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Grant holder, represented by Prof. Mosad Zineldin

Linnæus University

SWEDEN

**ICU-RERE: ICU-Knowledge Triangle, Innovation:
Reinforcing of Education- Research E-Health & Medical Links
Nr. 609506-EPP-1-2019-1-SE-EPPKA2-CBHE-JP**

WP5 CAPACITY BUILDING

REPORT CESIE

In December 2021, 5 capacity building meetings coordinated by CESIE took place in relation to WP5. In total 51 people from modules developers; lecturers & CeHI's staff; students and stakeholders participated in the TOT.

The meetings have been organized in the following days:

- Day 1 – 6/12/2021
- Day 2 – 10/12/2021
- Day 3 – 12/12/2021
- Day 4 – 17/12/2021
- Day 5 – 21/12/2021

The meetings organised by CESIE lasted 3 hours per day and had two main objectives:

The first objective was to initiate the comprehensive system of continuous capacity building measures for the academic/research staff involved at the design and the study curricula and delivering of lectures for students of the E-Health course modules as well as professional training of the coaches engaged at functioning of the CeHI centers in Lebanon and Egypt such as various stakeholders, including non-academics from the health sector, pharmaceutical companies, ministry of health, pharmacists, etc.

The second objective was to provide capacity building measures for the CeHI centers staff involved at the activities in administrative, consultation, and technical support of E-Health projects/activities as well as KTERE web platform development and technical support in LE and EG.

Target groups of the 5 days TOT:

- (i) modules developers;
- (ii) lecturers & CeHI's staff;
- (iii) students and
- (iv) stakeholders.

Below the agenda for each meeting with the evaluation received from the participants.

The evaluation was made on a scale of 1 (very bad), 2 (mediocre), 3 (good), 4 (very good), 5 (excellent).

-----Day 1-----

Short bio of the presenters:

Dr. Mosad Zineldin

Dr. Mosad Zineldin is a Professor at Faculty of Health and Life Sciences-Department of Medicine and Optometry. He has a multidisciplinary background in Health Science, Psychology, sexology, medical, psychiatry studies, etc. His Major research interest was/is about how to reduce medical errors, improve medical and healthcare quality and increase patient safety. He is working at Linnaeus University-Sweden for 15 years and taught at Stockholm University for many years. His latest major research interests and publications are on Cognitive and Brain Reserve Interventions to reduce the risk of Dementia; Preventive medicine and Divorce on Physical and Mental Health; Brain Arteriovenous Malformations (BAVMs) and Endovascular Catheter Embolization; e-health and digitalization of medical and health education. Has held many visiting professor appointments in several countries at many high ranked Universities such as George Town University in USA, Beijing Normal University and Shanghai Universities in China and Universities in France, Italy, Netherlands, etc. He is International Expert in university accreditation and establishing of higher education quality assurance systems.

Dr. Jelena Mazaj

PhD in Economics and Statistics, University of Palermo (IT), topic – Networks for Sustainable Innovations
Master of Knowledge Management, Vilnius Gediminas Technical University (LT)

Over 15 years of her professional experience combines research, training, administrative work and consultancies on capacity building and knowledge management for higher education institutions, R&I networks for innovations, responsible research and innovation and non-formal education. Her expertise in the sector covers responsibilities as a lecturer, international relations' officer, project coordinator and local expert for study/mobility projects. Currently, she runs responsibilities of the HE&R Coordinator of the one largest NGOs in Italy. She coordinates research under the topics: sustainable innovation, digital learning, capacity building for HEIs, resilience, internationalisation, STEM and others. Her recent research works concentrate on the analysis of the impact of the exogenous factors on the organisational performance, for example: the EU policy impact on the EU R&I inter-organisational network dynamics; COVID-19'S impact on EU R&I Healthcare Public Private-Partnerships; The World of Changes: COVID-19's impact on retail - the Path towards Sustainability (book chapter for Springer in collaboration with Bocconi University). She is a member of: Società Italiana di Management, Accademia Italiana di Economia Aziendale and International Sustainable Development Research Society, an author/co-author of over 10 scientific publications and contributor more than 15 project deliverables.

Mr. Giovanni Barbieri

Giovanni Barbieri has developed a deep knowledge in the fields of education and integration, due to his work experience in the International and European cooperation sectors. He has contributed to the management and promotion of intercultural dialogue between EU and non-EU countries through the project Game For EuroMed – GEM (Anna Lindh Foundation). Moreover, he has improved his experience in the field of education, integration, cultural and health projects. Indeed, Giovanni has implemented “POLYGLOT project – Multilingual education in preschool age” (Unit school – KA2 strategic partnership) and he is implementing “Giovani Parlano con L'Europa” project (Department of Youth and National Civic Service – Presidency of the Council of Ministers). Moreover, he is coordinating “SOFIE – Support for empowerment and integration of refugee families” (Unit migration – KA2 strategic partnership); “Vitality Intervention for Migrants – VIM” (Unit migration – KA2 strategic partnership); “Health Points – A game based approach for Health Promotion” (Unit adult – KA2 strategic partnership). Giovanni is also the coordinator of the KA3 project GEM IN which aims to foster social inclusion and new educational methods using the learning by playing approach. Giovanni has strong relationship and communication skills, task-oriented approach and process monitoring knowledge. He has a master's Degree in International studies and diplomacy.

Ms. Alessia Valenti

Alessia Valenti is Digital Educational Technologies Expert within the Higher Education and Research Unit of CESIE. She has more than 10 years of experience with European-funded projects and since 2017 she has been working in CESIE as Project Manager, working to facilitate the effective use of technology in educational and instructional projects. She acquired expertise in incorporating technology and innovation into education, demonstrating ability to develop content for learning solutions for digital delivery modalities based on audience learning styles and course content to ensure engagement and knowledge retention. Through her work, she conducts assessment and analysis of the proposed areas of needs, identify appropriate training media and methodologies and create recommendations to better collaborate with

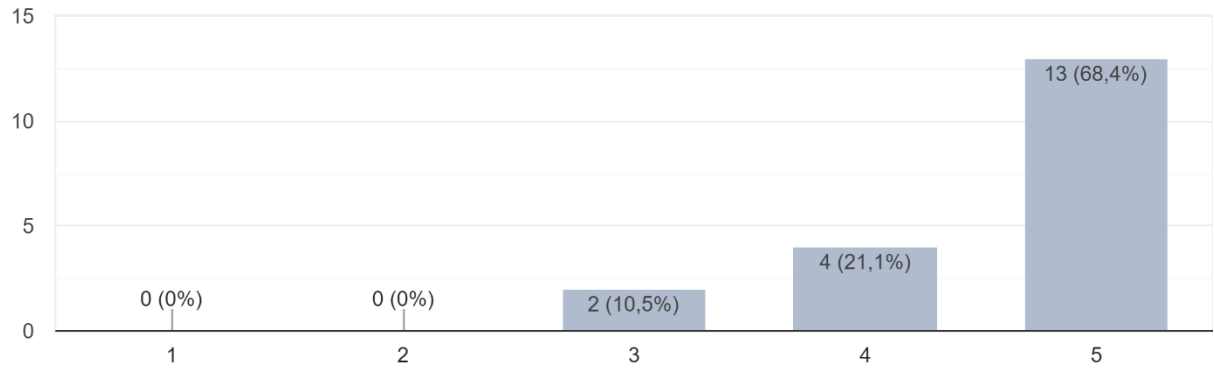
educational and ICT teams to improve learning contents and environments and meet the objectives and goals of the training. Her workflow also includes developing KPI and measurement tools and activities to assess the impact and effectiveness of learning activities. She is experienced in instructional design methodologies and e-learning, having familiarity with main learning management systems and tools and knowledge of usability best practices. Her strong conceptualization ability, strong visual communication ability as well as understanding of the basics of user experience design and knowledge of gamification are definitely an asset

Time (CET)	Activity	Description of the activity	Learning outcomes:
9.40 – 10.00	Presentation of the ICU RERE project and team of the capacity building	<ul style="list-style-type: none"> - 9.40- 9.45 Prof. Mosad Zineldin Grant holder - 9.45- 9.50 Prof. Bassem K., Leader of the WP - 9.50- 10.00 Giovanni Barbieri and Jelena Mazaj, CESIE co-leader and host of the workshop 	<ul style="list-style-type: none"> - Presentation of the project - Presentation of the team - Knowledge of the programme
10.00 – 11.00	Presentation of the e-health system in Italy.	<p>Presentation of how the e-health system works in Italy. Which are the main results achieved and future goals.</p> <p>By Mr. Giovanni Barbieri</p>	<ul style="list-style-type: none"> - Knowledge of the Italian e-health system
11.00 – 12.15	<p>ICT in education</p> <ul style="list-style-type: none"> - Why should we use ICT in university teaching? - Digital Education and E-learning - Examples and Use Cases of universities / organisations using ICT for education <p>Hands On working with few tools which can be used in universities</p>	<p>Nowadays there is a growing trend towards integrating ICT into teaching and training. New technologies offer to teachers and education staff a wide new range of possibilities and tools. This activity will give you an outlook on best practices and concrete ways to use ICT to empower and support education.</p> <p>By Ms. Alessia Valenti</p>	<ul style="list-style-type: none"> - Get a new perspective on ICT tools - Understanding ICT / Digital education culture in university - Reflect on a possible incorporation of ICT tools in everyday teaching
12.15 – 13.00	Vulnerable groups and access to health systems through technology	<p>Presentation of three EU practices:</p> <ul style="list-style-type: none"> - Health points - Life & Health - SOFIE <p>By Mr. Giovanni Barbieri</p>	<p>Understanding of different approaches to work with vulnerable groups of society (migrants, adults with low level of alphabetization, etc.)</p> <ul style="list-style-type: none"> - Learning new tools to support health among vulnerable people - Increasing awareness of the benefits and importance of health prevention -
Online evaluation of the Day1			

Evaluation of day 1:

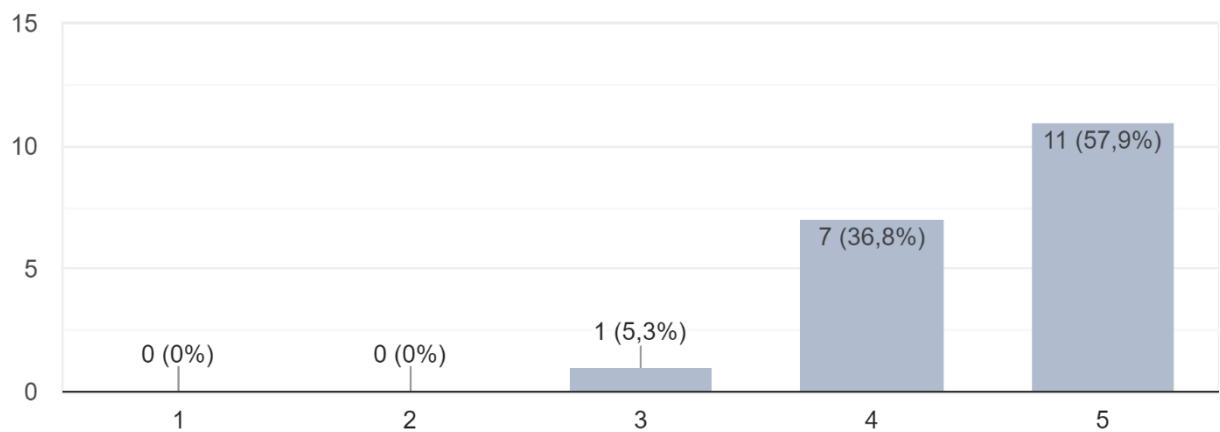
The purpose / scope of the conference is clearly presented.

19 risposte



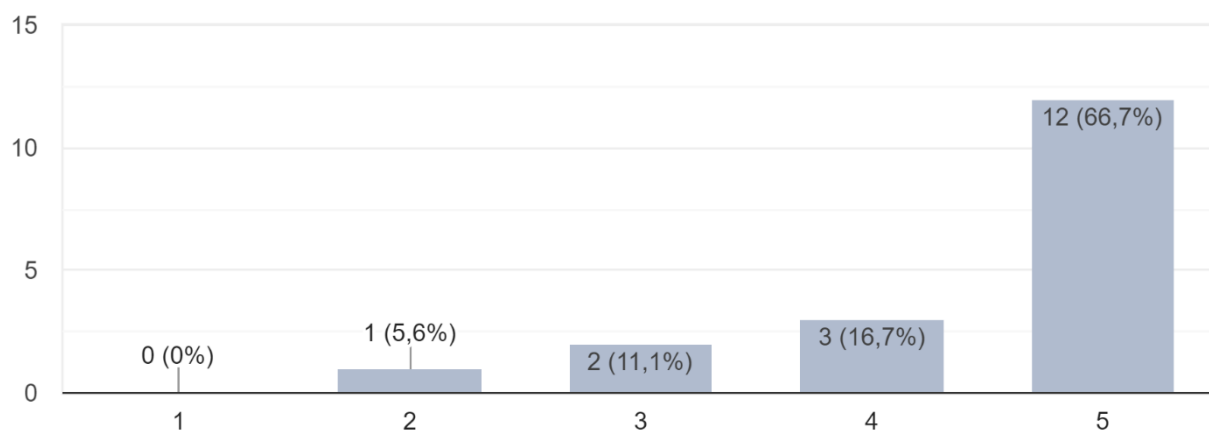
The topics presented are interesting

19 risposte



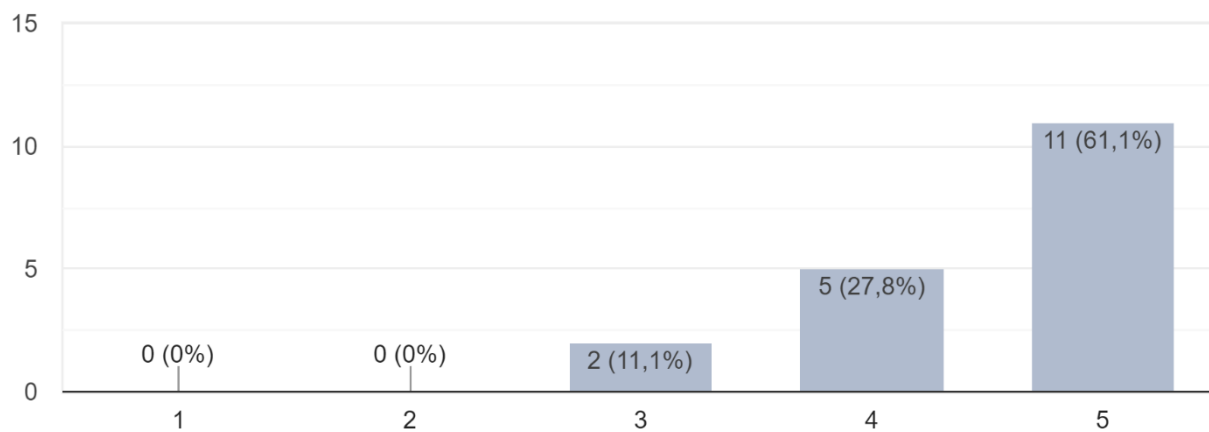
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18 risposte



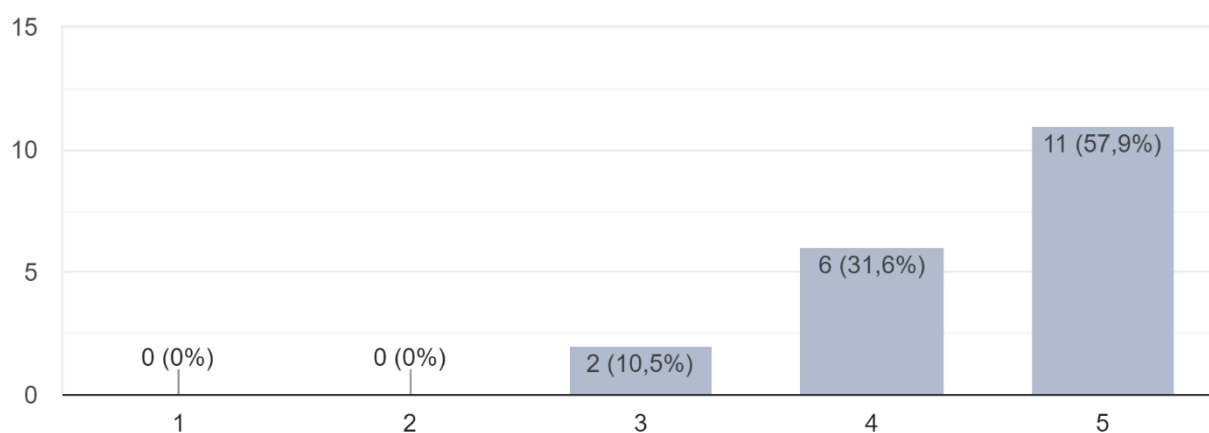
The presentations are well-designed and easy to use, encouraging knowledge.

18 risposte



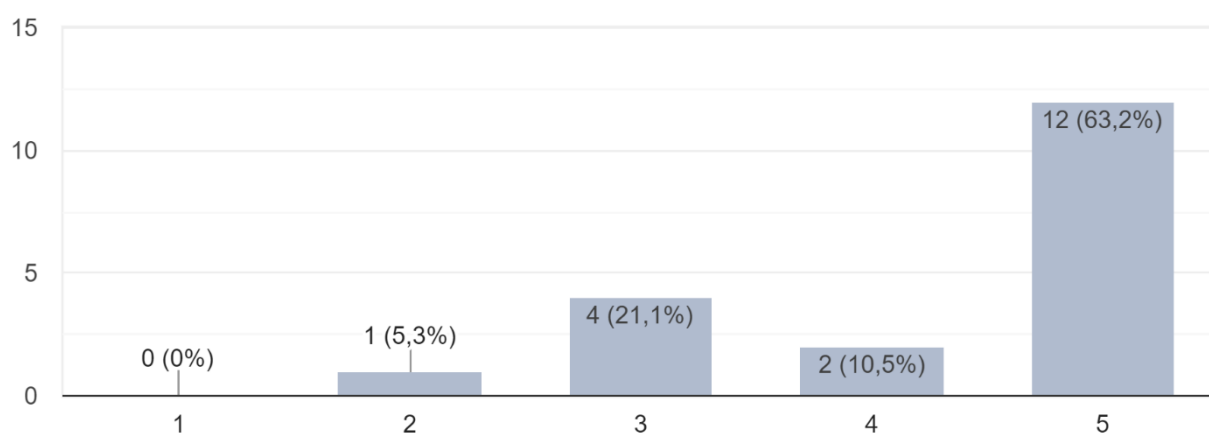
The information provided is clear

19 risposte



The duration, timing and frequency of the 5 days Capacity Building training is well structured

19 risposte



Analysis of the answers

The first meeting session can be assessed as highly positive. The meeting consisted of a presentation of the project, the TOT activities and its training objectives. In addition, the following topics were covered

- Presentation of the e-health system in Italy.
- ICT in education

- Vulnerable groups and access to health systems through technology.

About 90% of the participants stated that the course was presented clearly as well as the topics covered and the information given during this first session.

Furthermore, about 88% of the participants stated that the session held was characterised by well-structured information that encouraged learning and the dissemination of knowledge.

Finally, about 70% of the participants gave positive marks to the duration, timing and frequency of the TOT meetings.

Day 2

Short bio of the presenter:

Mr. Alberto Provenzano

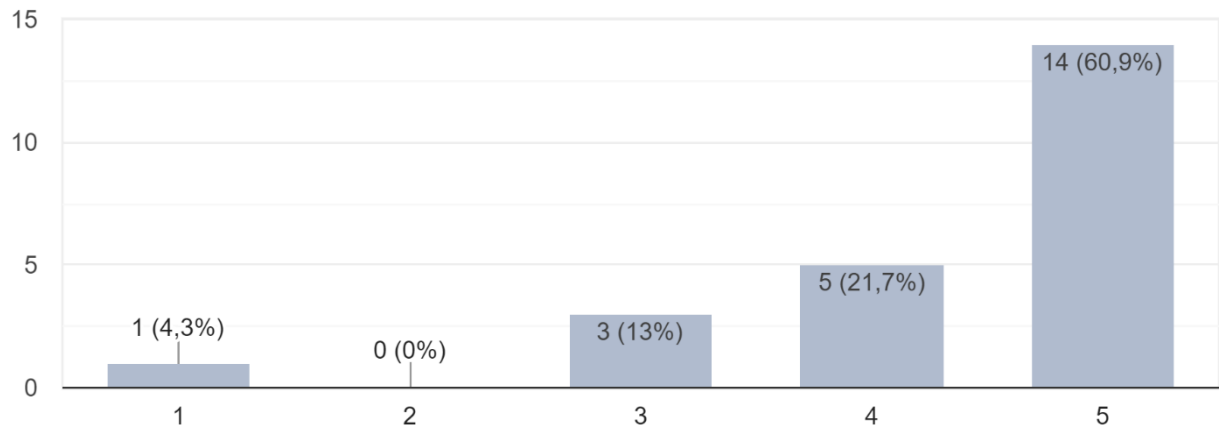
Alberto Provenzano is ICT technician and graphic designer at CESIE, he manages the visual image of CESIE, moreover he is responsible for dissemination and exploitation of different international, European and local projects' results. He has competences and skills in social media management, development of online tools (e-learning programmes, websites, online surveys, platforms, etc.), and data management in response to ethical issues and protection of personal data.

Time (CET)	Activity	Description of the activity	Learning outcomes:
10.00-12.00 Mr. Alberto Provenzano	The importance of data protection in the context of e-learning	During this session the importance of data protection regulations in online learning will be analysed	<ul style="list-style-type: none">- Knowledge of data protection regulations- Analysis of online platforms and data protection- Insight into the challenges that digitisation poses for the legal environment.
12.00 – 13.00 Mr. Alberto Provenzano	e-health Platform	Presentation of different e-health platforms, comparison and analysis	<ul style="list-style-type: none">- Understanding of different models of e-health platforms
Online evaluation of the Day2			

Evaluation of day 2:

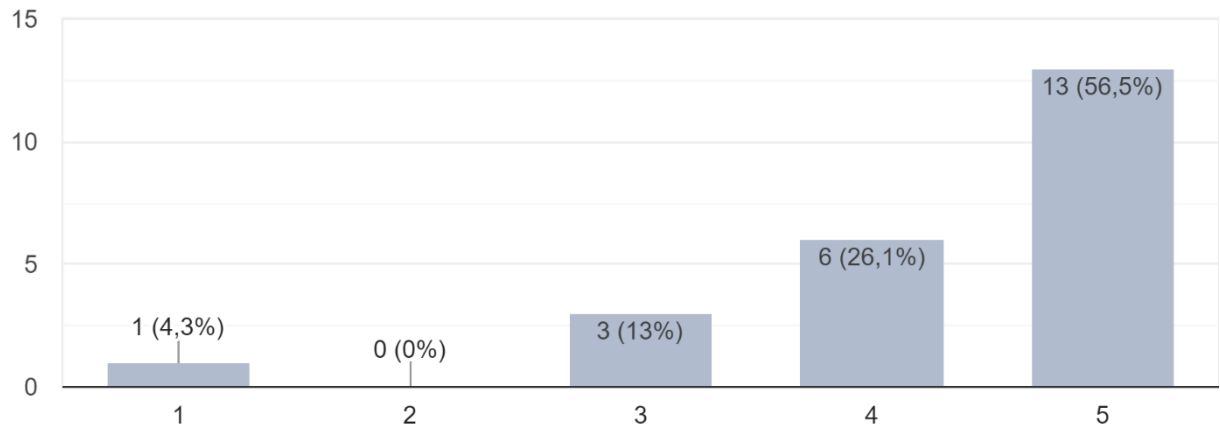
The purpose / scope of the conference is clearly presented.

23 risposte



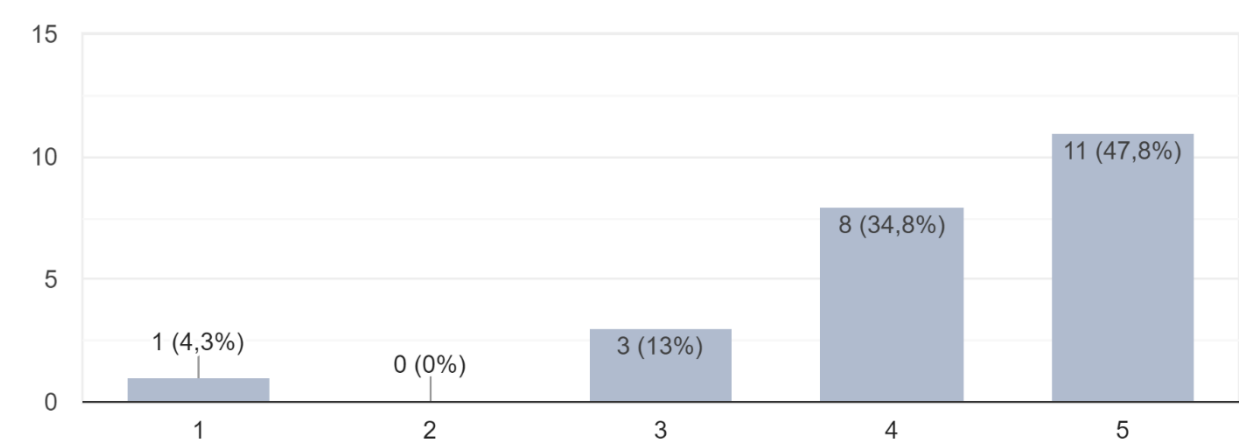
The topics presented are interesting

23 risposte



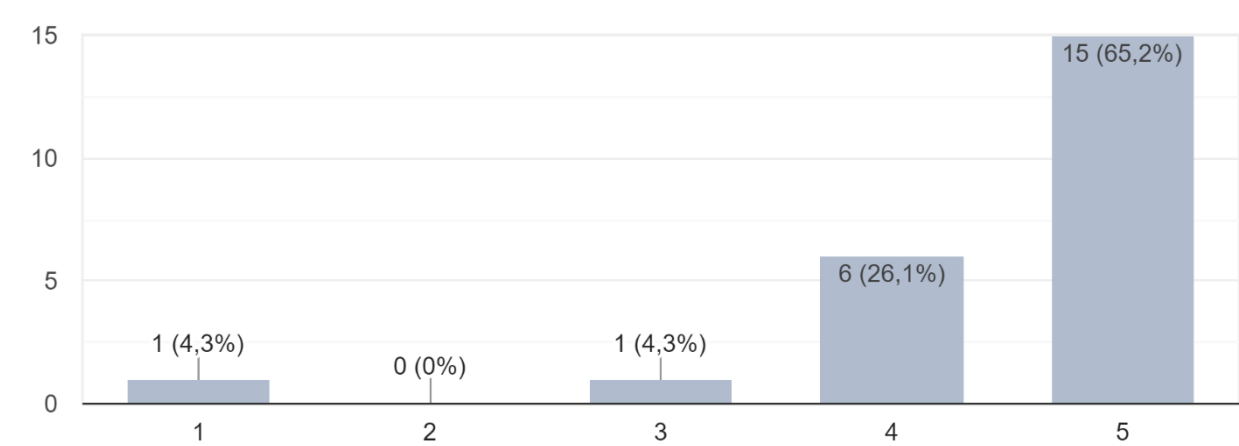
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23 risposte



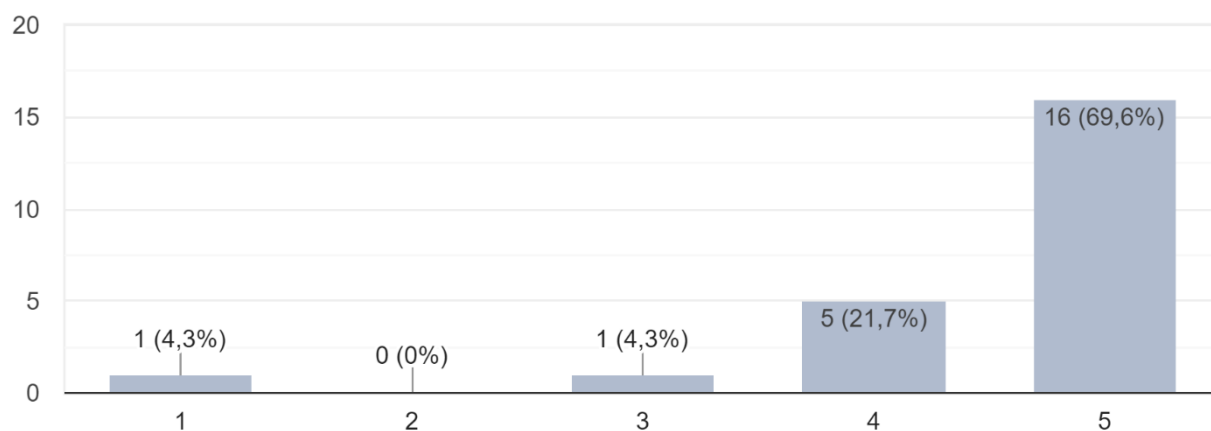
The presentations are well-designed and easy to use, encouraging knowledge.

23 risposte



The information provided is clear

23 risposte



Analysis of the answers

During the second meeting, the following topics were presented:

- The importance of data protection in the context of e-learning
- e-health Platform

The session was very well attended by those who participated. The evaluations of this session are positive and indicate the good work done.

About 80% said the topics covered during this session were interesting and about 90% of the participants said the information given was clear and structured in a way that promoted knowledge and learning.

Anche durante questo incontro le valutazioni generali sono positive.

Short bio of the presenter:

Dr. Liliana Barbieri

PhD in Biomedical Imaging, University of Oxford (UK), topic “Quantitative biophysical methods to study immune cell mechanobiology”.

After graduating in Physics at the University of Palermo (IT), she did a Master in Biophysics between the University of Palermo and the Université Joseph Fourier (Grenoble, France) funded by the ERASMUS traineeship programme. During her Master, she worked on the mechanisms of DNA repair in bacteria using the single molecule localisation fluorescence microscopy techniques.

Next, she obtained an EPSRC fellowship and moved to Oxford to unveiling biomechanical phenomena of biological systems in health and disease using a diverse range of microscopy and image analysis techniques. To achieve this, she developed new super-resolution traction force microscopy methods that can, for the first time, detect and quantify small and fast forces exerted by the immune cells. Furthermore, she developed new automated platforms for robust readouts of immune cell activation by combining light sheet microscopy with image analysis and machine learning based software.

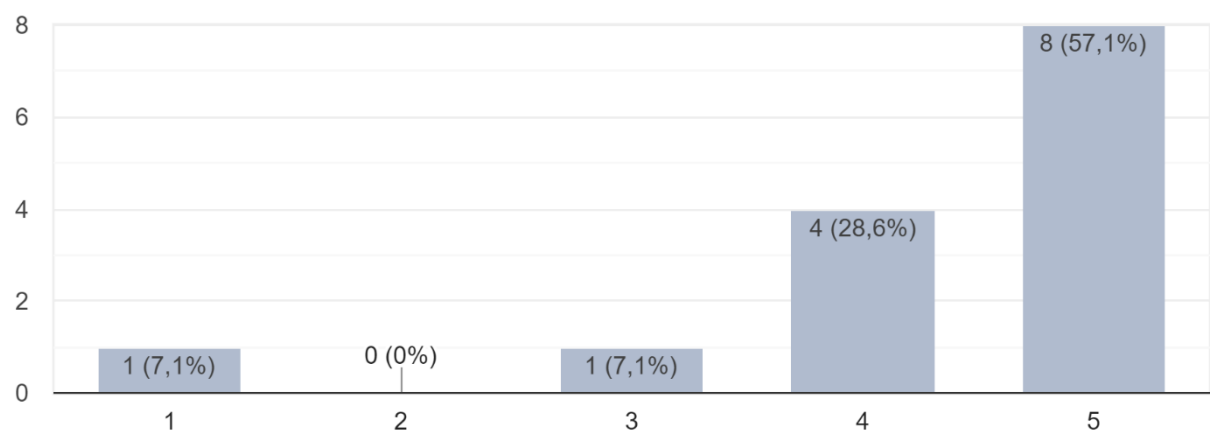
Her expertise is in fluorescence microscopy, super-resolution microscopy, imaging, data analysis, technology and software development, wet lab work with cell lines and primary cells. She supervised master and PhD students, she coordinated multiple projects and collaborated with the Nobel laureate Eric Betzig at Janelia Research Campus of the Howard Hughes Medical Institute (Ashburn, Virginia) and Prof. Dong Li at the National Laboratory of Biomacromolecules (Beijing, China). Her research contribution ranges from talks to papers published in peer reviewed journals.

Time (CET)	Activity	Description of the activity	Learning outcomes:
10.00-12.00	Imaging techniques, advanced diagnostics, medical devices and mini-invasiveness	Use of artificial intelligence techniques for data exchange for research purposes, clinical, imaging, microscopy, and laboratory data management.	<ul style="list-style-type: none"> • Understanding new advanced diagnostic tools • Analysis of how technology can support medical interventions • Knowledge of the impact of artificial intelligence in the research field
12.00 – 13.00	Practical application of the existing tools for health	Presentation of existing and practical tools and devices for health monitoring and investigation.	<ul style="list-style-type: none"> • Knowledge of practical tools & devices for health monitoring and investigation.
Online evaluation of the Day3			

Evaluation of day 3:

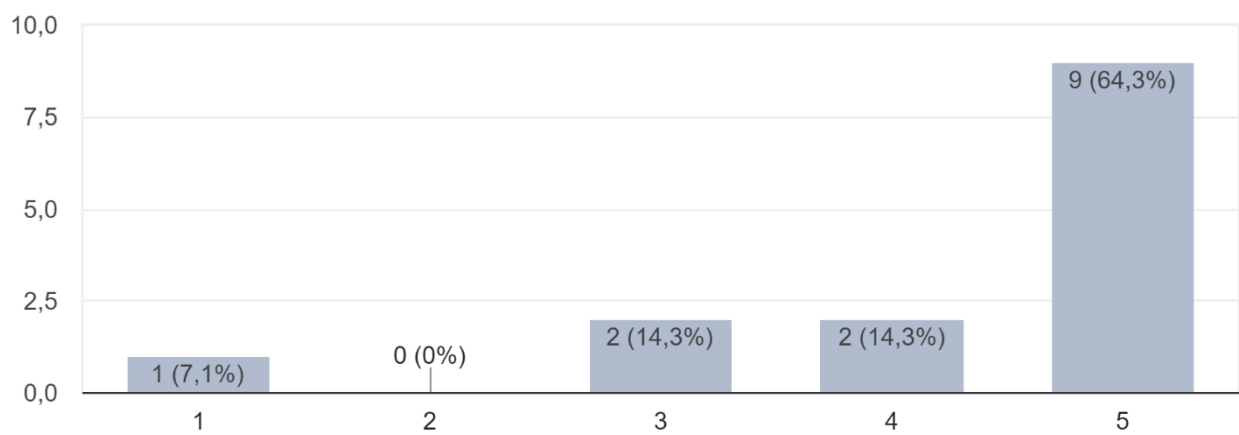
The purpose / scope of the conference is clearly presented.

14 risposte



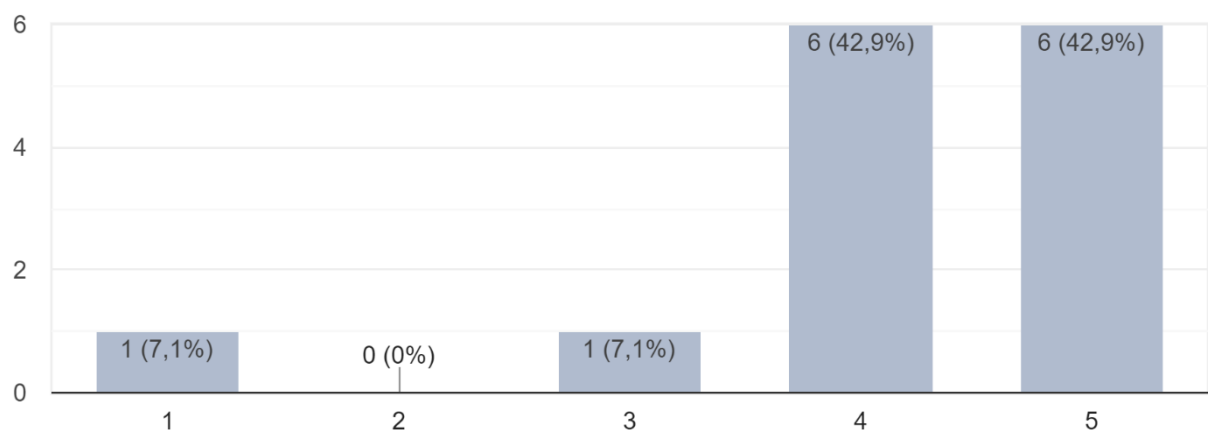
The topics presented are interested

14 risposte



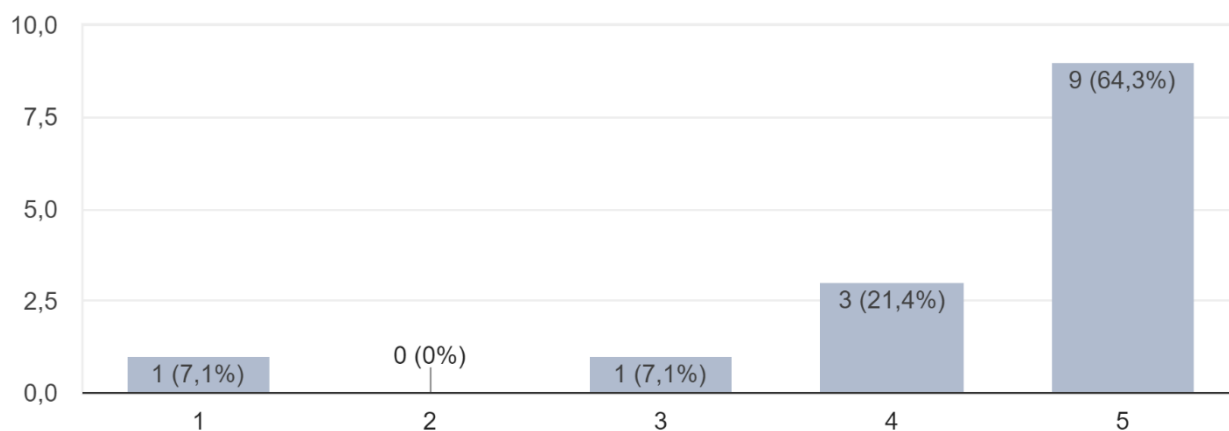
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14 risposte



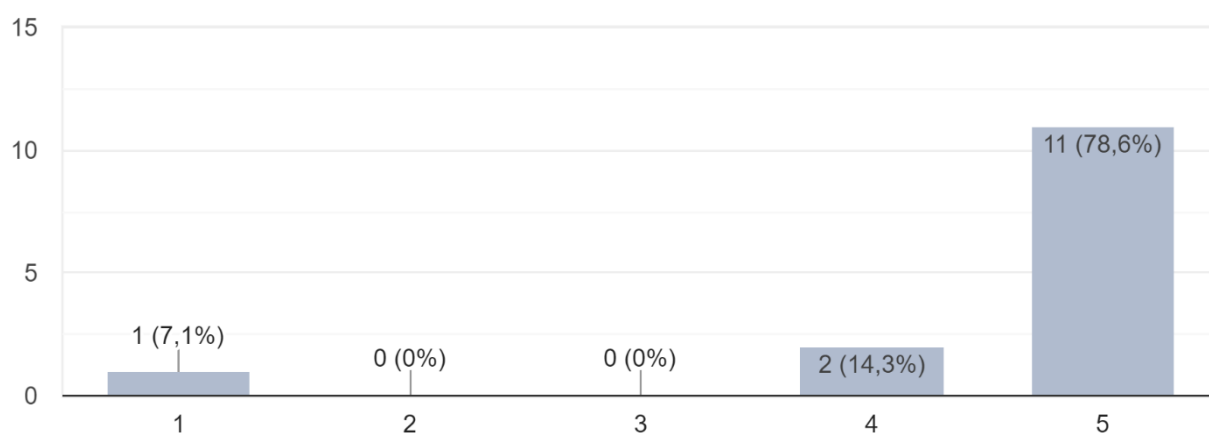
The presentations are well-designed and easy to use, encouraging knowledge.

14 risposte



The information provided is clear

14 risposte



Analysis of the answers

The third day of the capacity building TOT meeting of the ICU RERE project received satisfactory and positive evaluations from the participants.

84% of the participants stated that the information given was comprehensive and about 75% stated that the information given was useful.

Furthermore, about 90% of the participants stated that the session was clear and therefore well presented.

During this meeting the following topics were presented:

- Imaging techniques, advanced diagnostics, medical devices and mini-invasiveness
- Practical application of the existing tools for health

Day 4

Short bio of the presenter:

Dr. Silvia Galiani

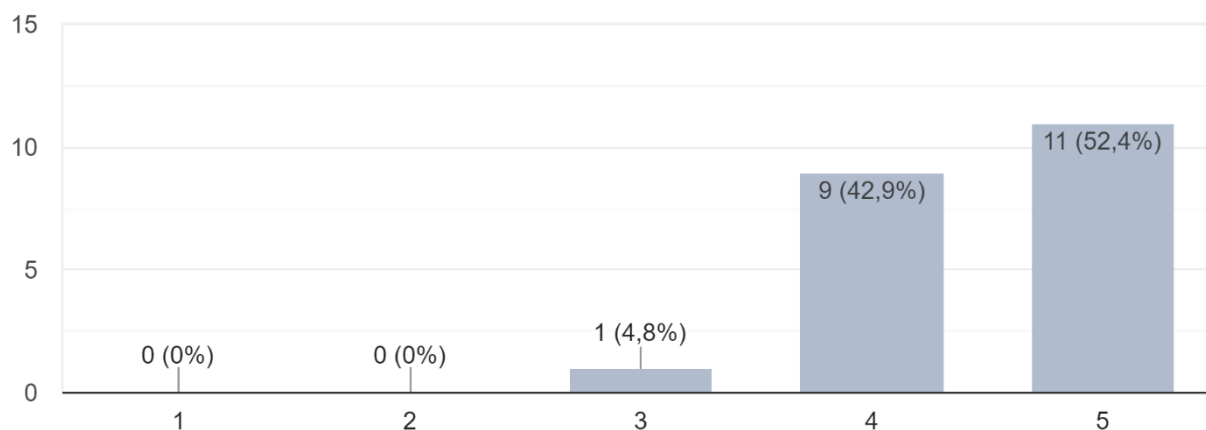
Advanced expertise in design, development and optimisation of custom made optical microscopes. Advanced expertise in optical microscopy and super-resolution fluorescence microscopy techniques: widefield microscopy, confocal microscopy, two photon excitation microscopy, STED (STimulate Emission Depletion) nanoscopy, RESOLFT (REversible Saturable Optical Fluorescence Transitions) nanoscopy, FCS (Fluorescence Correlation Spectroscopy) and STED-FCS. Both on commercial and custom made microscopes. Responsible for the establishment and maintenance of the optical laboratory in the Nano-immunology group, MRC Human Immunology Unit (HIU), Weatherall Institute of Molecular Medicine, University of Oxford, United Kingdom. Responsible for microscopy and optics teaching to Postdocs and DPhil students, Nano-immunology group and Wolfson Imaging Centre, University of Oxford, United Kingdom.

<i>Time</i>	<i>Activity</i>	<i>Description of the activity</i>	Learning outcomes:
10.00 – 13.00	Advanced microscopy techniques for biological and biomedical applications	This session deals with advanced microscopy techniques and their impact and development in biological and biomedical applications	<ul style="list-style-type: none"> - Knowledge of advanced microscopy techniques - Understanding the impact of microscopy techniques for biological and biomedical applications
Online evaluation of the Day4			

Evaluation of day 4:

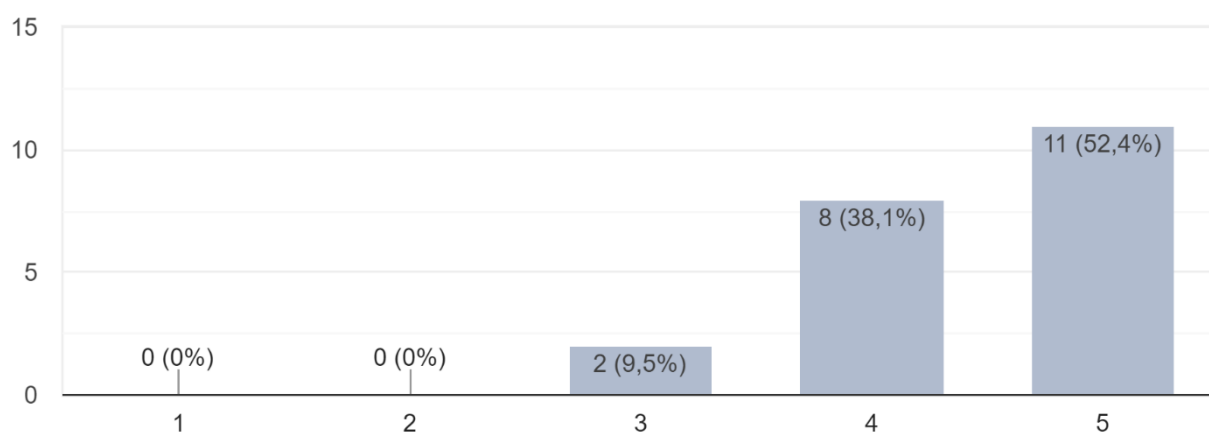
The purpose / scope of the conference is clearly presented.

21 risposte



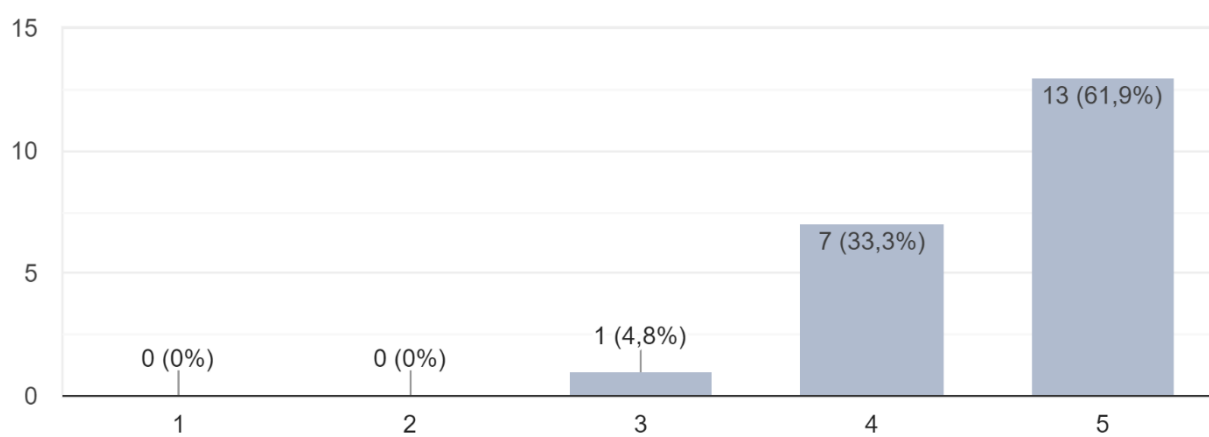
The topics presented are interested

21 risposte



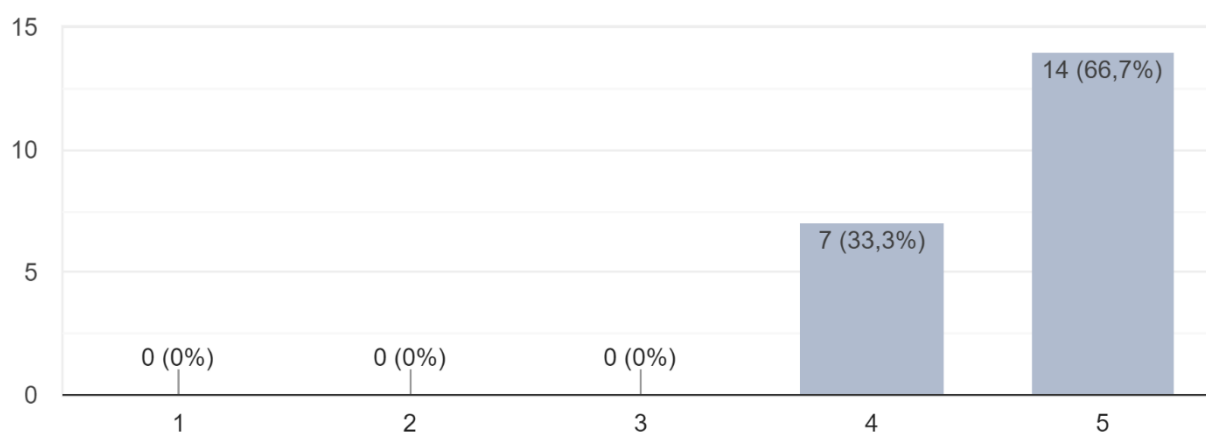
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21 risposte



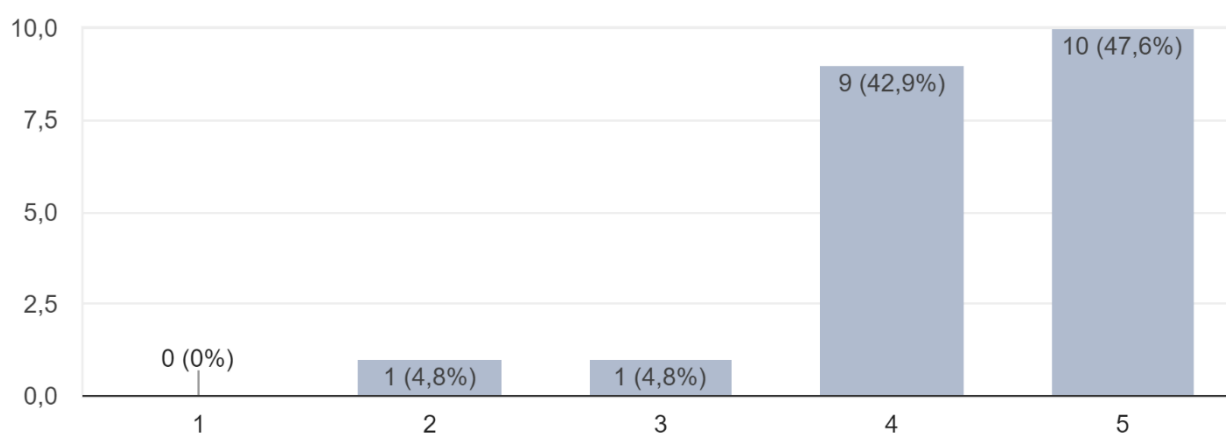
The presentations are well-designed and easy to use, encouraging knowledge.

21 risposte



The information provided is clear

21 risposte



Analysis of the answers

The fourth and penultimate capacity building meeting was once again characterised by a positive evaluation.

The meeting covered the following topic

- Advanced microscopy techniques for biological and biomedical applications.

The participants rated the meeting as extremely positive. In fact, about 90% of the participants stated that:

- The information given was clear and useful
- The presentations were well structured and facilitated learning and the acquisition of new knowledge.
- The information given was acknowledged as complete.

Short bio of the presenter:

Prof. Simona E. Rombo

Simona is Associate Professor at the Department of Mathematics and Computer Science of the University of Palermo (Palermo, Italy), where she started working as Tenured Assistant Professor since September 2012. Her main research activities focus on Bioinformatics, Big Data Analysis, Design and Analysis of Algorithms, Data Mining. She is author or co-author of above 60 publications on international journals and she is Principal Investigator of both national and international research projects in these fields. More recently, Simona has co-founded an innovative startup that is also spinoff of University of Palermo, located in Sicily, one of the most beautiful islands of the Mediterranean.

Simona E. Rombo was a Research Fellow at ICAR-CNR since July 2010 to September 2012, and at DEIS of Università della Calabria (Cosenza, Italy) since March 2006 to June 2010. In those years, she worked on biological network analysis (alignment and clustering), pattern discovery from biological sequences, compression and classification of digital images. She was visiting scientist at the College of Computing of Georgia Institute of Technology, where she worked on motif extraction and data compression. In collaboration with the Dipartimento di Matematica e Informatica of the Università degli Studi di Palermo, she contributed to the development of some packages for statistical indices computation included in the SeqAn Library for sequence analysis developed at the Institut für Informatik of the Freie Universität of Berlin. In March 2006, Simona E. Rombo concluded her PhD in "Ingegneria Informatica, Biomedica e delle Telecomunicazioni (Computer Sciences, Biomedicine and Telecommunications)"; the dissertation title is "Methods and Techniques in Bioinformatics Applied to Pattern Discovery and Protein Structure Prediction". During her doctoral studies, she was visiting scholar at the Computer Science Department of the Purdue University (West Lafayette, Indiana, USA), where she started working on motif extraction from digital images. On July 24, 2002, Simona E. Rombo obtained her Laurea degree in Electronic Engineering (summa cum laude), from the Università "Mediterranea" of Reggio Calabria. Simona E. Rombo got the diploma of scientific maturity at Liceo Scientifico Leonardo Da Vinci of Reggio Calabria with score 60/60 in July 1996. Simona E. Rombo was born in Reggio Calabria (Italy), where she grows up and studied.

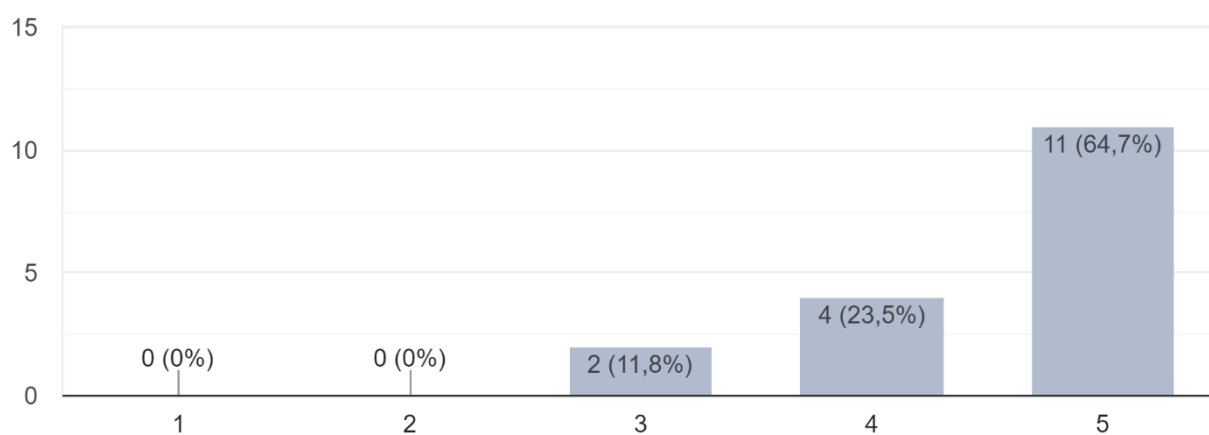
Time	Activity	Description of the activity	Learning outcomes:
10.00-12.00	Kazaam eHealth Platform	This session deals with Kazaam eHealth Platform, a microservice software platform for data analysis in the biomedical field. It supports the decision processes in the context of precision medicine to approach unmet clinical needs.	<ul style="list-style-type: none"> • Knowledge of KAZAAM eHealth Platform as case study. • Basics scientific knowledge: Biological Networks Analysis and the integration of “omics” data. • Showing how Big Data Analytics and Artificial Intelligence may be applied to provide decision support to doctors and healthcare professionals in the context of Precision Medicine.
12.00 – 12.45	Market and Business Overview	This session provides an overview on the general market of Precision Medicine and related technologies, with a special focus on Big Data and Bioinformatics. The positioning of Kazaam eHealth Platform in this market will be also discussed.	<ul style="list-style-type: none"> • The global market of Precision Medicine, segments, and major players. • Main competitors of Kazaam eHealth Platform on the market. • Business model.

12.45 – 12.50	Online evaluation of the Day5
12.50- 13.30	Conclusion and farewell by CESIE & LNU Prof. Mosad Zineldin

Evaluation of day 5:

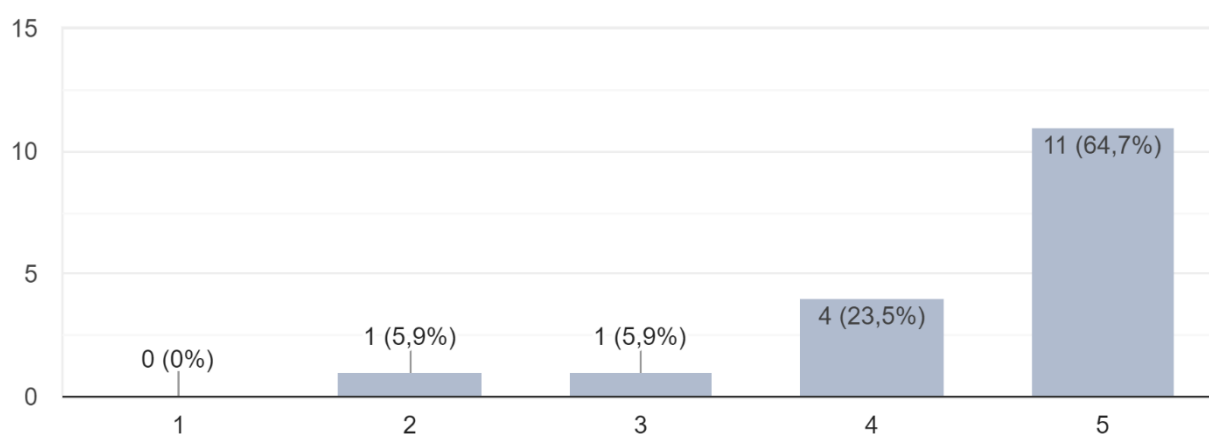
The purpose / scope of the conference is clearly presented.

17 risposte



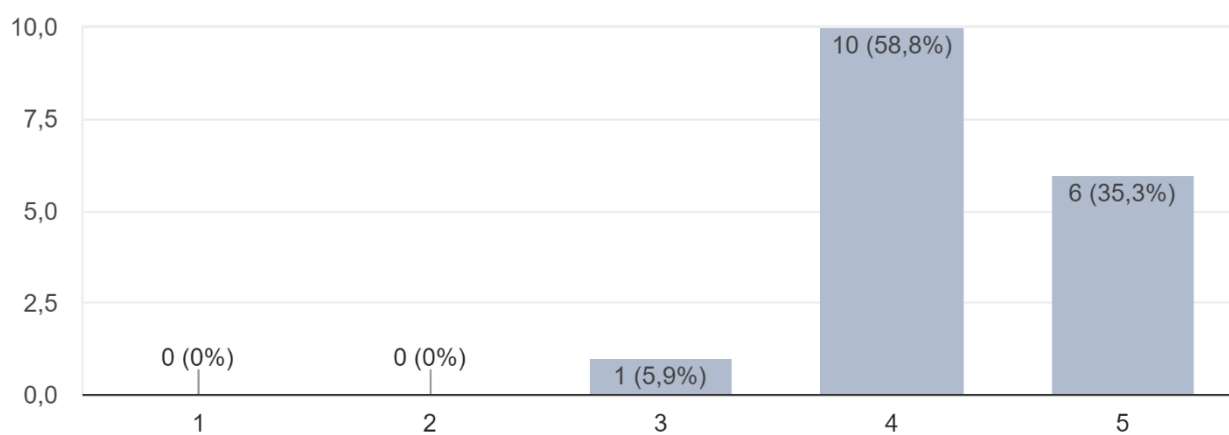
The topics presented are interested

17 risposte



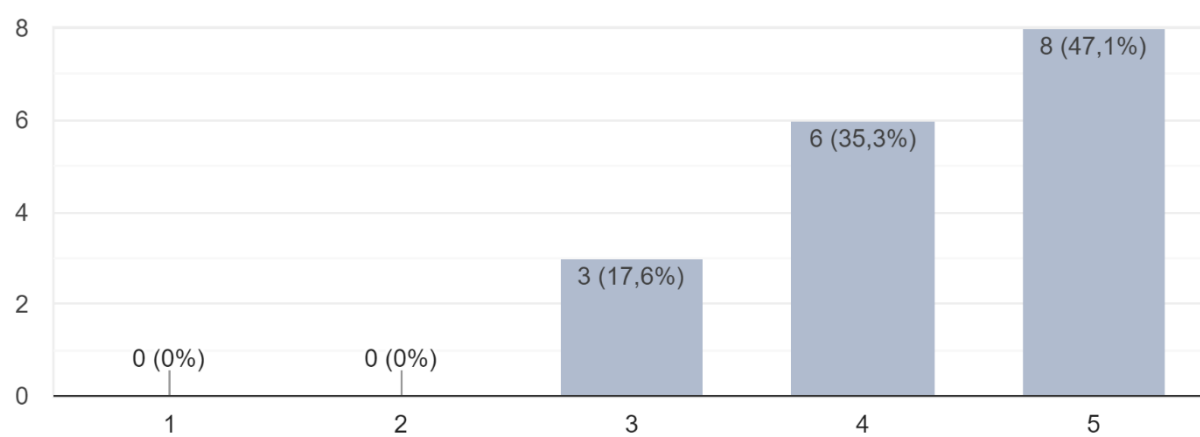
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17 risposte



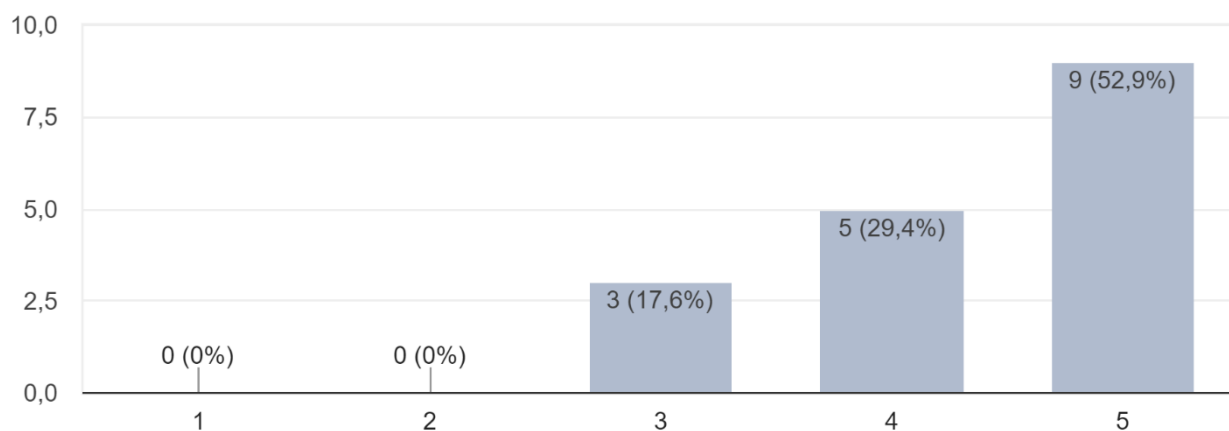
The presentations are well-designed and easy to use, encouraging knowledge.

17 risposte



The information provided is clear

17 risposte



Analysis of the answers

The last meeting was also characterised by highly positive evaluations of the topics covered:

- Kazaam eHealth Platform
- Market and Business Overview

About 80% of the participants rated the topics covered as interesting and more than 90% stated that the information given was comprehensive. In addition, more than 80% rated the presentation as positive, as it was structured in such a way as to promote learning and knowledge.

Lastly, more than 80% rated the information as clear.

Conclusion

The TOT event organised by CESIE was a success. The feedback received for each meeting was only highly positive, in fact on average more than 80% of the participants rated each session between very good and excellent.

In addition, the experts who were involved are from prestigious research institutions, such as Oxford University, Palermo University and CESIE with very high knowledge of the topic and technical skills.

The communication between the participants, the experts who held the meetings and CESIE was highly positive, thus ensuring the excellent relationship and exchange of good practices and contacts for future activities.

Below are some sentences that were left as comments by the participants and that testify to the excellent work done:

- Thank you for your efforts it's really appreciated meeting and we collected a many of information
- All is great
- Great lecture very inspiring
- I hope if there is a possibility to see a practical session while using the microscope, imaging process, analysis
- Thank you so much for this valuable lecture and I update my knowledge about different types of microscopes
- As a health gov stakeholder, today's sessions were all informative, interesting and useful. Thank you!