Erasmus + Programme - VET Strategic Partnership

IENE 10 Project

Preparing health and social care workers to work with socially assistive artificially intelligent robots in health and social care environments

2020-1-UK01-KA202-078802

Output no. 6.2

Report of the evaluation of the Massive Open Online Course (MOOC) "Transcultural Robotics Nursing"

Author: Victor Dudau, Edunet Organization

December 2022

Co-funded by the Erasmus+ Programme of the European Union

TABLE OF CONTENTS

INTRODUCTION

The Massive Open Online Course "Transcultural Robotic Nursing" was developed in the framework of the IENE 10 project, funded by Erasmus+ Programme of the European Union.

The MOOC course focused on transcultural robotic nursing and was based on the framework of the Training Model, TRN Curriculum and the learning materials created by the partners.

The IENE10 project and this MOOC are led by Middlesex University (UK) in collaboration with Edunet Association (RO); Cyprus University of Technology (CY); University of Genova (IT); the University of Bedfordshire (UK); and the Fachhochschule Vorarlberg GMBH (AT).

THE "TRANSCULTURAL ROBOTIC NURSING" MOOC

The MOOC was delivered over 5 weeks, from September 30th until November 4th, 2022.

The MOOC aimed to:

- Raise awareness about the potential advantages of AI and Socially Assistive Robots (SARs) in Health and Social Care (HSC)
- Provide knowledge and understanding about both negative and positive implications of AI and SARs in HSC
- Provide knowledge and understanding of the relevance of ethics related to the development and deployment of AI and TRN
- Enable the development of skills and knowledge of the practical aspects of deploying AI and TRN in HSC including robot/human interaction, technical aspects, malfunction, and infection control

The Course was organized in four Modules:

Module 1: Cultural Awareness

The first module made participants aware about personal culture and how it affects humans and their environment alike. There was also a first introduction into what 'AI' and 'robot' means, and where public conceptions about these topics might be wrong.

The module contained four learning units:

1.1 – Definitions, terminology and course orientation
1.2 – Need for AI and robotics
1.3 – Misconceptions and stereotypes about robots
1.4 – Cultural values, attitudes, views about SARs

Module 2: Cultural Knowledge

The second module introduced the term 'socially assistive robot" (SAR). It gave several examples of what these robots might look like and can('t) do. It also draws an arc back to human culture, as in where the robot has to adjust to its clients.

The four learning units were:

2.1 – Types and Uses of SARs in Health and Social Care
2.2 – Capabilities and potential 'role' of SARs
2.3 – Benefits and Challenges
2.4 – Cultural aspects of socially assistive robots

Module 3: Cultural Sensitivity

The third module goes deeper into how a robot can properly interact with humans. This includes understanding, what a human is intending to do and reacting in a way that the robot can influence the human. This has to be watched very closely as the affected people might be vulnerable. Again, the focus is drawn towards human cultural aspects and how the robot needs to be programmed, so it can have meaningful interactions.

The respective learning units were as follows:

3.1 – Communication
3.2 – Ethical and legal issues
3.3 – Working together
3.4 – Culturally sensitive and compassionate human-robot-companionship

Module 4: Cultural Competence

The fourth module deepens the theories which are necessary for successful human-robot-interaction. The first chapters elaborate the required abilities of the end-users and several safety aspects of care robots. Tightly woven into safety are patient rights (referencing back to ethical concerns) and how to prevent inequal treatments. Finally the ADORE approach/model is presented as an ideal instrument for SARs.

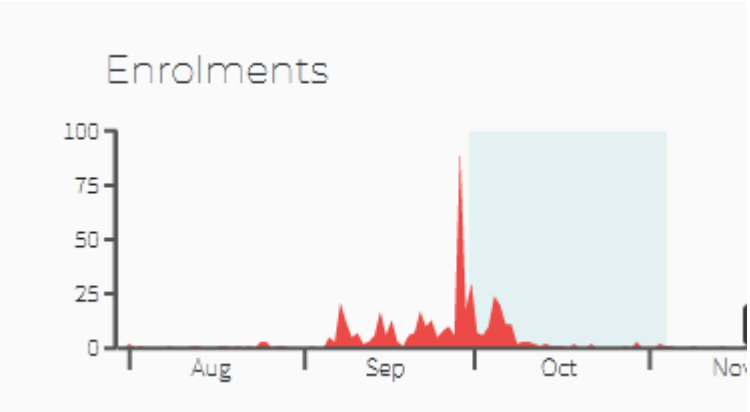
The necessary learning units were:

4.1 – Practical Skills
4.2 – Safety
4.3 – Rights and inequalities
4.4 – The ADORE approach/model

THE PARTICIPANTS

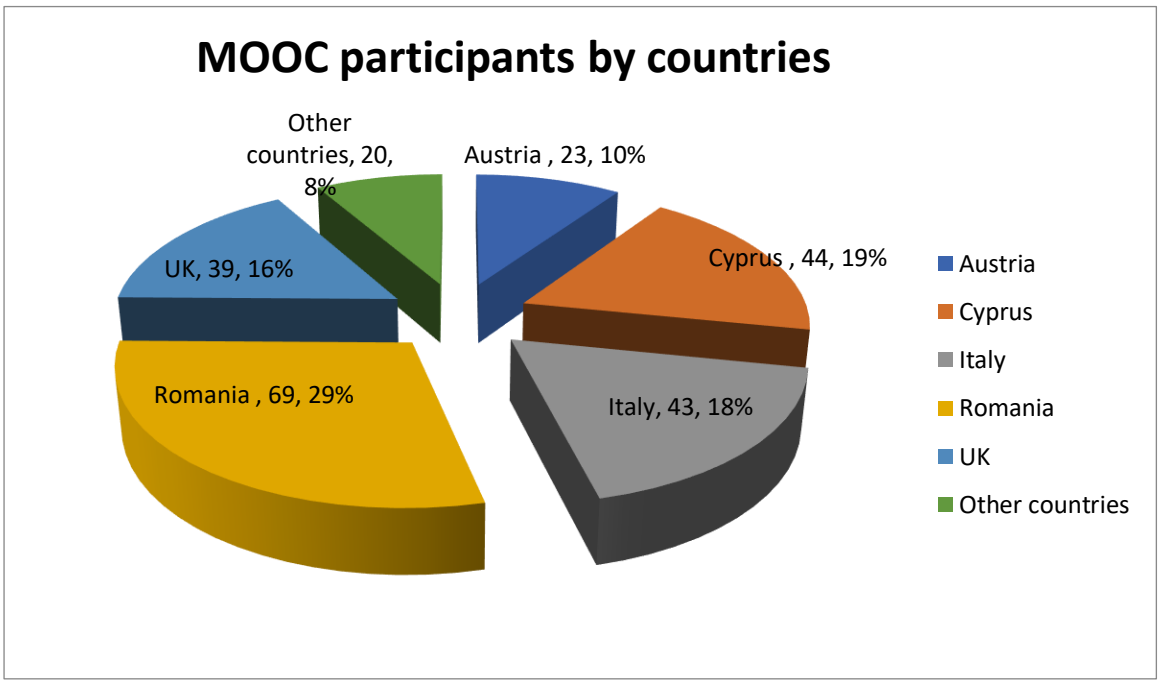
A number of 450 people enrolled the MOOC.

Most of the participants enrolled before the start of the course and in the first week. The highest number of people (92) enlisted on September 28. Some people registered also on the platform during the course.

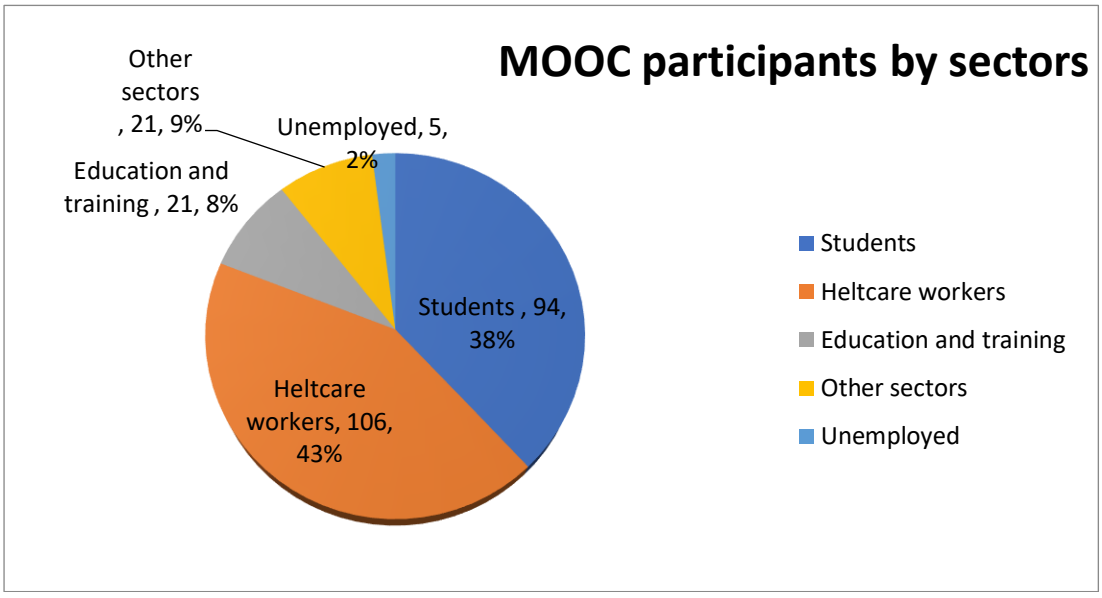


A number of 240 participants filled the pre-MOOC questionnaires.

The majority of them coming from the partners countries but also 20 from other countries : Philippines, Marocco, India, Colombia, Ireland, Hungary, China, The Czech Republic, Estonia, Spain, Germany, Portugal.



The majority of participants are working or preparing to be professionals in healthcare sector or education sectors.



The students profiles are: healthcare (45) , social care (3), robotics , engineering (6) and other specialities .

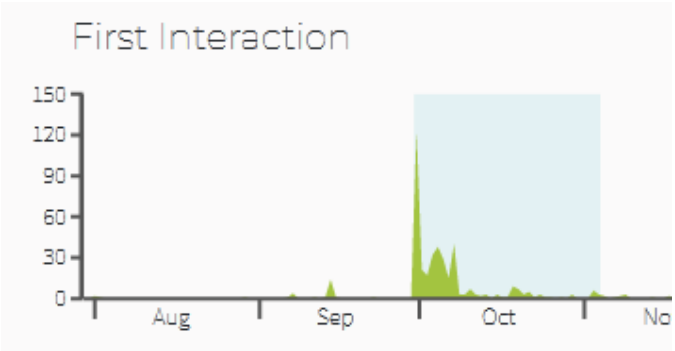
From the 240 participants who filled the pre-MOOC questionnaires, only 27 participants declared that they attended before a course on the topic of Robots in health or social care and 57 taken part in a MOOC in the past.

TRAINING ACTIVITIES ON THE MOOC

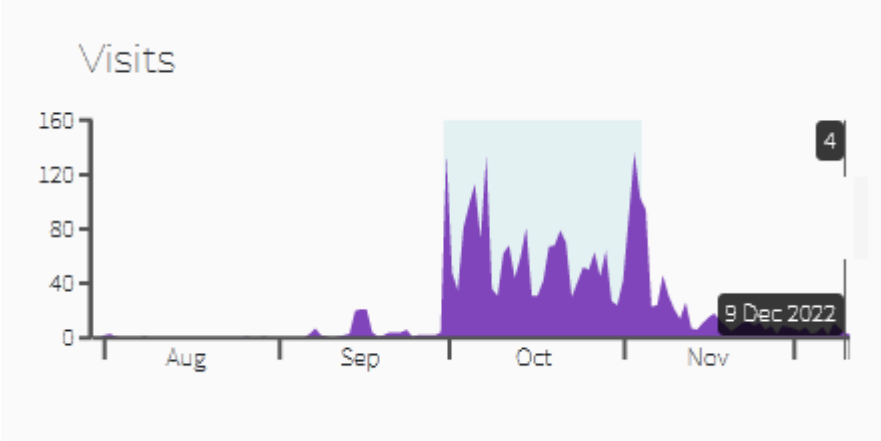
Each learning unit consisted of three components:

1. A learning activity which was completed by the participants on their own, usually involving text or video. The participants engaged with a different learning tool focusing on a specific aspect of TRN module.
2. An assessment activity which involved interactive elements between participants which was used to determine, what the participants learned and what they wanted to learn.
3. An evaluation activity by direct feedback to the trainers' team for further improvement of the content.

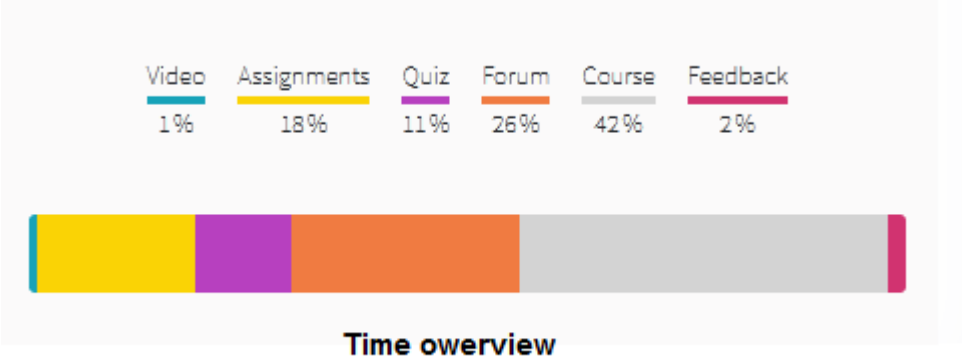
The first interaction with the course activities took place in the first week. Most of the participants (193) accessed first time the course content on September 30, the first day of the course.



The participants used intensively the platform during the period of the course, but continued even after the end of the course. The highest number of the visits were made in the first week and in the last week of the course .

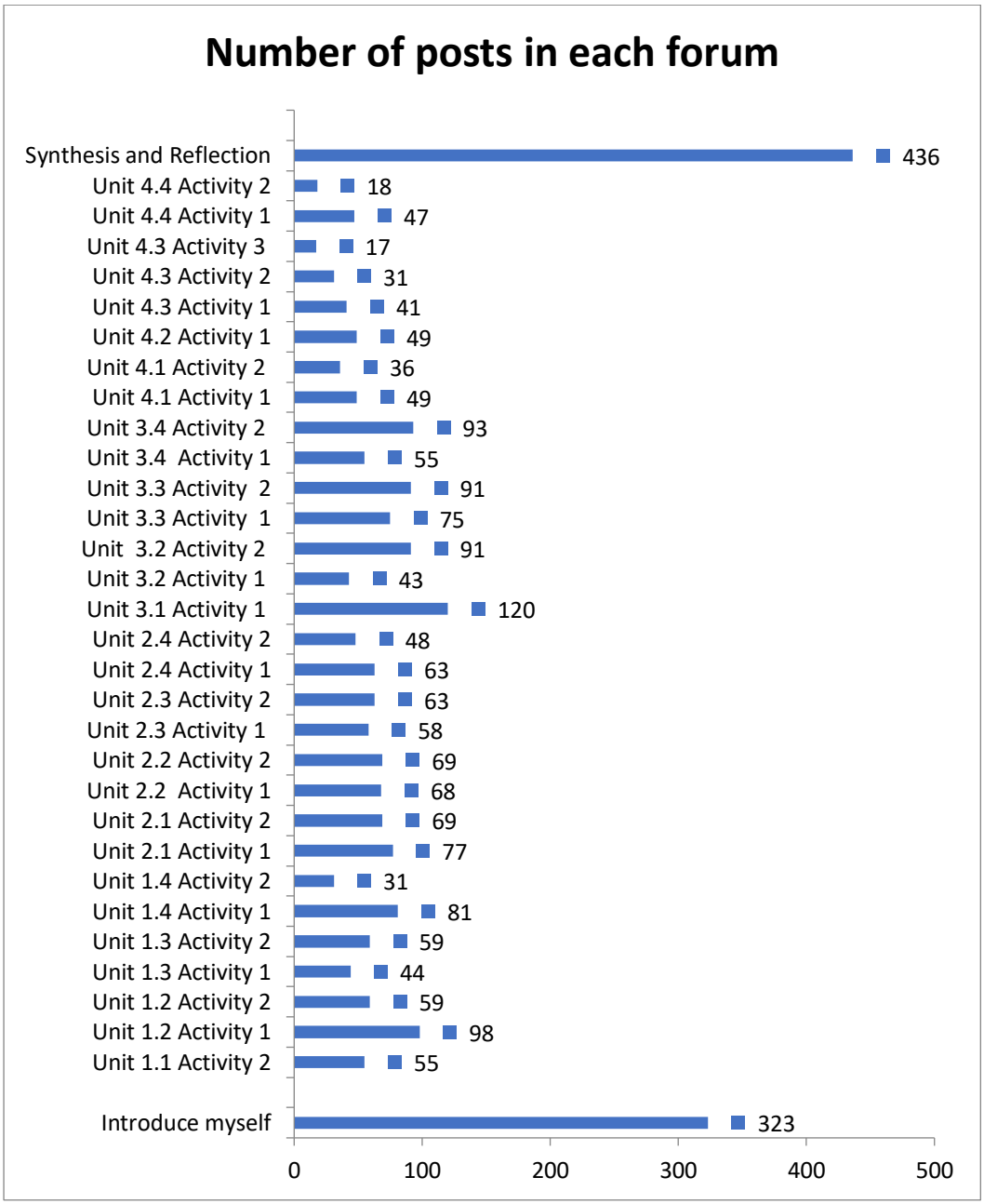


The MOOC was based on activities that are designed to enhance the participant's knowledge and skills and encourage interaction with other participants . Participants were encouraged to spend a minimum of one hour per day to either read a piece of literature or watch a short video, or listening to a podcast, following which they needed to complete an activity (either on their own or as a group).



A forum for each learning activity was created before the course started. The participants were encouraged to communicate on the Forum and share experiences. ,A forum for each language group was also created, as well as a forum for discussing the technical issues which was used by 11 participants who asked and received support from the facilitators. .

On every topic were engaged discussions with an average of 62 posts per forum.



The highest number or posts were on the forums Introduce myself (323) and final activity of Synthesis and Reflection (436).

The facilitators were available to help the participants and encourage them , in the spirit of the peer learning share their learning and opinions with others.

The MOOC facilitators awarded points for the contributions of the participants to the learning activities, for completing the activity of each day (individual learning), for participants reflections, for taking part in discussions or other group activities (collaborative learning) and providing feedback to members of the participants' groups as well.

ASSESSMENT OF THE PARTICIPANTS

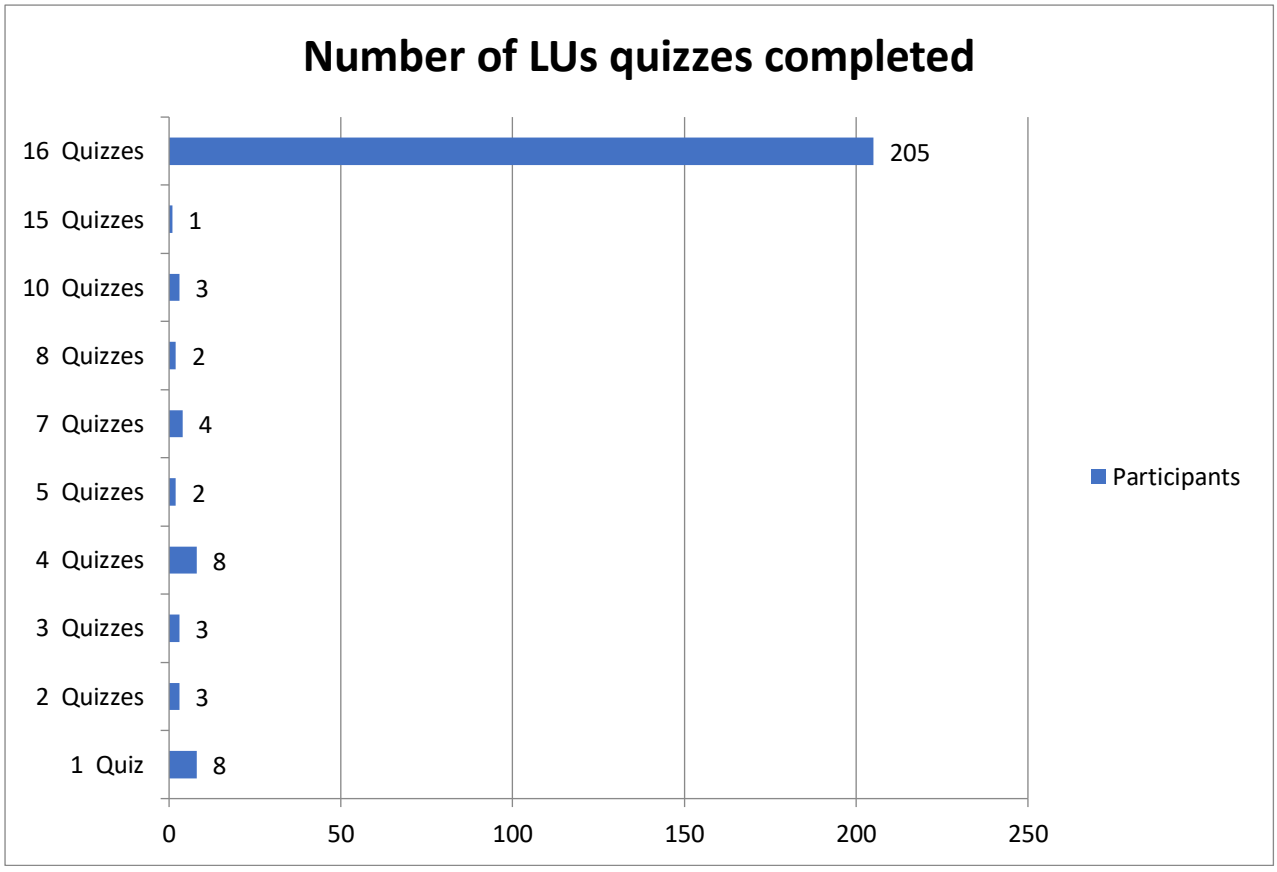
SELF- ADMINISTERED ASSESSMENT QUIZZES.

At the end of each Learning Unit (there were 4 LUs in every week) the participants completed assessment in the form of a quiz, focused on the information contained in the learning tools and course activities in that module *(Annex no.1*).

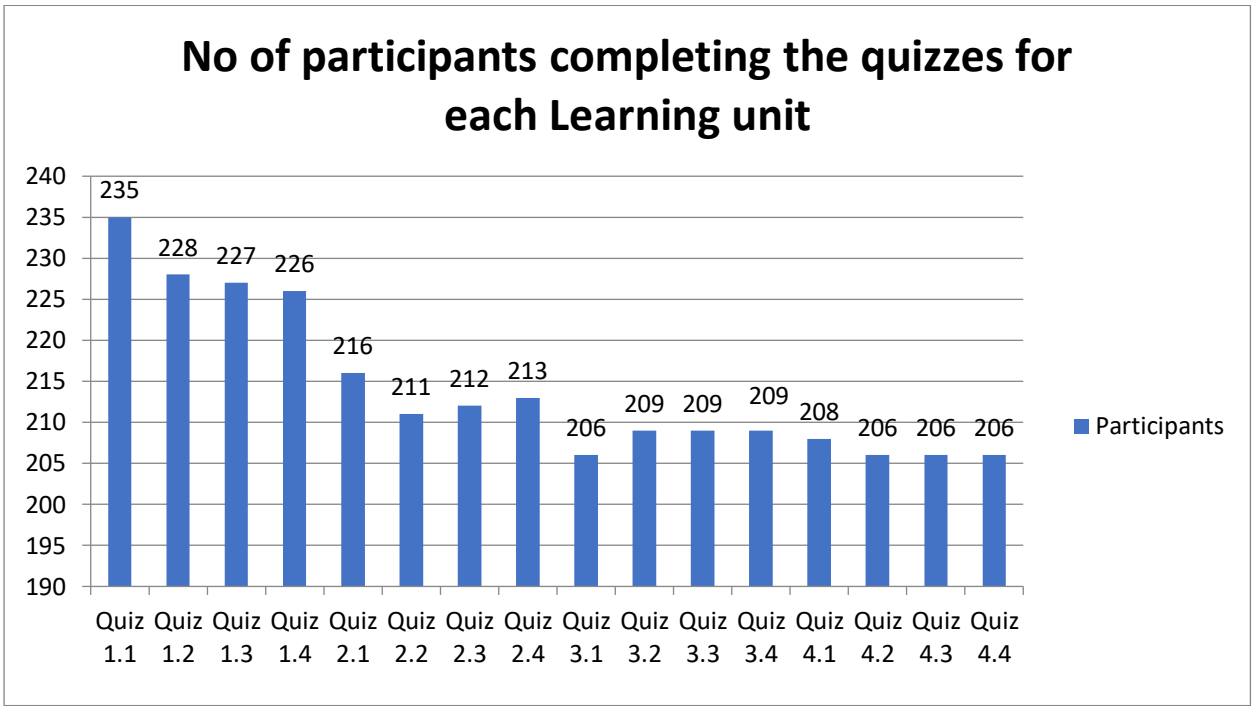
The quizzes were scored automatically, and the participant were notified whether they passed or failed the assessment. If they failed, they could retake the quiz.

There were 16 LUs quizzes.

From the 450 participants enrolled the MOOC, only 240 participants completed the LUs quizzes, from which **205 participants completed all the 16 quizzes** and 35 participants completed only some quizzes, as following.



Per Learning Unit , the number of participants who completed quizzes, were from 235 to 206, as following:



The higher number of participants completing the quizzes were in the first week (Module 1).

SUMMATIVE ASSESSMENT

The last week of the course was focused on bringing the previous content together, reflecting on it, and developing a post-MOOC plan of action particularly dissemination.

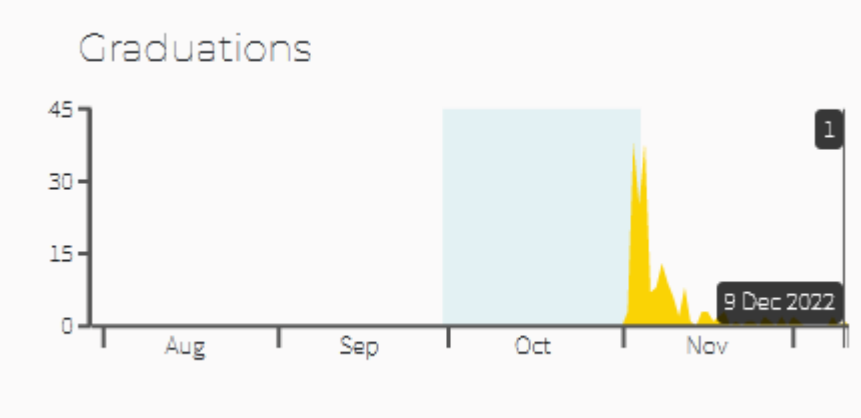
The summative assessment consisted in the production of a power point presentation or a word document which captured the essential elements of a participant's learning. More specifically the documents created and uploaded on the platform provided a reflection on the participant's MOOC journey and a plan of action on how their learning can be used and shared with colleagues, friends etc.

The MOOC facilitators assessed the participants' learning outcomes and graded the participants based on some learning activities such as accessing and reading relevant information, entries into discussion boards, blogs and so on as well as reflection on experience from practice and proposals for transference of new knowledge and skills to their workplace, and also identifying learning that has occurred and their future training needs.

The assessment was based on the following criteria:

- Completeness and comprehensiveness of all elements (reflections and plan of action);
- Creativity and innovation;
- Usability;
- Reflexivity.

A number of **191 participants submitted their Final Assessment** "Applying learning to practice". The majority of them sent the assignments between 30th October and 4th of November but also 17 of them sent the document after the course ended, from 5th of November to 9th of December.



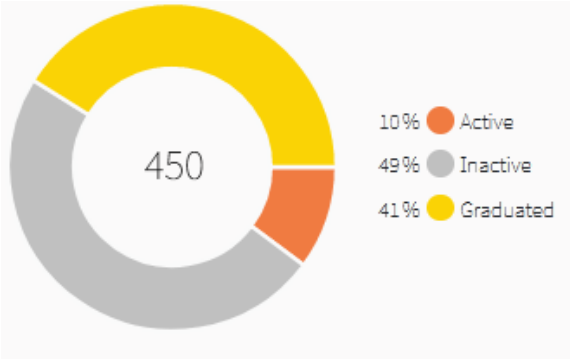
The participants exchanged 436 posts on the dedicated Forum and gave feedbacks to their peers as well as suggestions for the improvement of the plan.

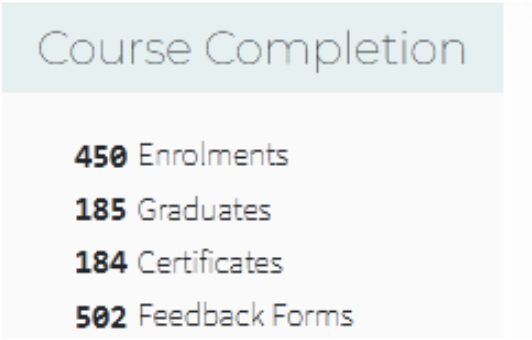
EVALUATION OF THE MOOC IMPACT

According to the Evaluation strategy, the MOOC impact was measured through the results of grading the MOOC participants and by an Post-course questionnaires completed by the participants on the MOOC

TRAINING OUTCOMES OF THE PARTICIPANTS IN THE MOOC

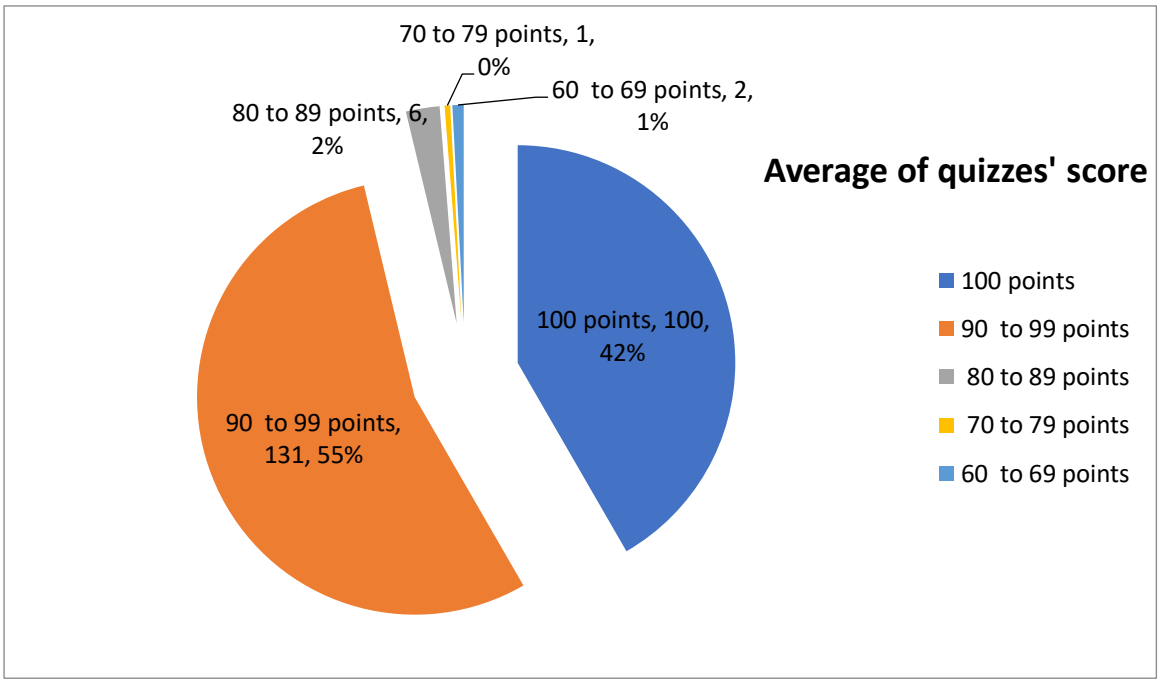
From the 450 participants enrolled the MOOC, 49% were total inactive, 10% were very active, and 41% finished the course, completing all activities achieving the minimum pass rate (answering at least 75% of the self-assessment questions correctly and doing the final assessment assignment).



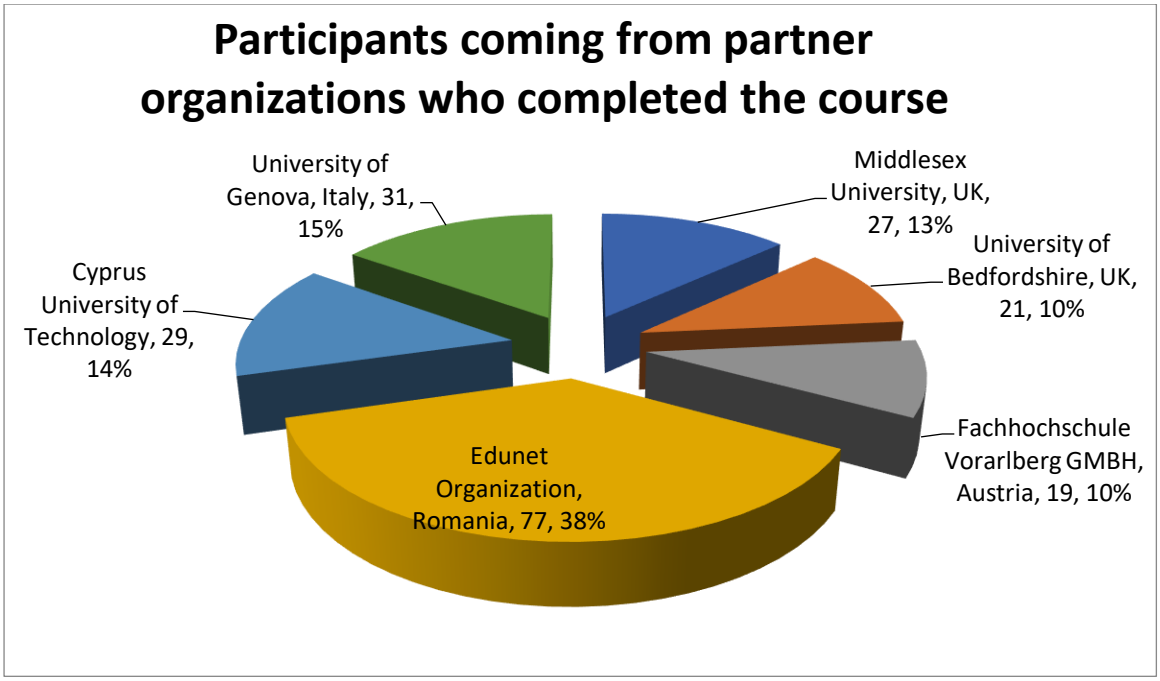


- 240 completed the LUs quizzes , from which 205 completed all 16 learning units' quizzes
- 191 submitted the final assessment
- 240 participants completed the Pre-MOOC
- 196 participants completed the Post MOOC questionnaires

From the 240 participants who completed the quizzes **, 100 of them were scored with 100% of points for all quizzes,** 131 obtained the average of points from 90% to 99,99% and only 9 participants, from 60 to 89.99%:



From the participants who completed all activities, 21 were from University of Bedfordshire, 29 from the Cyprus University of Technology, 77 from Edunet, 31 from the University of Genova, 19 from Fachhochschule Vorarlberg GMBH and 27 from Middlesex University.



A number of **185 participants were graduated** , achieving the minimum pass rate (answering at least 75% of the self-assessment questions correctly and doing the final assessment assignment) and **184 received certificate of completion/attendance** which included username, the course name as well as the completed lessons.

Knowledge , skills and understandings the MOOC participants have increased in this course.

To measure the participants' progress a pre-course and post-course questionnaires were administrated.

The pre-course questionnaire *(Annex no.2)* focused on the self assessment learning needs of the participants in terms of their competences (knowledge, skills, attitudes) and their expectations was completed by 240 participants.

Some expectations the participants expressed in Pre MOOC survey were:

- Broaden knowledge of robots and how they can be linked to social care and health in general.
- Increase awareness of the use of social robots
- information about robots and ethics
- how to develop a robot that interfaces with different cultures
- benefits of the new robot technology for the care system
- disadvantages of the new robot technology for the care system
- how robotics can help in the field of health care
- how we as health care providers can work with robots

- Awareness about the accuracy of robots in improving the efficacy of operations in workplaces while eliminating physical and psychological risks of potential injuries to service users, staff, and others.

- A deeper understanding of the social impact of robots, and some practical skills on how to apply robotic platforms to healthcare tasks.
- Gain confidence in speaking to others about this topic.
- Enhance knowledge to help do the job better
- Better employment in the health sector and progression in career in the health sector
- Have an overview about artificial intelligence and to learn new words and new views.
- Develop basic and transversal competences: cultural, social, digital and language competences;
- Increase level of digital competence and skills for using different technologies;
- To be able to understand the use of mechanical object to assist works in the hospital
- To know more about robots daily care routine
- To learn if and how nurses in other countries use robotic help and see what kind of possibilities there are
- To establish contacts and learn each other
- Understand how robots and other technologies can be used in my practical clinics
- Understanding the impact of AI impact on my future practice.
- Update the general awareness about the current skills in health and social care .
- Use robots in the most effective and specific way to individual needs.
  Increase my knowledge and understand how to create an efficient approach between robot, patient and physiotherapy practice.

At the end of the course, the participants completed the post-course questionnaires (Annex no. 3) focused on the participants achievements and the short-term impact of the course.

The 196 participants who completed the Post -MOOC questionnaire declared that they have increased their professional **knowledge and understandings** on transcultural robotic care issues in health and social care and have **improved their level of skills**, linked to their professional profile, as following:

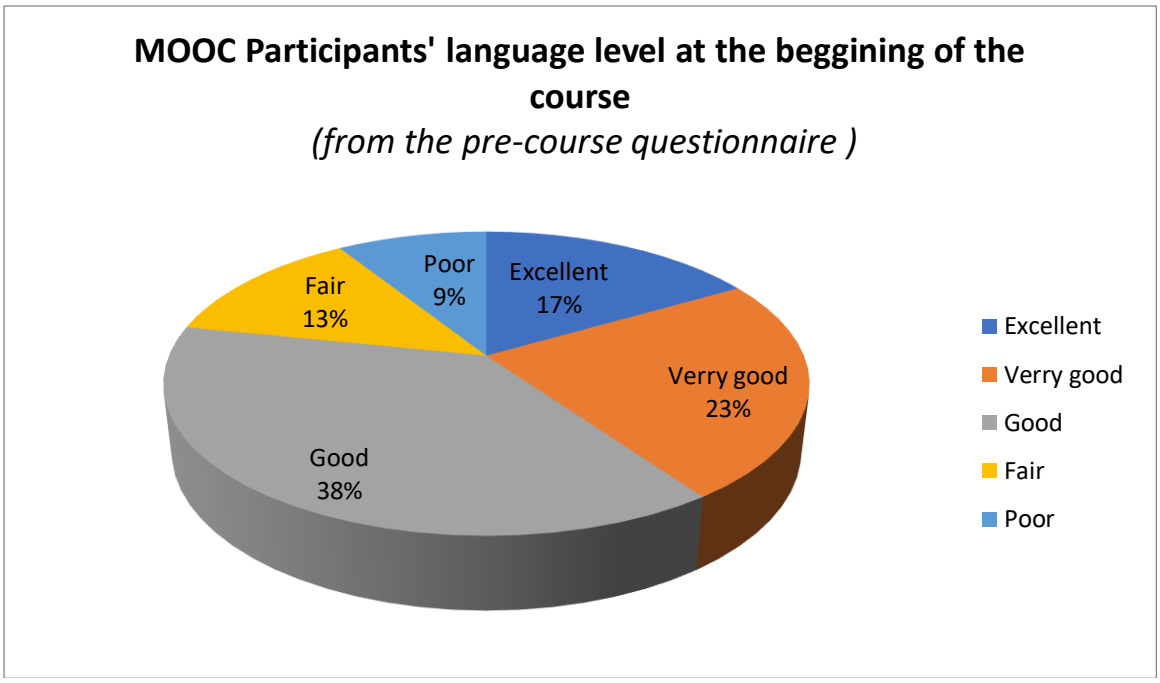
-	Improved Knowledge on robotic care	**162**	87.57%
-	Awareness of some of the main reasons for Socially Assistive Robots (SARs) being used in health and social care settings	**162**	87.57%
-	Awareness of some of the main misconceptions and/or stereotypes that currently exist regarding the use of SARs in caring patients/clients	**142**	76.76%
-	Awareness of the cultural values, attitudes and views that health and social professionals may have about SARs	**135**	72.97%
-	Knowledge of different types of SARs and their various uses in health and social care	**142**	76.76%
-	Knowledge about the capabilities and the potential 'role' of transcultural SARs in health and social care	**140**	75.68%
-	Knowledge of some of the benefits and challenges related to usage of transcultural SARs in health and social care	**138**	74.59%
-	Understanding of the importance of transcultural communication between health and social care staff, the client and his/her family members, carers and SARs	**132**	71.35%
-	Knowledge about ethical and legal concerns associated with the safe implementation of SARs in health and social care	**140**	75.68%
-	Understanding the significance of collaborative teamwork between different stakeholders, including SARs and client/patient SARs and health/social care workers, towards ensuring quality of patient/client care	**129**	69.73%

-	Understanding of how transcultural SARs can provide culturally sensitive and compassionate human-robot companionship to patients/clients in health and social care settings	**133**	71.89%
-	Understanding about the practical knowledge and skills needed to work with transcultural SARs in health and social care	**122**	65.95%
-	Knowledge and understanding of potential issues related to physical and psychological safety of the patient/client when implementing SARs in health and social care	**131**	70.81%
-	Improved the levels of skills	**131**	70.81%

OTHER IMPACT OF THE MOOC ON THE PARTICIPANTS

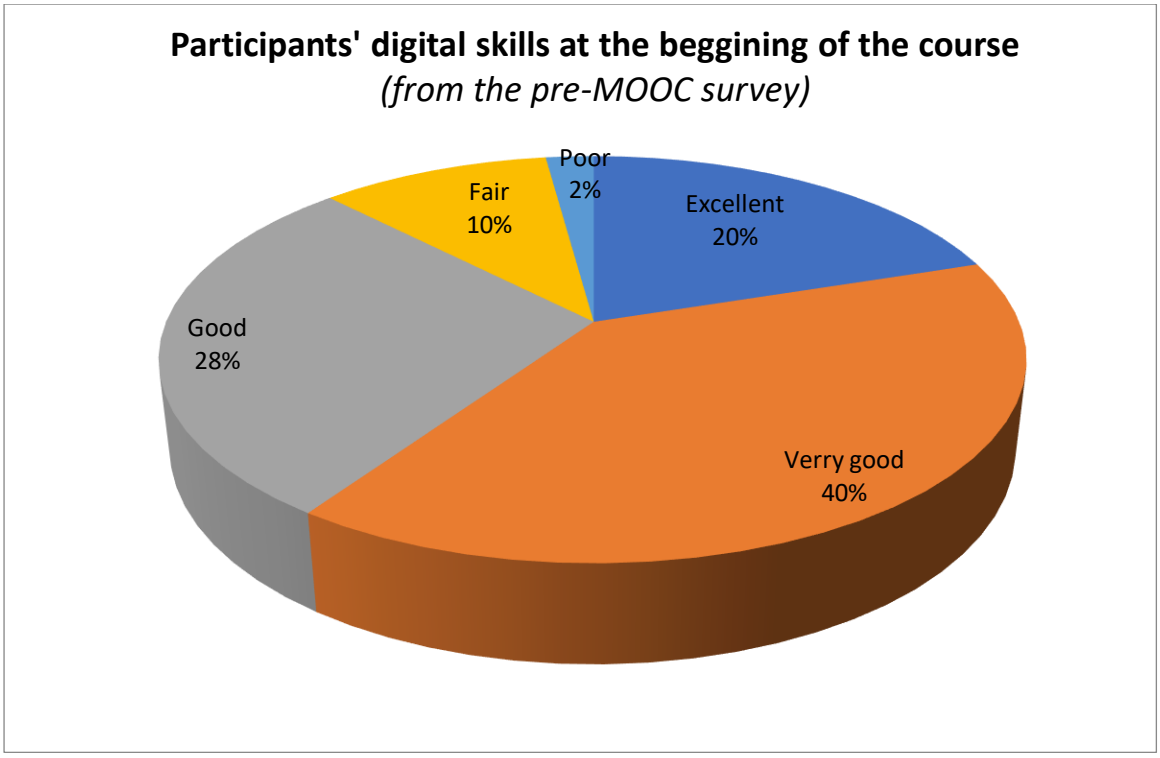
The participants increased their language skills.

The participants who completed the pre-course questionnaires had different English language level.



At the end of the course, the 196 participants, who completed Post-MOOC questionnaire (Annex no.3), **107 (57.84%)** declared that they **increased their language skills**

At the beginning of the course , the participants who completed the pre-course questionnaires have different level of digital skills.



The majority of them already having excellent and very good digital skills.

At the end of the course **, 59.46% of participants declared that they increased the level of their digital competence** and skills for using different technologies
Also **66.49%** of respondents to the post MOOC survey declared that they have increased **cultural knowledge and skills** of culturally competent communication and **74.05%** of them have a greater understanding and responsiveness to social, ethnic, linguistic and cultural diversity issues.

IMPACT ON THE MOOC FACILITATORS

A number of **22 facilitators** were trained to conduct the learning on the MOOC.

According to the evaluation questionnaires administrated *(Annex nr. 5),* after the training the facilitators increased their knowledge and skills.

	1	2	3	4	5
	1 Strongly Disagree - 5 Strongly Agree				
1. Increased knowledge on working with socially assistive artificially intelligent robots in health and social care	2	1		4	**15**
2. Improved knowledge about the MOOC and new approaches of training		1		3	**18**
3. Increased skills to conduct the online learning			1	3	**18**
4. Increased language and intercultural skills.	1	2		4	**15**
5. Increased the level of digital competence and skills for using social media.	2	3		5	**12**
6. Increased capacity of working in teams at European level**.**			1	2	**19**

EVALUATION OF THE LEARNING UNITS

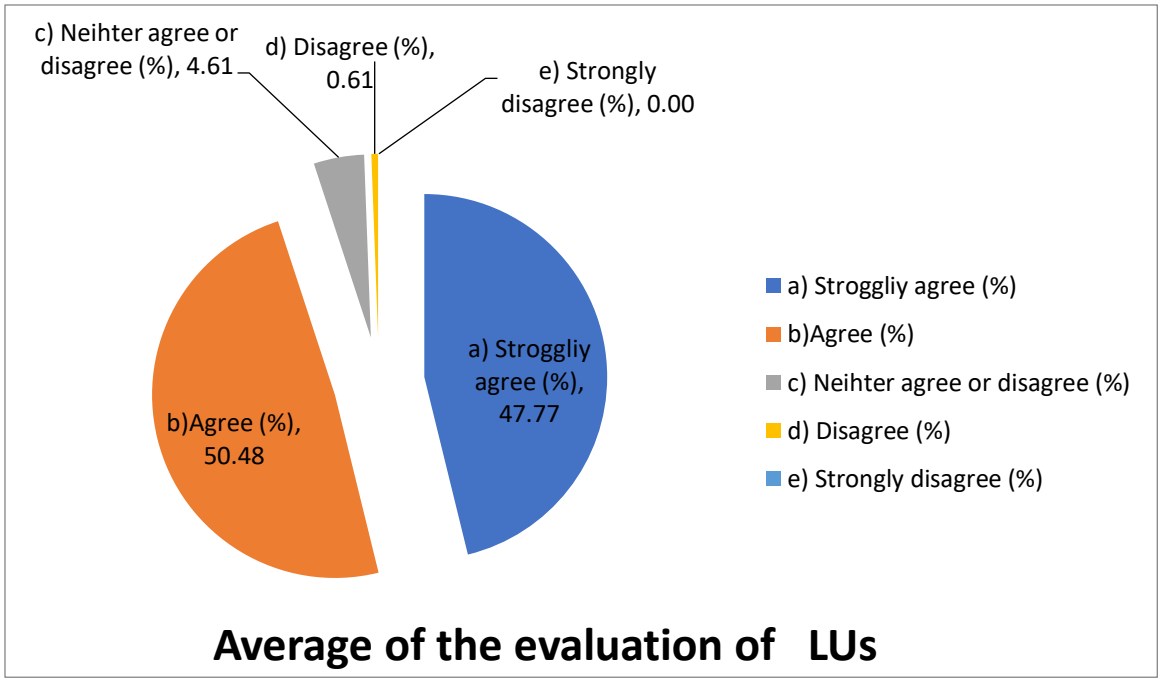
For each Learning Unit a short survey was created *(Annex no.6)* using the Survey Monkey app and a link to it was included in the document.

The criteria for the Learning Unit's evaluation were:

- coverage of the identified learning needs
- innovation and quality of the content and training materials
- intuitive and friendly presentation
- relevance of learning activities
- efficiency for achieving established learning outputs.

The trainers, facilitators and users were invited to evaluate the LUs. During the MOOC the participants were also invited to complete the survey and evaluate how the tools have assisted their learning.

The Learning units were appreciated as good and very good.



The detailed results of evaluation of each Learning Unit can be found in the *Annex no. 7.*

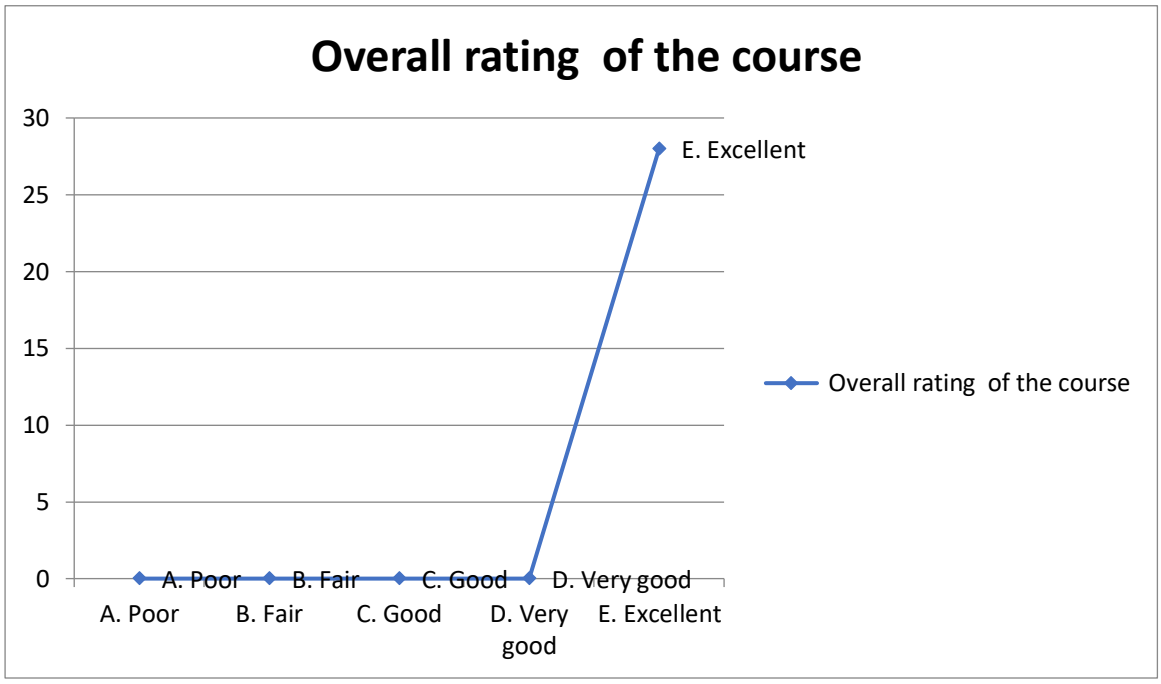
On the MOOC main forum, the participants discussed about their use of the tools, how the learning tools assisted their knowledge gained regarding intercultural communication and how they may apply this learning in the work environment.

EVALUATION OF THE COURSE

The evaluation of the Course was done through a questionnaire *(Annex no.4)* and based on the following criteria:

- Quality of the curriculum:
- Quality of the teaching/learning tools:
- Quality of the training activity:
- Quality of the training outputs

The MOOC participants rated the course as following :



Taking in consideration the results of the assessment and impact evaluation , the feedback received from the facilitators and participants, we can consider that:

- The course met the training needs and expectations of participants
- The course content was relevant and well structured
- The course was well organized as timely, access to materials, level of the workload , etc
- The presentations where appropriate to the level of understanding of target groups , intuitive and friendly.
- The learning tools and training materials were efficient for information and learning
- There was a good balance of individual learning, group learning , practical and evaluation activities
- The training activities were adequate facilitating individual learning pathway
- The discussion forum was efficient for interaction with other trainees and stimulated the interest of the participants in the subject.

In conclusion, we can say that **the course met the proposed objectives.**

Some reflections of the participants on the Forum and extracted from documents uploaded:

"The course was useful and interesting to have basic knowledge and references on scientific research about the use of robots in healthcare"

" I had my preconceptions about robots in health care at the beginning, but most of them are gone now."

"This course gave me an idea of how much relevant is culture in healthcare programs, too, thanks to the literature provided."

"I had the opportunity to find out that a new life is near and the future easier. The help that people with dementia or autisms through robots, is impressive"

"I've discovered a new world here and I will let other people to know as much as I know about. I hope they will accept the help of robots. No need to be scared or sceptical, as I was too, at the beginning"

"Benefits of this course include the awareness of culture in human computer interaction. This course provides a specific vocabulary, to communicate effectively with other people; critics to the actual systems and technologies; realistic scenarios of human robot interaction; how perception and feeling are influenced by culture awareness"

"I think there are two different approaches to implement similar courses: Firstly, which would be the more comfortable solution would be to implement it into the curriculum of nursing students. The second approach would be implementing it into the working enjoinment by giving the working staff possibilities to attend seminars about this topic."

ANNEXES

ANNEX NO. 1 : SELF-ASSESSMENT QUIZZES

MODULE 1: CULTURAL AWARENESS

1.1 – Definitions, terminology and course orientation

True/False

a) A robot used in the healthcare setting is designed to support and care for people with health issues, including assisting with their daily tasks and boosting their overall health and well-being.
b) A robot whose target is to create close and effective interaction with a human user for the purpose of giving assistance and achieving measurable progress
d) The science of dealing with all aspects of mimicking cognitive functions for real-world problem solving
f) Performing tasks in direct interaction with patients, nurses, doctors, and other health care professionals
h) A robot that communicates and interacts with humans on an emotional level

1.2 – Need for AI and robotics

True/False

a) The term 'Artificial Intelligence' (AI) was defined in the 1980s.
b) The origin of the word robot comes from the Czech word "robota" meaning forced labor.
c) Literature reports that robots were considered good devices for activating the patients' cognitive skills and making them happy.

1.3 – Misconceptions and stereotypes about robots

True/False

a) The stereotype is often defined as a generalization about a group of individuals.
b) A misconception is that both professional care workers and healthcare educators perceived that robots could increase productivity.
c) The EU report on 'Robotics and AI in the European Union: opportunities and challenges' highlights the importance debunking the prevalent fear about robots.
d) Very few people believe that robots will replace humans at work.

1.4 – Cultural values, attitudes, views about SARs

True/False

a) Values are defined as the beliefs people have, especially about what is right and wrong although these do not control their behaviour.
b) Literature confirms that 'robots' are visualised differently in different cultures.
c) Japanese and Europeans have different views on the application areas of robots.
d) A study found that the attitudes of different professionals in the elderly care organisations towards the use of socially assistive robots, were divided into those with a positive and open attitude and those with a wait-and-see attitude.

MODULE 2: CULTURAL KNOWLEDGE

2.1 – Types and Uses of SARs in Health and Social Care

True/False

a) Socially assistive robots (SARs) are considered a promising technology to tackle the challenges in health and social care posed by the growth of the ageing population.
b) SARs can prevent institutionalization of older people, delay the onset of dementia, but they cannot combat social isolation and depression.
c) Robots used with autistic children increased their attention and ability to follow instructions, but did not reduce their fidgeting.
d) A study exploring the benefits of using SARs for long-term cardiac rehabilitation patients found that patients had rapid improvements in their recovery heart rate, better physical activity performance, and improved cardiovascular functioning.

2.2 – Capabilities and potential 'role' of SARs

Match the statements to whether they are related to "now, soon or in the far future"

e) Converse with people understanding basic commands
g) Do things that they were not programmed to do
h) Converse with people in a natural way as like as humans do
i) Helping people to raise from bed
j) Grasping and manipulating generic objects in a messy domestic environment
k) Feel emotions
l) Moving from one place to another in the environment
m) Take decisions according to Asimov's Laws of robotics
n) Operate smart devices in the environment
o) Reminding a person to take a pill
p) Monitoring dangerous situations
q) Go to the kitchen and take a medicine for a
r) Understand their own position in the environment using sensor data

2.3 – Benefits and Challenges

True/False

a) The baby seal robot called PARO was found to produce the following key benefits in its implementation with older people: reducing negative emotional and behavioural symptoms, improving social engagement, promoting positive mood and quality of care experience.
b) In 2017, the European Parliament adopted a Resolution on Civil Law Rules on Robotics. It recognises that robots could perform automated care tasks and could facilitate the work of care assistants, while augmenting human care and making the rehabilitation process more targeted.
c) Culturally knowledgeable socially assistive robots combine concepts, principles, values, theories, practices, behaviours, and properties from a number of disciplines but does not include the caring sciences.

2.4 – Cultural aspects of socially assistive robots

True/False

a) Culturally competent care is widely and systematically employed throughout the health and social care sector in many countries
b) To successfully deploy culturally competent socially assistive robots in care homes in Sweden, UK and Chile, it is enough that they are only programmed with Swedish, English, and Spanish language competences

c) Socially assistive robots' users will be more inclined to accept and use a socially assistive robot that speaks their own language, talks about familiar topics, suggests tailored entertainment, and learns from daily interactions
d) Younger people from individualistic cultures are more likely to welcome socially assistive robots to care for their parents
e) Users from different cultural backgrounds would similarly accept a socially assistive robot that keeps at a distance of two metres and always expresses happiness in its tone of voice
f) Research has found that culturally competent socially assistive robots can be useful as companions to older persons and can help reduce loneliness and depression

MODULE 3: CULTURAL SESITIVITY

3.1 – Communication

1.SARs could perform functions for the children with autism spectrum disorder (ASD)
a. recover the delay in their development
b. enhance their communication skills
c. change their social behaviour

2. What does "the robot is able to engage and sustain a conversation" mean?
a. express with human-like emotive behaviours
b. start up a conversation and keep chatting with a person
c. learn more and make conversation more natural

3. What are the specific functions of a compassionate robot?
a. express empathy and compassion to patients and their families
b. learn about people cultural habits and tastes
c. evaluate the patient's needs and communicate the findings

3.2 – Ethical and legal issues

1. Who wrote the three following laws:
(1) A robot may not injure a human being
(2) A robot must obey orders, unless they conflict with law number one
(3) A robot must protect its own existence, as long as those actions do not conflict with either the first or second law?
a. Nikolai Tesla
b. Immanuel Kant
c. Elon Musk
d. Isaac Asimov

2. True or False? In order to enhance a person's autonomy, a social robot should always help the care recipient carry out a task, even when the person could do the activities independently.

3. True or False? When the care recipient has been diagnosed with dementia, it might be needed to ask informed consent to use SAR in their care more than one time.

4.Based on the results from Ienca et al (2018) study, one of the ethical values that were not always been taken into account when using Intelligent Assistive Technology in care was related to
a. human rights
b. privacy
c. beneficence

5.Some of the ethical values that are important to consider when implementing SARs in health and social care are connected to (pick more than one)

a. dignity
b. friendship
c. autonomy
d. loyalty
e. equality

One of the ethical concerns that Sharkey and Sharkey (2010) discussed in their article, and which is often associated with the use of robots in care is related to:

a. cost-effectiveness
b. reduction or loss of human contact
c. safeguarding issues

3.3 – Working together

Fill n Blank

Healthcare-related applications of AI and assistive robots will likely be capable of assuming some intervention previously completed by humans and support [ ] their daily work.
Effective teamwork between the health staff and SARs ensure the quality of [ ] care.
Through the collaboration between the autistic kids, staff, and SARs in the robot-mediated behaviour intervention, there are improvements in social and communication skills of children with [ ] .
Socially assistive robotics can be integrated into mental healthcare interventions for older patients, especially those with cognitive impairment of [ ] disease.
The collaboration between the patient/client and SARs encourages older people to be more independent and helps with their mental [ ] .

health professionals, patients/clients, well-being, Autism Spectrum Disorder (ASD), Alzheimer

3.4 – Culturally sensitive and compassionate human-robot-companionship

Fill in blank

Culture is part of our [ ] .
Providing culturally competent care has been associated with blank and higher [ ] .
The results from a large international project named CARESSES imply that using culturally competent robot have the potential to improve older adults' [ ] .
To be culturally competent means to recognize person's [ ] traits and respond accordingly.
According to the guidance document published by EPA (2015) , in order to improve cultural competence, systems need to value [ ] .

(patient satisfaction, acceptance awareness, emotional wellbeing, cultural and personal identity, diversity)

MODULE 4: CULTURAL COMPETENCE

4.1 – Practical Skills

True/False

g) All physical components of a robot are referred to as the robot's hardware.
h) Robot software is the complete set of instructions that determines the robot's behaviour.
i) All practical robotic skills are not culture related.
j) Health and social care workers have reported that their most urgent robot-related learning need is the acquisition of practical skills.

4.2 – Safety

True/False

k) To ensure successful interactions with humanoid SARs, it is essential to understand the factors that influence users' sense of safety and security.

l) Humanoid robots are robots whose appearance resembles a human and can often carry out tasks like a human.
m) Safety consideration in SARs includes three key underlying aspects: general safety, imagined safety and perceived safety.
n) Research in Finland found that care robots enhance the safety of the medication and the safety of older people who live at home.

4.3 – Rights and inequalities

True/False

a) When it comes to the use of SARs in healthcare and social care, important legal and ethical issues must be taken into account, which promote equality and human rights.
b) The use of robots and other AI technologies will create inequalities which scientist will not be able to solve.
c) Some robotics ethicists proposed that robots should be granted rights.

4.4 – The ADORE approach/model

True/False

a) The ADORE acronym stands for Assess, Do, Observe, Revise and Evaluate.
b) One way to reduce the potential impact of artificial intelligence and robotics on widening health inequalities is to make robots culturally competent.
c) The ADORE model enables the robot to capture culture-specific information about the user, thus avoiding stereotypical culture-generic information.

ANNEX NO.2 PRE-COURSE QUESTIONNAIRE FOR MOOC PARTICIPANTS

About you

Your Name and Surname
Your Email Address
Your gender?

Your country

- ☐ United Kingdom
- ☐ Italy
- ☐ Romania
- ☐ Cyprus
- ☐ Austria
- ☐ Other, specify _____

What is your qualification?

- ☐ Heath care professional
- ☐ Social care professional
- ☐ Teacher or trainer
- ☐ Student/learner under qualification in heath or social care
- ☐ Other, specify_____

What is your occupation?

a. Working in health care institution
- ☐ Working in social care institution
- ☐ Working in education/training institution
- ☐ Unemployed looking for a job
- ☐ Student
- ☐ Working in other sector, specify_____

On a scale of 1 to 5, what is your level of English?

- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very good
- ☐ Excellent

On a scale of 1 to 5, rate your internet use skills

- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very good
- ☐ Excellent

Did you take part in an online course in the past?

Yes/Not

Have you attended a course on the topic of Robots in heath or social care?

Yes/Not

What are the most important knowledge , skills and understandings you hope to increase in this course?

- ☐ Knowledge on TRN specific issues in health and social care, education and practice
- ☐ Skills, linked to your professional profile
- ☐ Language skills ;
- ☐ Digital competence and skills
- ☐ Cultural knowledge and skills of cultural communication;

What other outcomes / benefits do you expect to achieve at the conclusion of the course? Please, do a list

How do you hope this course will benefit for your professional work?

Do you have any specific questions you would like the trainer to cover? Any other special requests?

ANNEX NO.3: POST-COURSE EVALUATION QUESTIONNAIRE FOR MOOC PARTICIPANTS

1. What are the most important knowledge , skills and understandings you have increased in this course

- ☐ Awareness of some of the main reasons for SARs being used in health and social care settings
- ☐ Awareness of some of the main misconceptions and/or stereotypes that currently exist regarding the use of SARs in caring patients/clients
- ☐ Awareness of the cultural values, attitudes and views that health and social professionals may have about SARs
- ☐ Knowledge of different types of SARs and their various uses in health and social care
- ☐ Knowledge about the capabilities and the potential 'role' of SARs in health and social care
- ☐ Knowledge of some of the benefits and challenges related to usage of SARs in health and social care
- ☐ Understanding of the importance of communication between health and social care staff, the client and his/her family members, carers and SARs
- ☐ Knowledge about ethical and legal concerns associated with the safe implementation of SARs in health and social care
- ☐ Awareness of significance of collaborative teamwork between different stakeholders, including SARs and client/patient themselves, towards ensuring quality of patient/client care
- ☐ Understanding of how SARs can provide culturally sensitive and compassionate human-robot companionship to patients/clients in health and social care settings.
- ☐ Understanding about the practical knowledge and skills needed to work with SARs in health and social care
- ☐ Knowledge of potential issues related to physical and psychological safety of the patient/client when implementing SARs in health and social care

2. How do you **consider the course impacted you ?**

- ☐ I improved the levels of skills, linked my professional profiles;
- ☐ I have increased my knowledge on TRN specific issues in health and social care education and practice
- ☐ I have increased my language skills ;
- ☐ I have increased the level of my digital competence and skills for using different technologies;
- ☐ I have increased cultural knowledge and skills of cultural communication;
- ☐ I have a greater understanding and responsiveness to social, ethnic, linguistic and cultural diversity;
- ☐ I have increased motivation and satisfaction in my work;
- ☐ I have increased opportunities for employability and for professional development;

ANNEX 4: MOOC EVALUATION QUESTIONNAIRE

About you

Your Name and Surname
Your Email Address

Please, rate different statements , choosing True or False , as you agree or not agree with statements

The course met my training needs and my expectations

- ☐ The course content was relevant and well structured
- ☐ The course was well organized as timely, access to materials, level of the workload , etc
- ☐ The presentations where appropriate to my level of understanding , intuitive and friendly.
- ☐ The learning tools and training materials were efficient for information and learning
- ☐ There was a good balance of individual learning, group learning , practical and evaluation activities
- ☐ The training activities were adequate facilitating my own learning pathway
- ☐ The discussion forum was efficient for interaction with other trainees and stimulated my interest in the subject.
- ☐ The instructors facilitated my learning , challenging and motivating me to do my best work and encouraging my to participate to group activities
- ☐ I consider that I met my learning goals and objectives

Please, rate the course overall

A. Poor

B. Fair

C. Good

D. Very good

E. Excellent

ANNEX NO. 5: EVALUATION QUESTIONNAIRE FOR THE MOOC FACILITATORS

Name……..
Organisation……

1.How do you evaluate the quality of the training event?	(1) disagree				(5) agree
1. The material distributed prior to the training was helpful	1	2	3	4	5
2. Infrastructure was satisfactory (computer rooms, sound system, screens, rooms arrangement)	1	2	3	4	5
3. The overall training objectives were clear	1	2	3	4	5
4. The training sessions were organized and conducted in a satisfactory manner	1	2	3	4	5
5. The presentations were appropriate for your level of knowledge	1	2	3	4	5
6. Trainers supported , activated and motivated the participants efficiently	1	2	3	4	5
7. I consider that the training met my expectations and learning goals	1	2	3	4	5

2. How do you appreciate the training activities?	(1) dislike				(5) like
1. 2.1. Presentation and discussion around the MOOC's topics, aims, structure and learning activities	1	2	3	4	5
2. 2.2. Exploring the MOOC platform and facilities	1	2	3	4	5
3. 2.3. Experiencing and piloting the MOOC activities as learner	1	2	3	4	5
4. 2.4. Conducting the learning as trainer , assessing the participants		2	3	4	5

How much this course impact you?	(1) disagree				(5) agree
1. This course increased my knowledge on working with socially assistive artificially intelligent robots in health and social care	1	2	3	4	5
2. I improved my knowledge about the MOOC and new approaches of training	1	2	3	4	5
3. I increased my skills to conduct the online learning	1	2	3	4	5
4. I increased my language and intercultural skills.	1	2	3	4	5
5. I increased the level of my digital competence and skills for using social media.	1	2	3	4	5
6. I increased my capacity of working in teams at European level.	1	2	3	4	5

General Comments (please point out relevant issues/points you consider important for the improvement of the future training.

ANNEX NO. 6: EVALUATION QUESTIONNAIRE FOR THE LEARNING UNITS

* 1. The learning unit met my expectations and learning goals

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

Question Title

* 2. The content is innovative and of high quality

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

Question Title

* 3. I found the training materials to be user friendly and useful for my learning of this topic

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

Question Title

* 4. The learning activities are relevant and correspond with the established learning outputs

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

Question Title

* 5. The learning unit helped me to achieve the learning outcomes

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

ANNEX NO. 7: DETAILED RESULTS EVALUATION OF EACH LEARNING UNIT

No. of responses		28	14	10	5	4	3	5	3	10	5	8	3	3	3	3	3	
learning unit met my																		**0**
a) Stroggliy agr	%	43	29	40	40		67	40	33	60	60	88	33	67	33	33	67	**45.813**
b)Agree (%)	%	46	64	60	60	75	3	60	67	40	40	12	66	33	67	67	33	**49.563**
c) Neither agre	%	11	7			25												**2.6875**
d) Disagree (%	%																	**0**
e) Strongly disa	%																	**0**
2. The content is innovative	of res pon																	
a) Stroggliy agr	%	**39**	**43**	**30**	20	**50**	**67**	**20**	33	**40**	**40**	**63**	**66**	**33**	**33**	**33**	**67**	**42.313**
b)Agree (%)	%	46	50	50	60	25	33	60	67	60	60	37	33	67	67	67		**48.875**
c) Neither agre	%	14	4	20	20	25		20	33								33	**10.563**
d) Disagree	%								34									**2.125**
e) Strongly disa	%																	**0**
3. Found the training materials to be user																		**0**
a) Stroggliy agr	%	36	28	30	20		67	20	33	40	40	88	66	67	33	67	33	**41.75**
b)Agree (%)	%	60	65	60	80	100	33	80	67	60	60	12	33	33	67	33	67	**56.875**
c) Neither agre	%	4		10														**0.875**
d) Disagree (%	%		15															**0.9375**
e) Strongly disa	%																	**0**
4. The learning activities are																		**0**
a) Stroggliy agr	%	47	28	30	20	25	67	80	33	20	20	88	66	100	33	33	67	**47.313**
b)Agree	%	42	50	60	80	75	33	20	67	80	80	12	33		67	67	33	**49.938**
c) Neither agre	%	11	22	10														**2.6875**
d) Disagree (%	%																	**0**
e) Strongly disa	%																	**0**
5. 5. The learning unit helped me to																		**0**
a) Stroggliy agr	%	51	36	30	**40**	25	67	20	**33**	70	20	88	66	67	33	33	67	**46.625**
b)Agree (%)	%	41	58	60	**60**	50	33	60	**67**	20	60	12	33	33	67	67	33	**47.125**
c) Neither agre	%	8	7	10		25		20		10	20							**6.25**
d) Disagree (%	%																	**0**
e) Strongly disa	%																	**0**
AVERAGE																		
a) Stroggliy agr	%	**43.2**	**33**	**32**	**28**	**20**	**67**	**36**	**33**	**46**	**36**	**83**	**59.4**	**66.8**	**33**	**39.8**	**60.2**	**44.763**
b)Agree (%)	%	**47**	**57**	**58**	**68**	**65**	**27**	**56**	**67**	**52**	**60**	**17**	**39.6**	**33.2**	**67**	**60.2**	**33.2**	**50.475**
c) Neither agre	%	**9.6**	**8**	**10**	**4**	**15**	**0**	**8**	**6.6**	**2**	**4**	**0**	**0**	**0**	**0**	**0**	**6.6**	**4.6125**
d) Disagree (%	%	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**6.8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.6125**
e) Strongly disa	%	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**