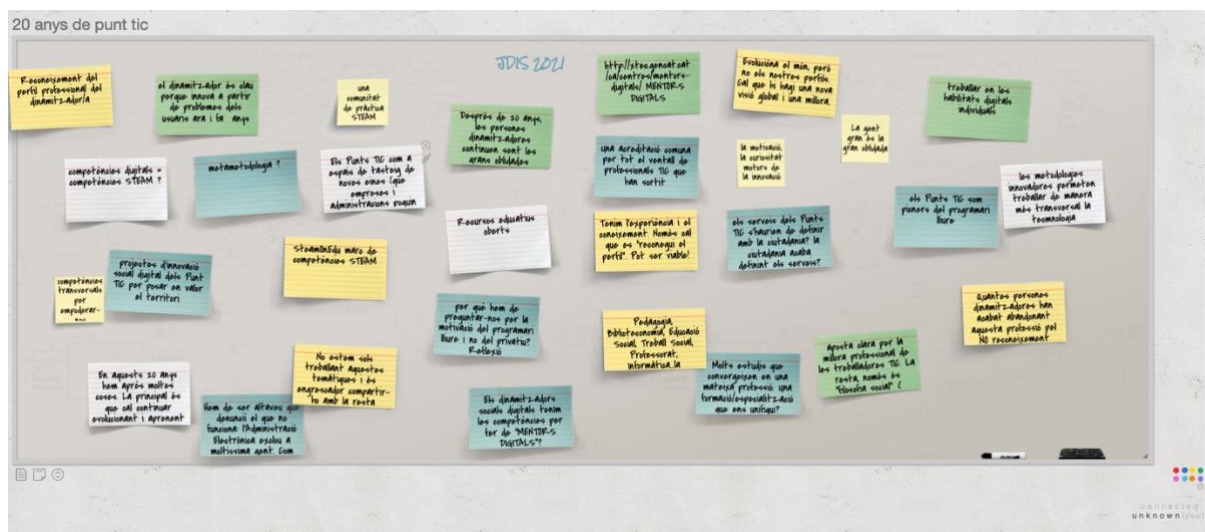
The main idees:

- Innovative methodologies allow the technology to be worked in a more transversal way
- A commune accreditation for professionals is needed

- I am not alone working on these and it is exciting to share them with the rest of Europe as well
- ICT Points as a test-place of new tools and methods (which companies and administrations can test things in these spaces)
- Cal to develop projects of digital social innovation of the ICT Point to put value on the territory

Photos available here: https://www.flickr.com/photos/143976547@N03

5.7 Communication and Dissemination activities to launch and promote the event

The event has been disseminated through different channels: Colectic website, PuntTIC website, specific blog for the conference. In addition, it has been sent through a newsletter to the entire Catalan Telecentre xarxa: e-facilitators and the persons responsible for the managing entities.
It has been featured in the STEAMcat group, personalized emails have been sent and phone calls have been made. Posts have been made on social media.

6   LOCAL EVENT IN ITALY

6.1   The format, programme and participants

Steamonedu's multiplier event was organised on Saturday 11 December on the first edition of the "Antonella Giulia Pizzaleo 2021 Award" for Digital Innovation with Social Impact, promoted by Stati Generali Dell' Innovazione - SGI. The event took place in Rome at the headquarters of the Lazio Region, in the Sala Tirreno. In perfect STE(A)M style, different actors who can influence in various ways the new educational policies within the school sector and the non-formal adult education sector were present. The event was attended by innovators, start-up creators, students from the participating schools, and professionals from the innovation sector all working in social impact sectors. Two contests were held during the event, the first one dedicated to start-ups and the second one to schools that developed STEAM projects during the last year.

For the award ceremony, two proposals from two different Italian schools were selected. The jury decided to evaluate an ex-aequo between the artistic high school in Cagliari Foiso Fois, which proposed a solution very relevant to the UN 2030 Agenda goals, and the scientific high school Enzo Rossi in Rome, which produced a more advanced and creative STEAM solution.

The jury recognised the innovative value and social impact of the "EnjoyYourWC" project presented by Cagliari's Foiso Fois Art School, which falls under the theme of Clean Water and Sanitation, one of the goals of the 2030 Agenda. The students developed a website, virtual tours, augmented reality, and virtual 3D projects, which can also be viewed with 3D visors.

The Roman scientific high school Enzo Rossi presented the project "TDC Tessuto Digitale Connettivo" (Digital Connective Fabric) to enhance young talents projected towards a future in the world of fashion, make them protagonists through the use of technologies for the digital production of a dress or an accessory, use of design and programming software for interactive garments, research into new wearable, bio or "intelligent" materials, a physical and functional realisation of the designed dress or accessory".

Figure 52-55. Pictures from the Italian event.

6.2 Results and impact

During the conference preceding the prize-giving ceremony, the results of the SteamOnEdu course, the training materials produced by the project partners and the reference framework for the construction of training paths and materials for the creation of educational policies to be used in schools were presented.

At the end of its two-year duration, the SteamOnEdu project offers the world of formal and non-formal education something that was missing: an organic system of materials on which to base the discussion, design and implementation of initiatives based on the innovative STE(A)M educational approach, whose philosophy involves confronting learners with the solution of real problems through the integrated use of scientific, technical and humanistic disciplines. STEAMonEdu has already gathered a community of practice of more than 700 teachers from all over Europe who are active in the creation of STE(A)M learning paths.

The Pizzaleo Award is intended as an annual meeting point for the Italian community to bring out and learn about the many good practices implemented by our teachers and trainers.

The event was very important for the participants as a SteamOnEdu community was presented where teachers who want to innovate traditional school didactics by introducing STE(A)M activities can count on colleagues and experts in the field with whom they can share STE(A)M activities.

6.3 Communication and Dissemination activities to launch and promote the event

The dissemination of the event took place through a newsletter sent to all Italian secondary schools, more than 300 teachers interested in STE(A)M and STEM education who have already collaborated actively during the initiatives promoted by Stati Generali Dell' Innovazione were invited by e-mail.

The event was also promoted through the social pages (twitter, facebook, instagram) and the websites of both the SteamOnEdu project and Stati Generali Dell' Innovazione two weeks before.

During the organisation's school-related initiatives of the organization, teachers were announced about the event, all those who had participated in projects with stem value were asked to register with their classes to participate in the final award ceremony.

6.4 Survey to the Audience and the perception of the event

To monitor the level of satisfaction with the event and the themes that the SteamOnEdu project proposes, participants were asked to fill in a specially created online survey.

The participants expressed a high level of satisfaction with the organisation of the event, which included clear logistical information and a fast organisational machine and found the programme and topics to be very interesting.

Concerning STE(A)M education, participants stated that the integration of scientific and humanistic education is to be welcomed because it allows students to open their learning horizons. STE(A)M teaching is necessary to create integrated teaching and healthy contamination between the different fields of study.

In addition, the European and international dimension of the STE(A)M approach can facilitate the exchange of experiences and good practices, while at the same time also enhancing important precedents in educational innovation in the scientific field, which have already been set in the last decades of the last century by prestigious teachers and pedagogues.

About the organisation of the event, the logistical indications were clear, and the organisational machine was fast and efficient.