



Adult education on digital, health and data literacy for citizen empowerment

ROMANIAN CO-CREATION WORKSHOPS SUMMARY



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Summary

The TRIO project aims to provide adult education in digital, health and data literacy for the empowerment of citizens. A digital learning platform will be created that will ensure adaptation to the changing needs of users, technology, and context. Therefore, it is necessary to understand individuals in context, which led us to the approach of co-creation workshops.

The co-creation workshops were research sessions designed to identify the main difficulties in accessing wellbeing and health-related information via the internet. The TRIO project provides online activities with the use of games as a playful way of learning. One of the aims was to identify the games that each of the target groups of the project (18-35 years; 36-50 years and 51+ years) prefer to use for learning. The sessions were carried out in a relaxed atmosphere with groups of people of the same age and without the use of computers. The sessions took place in 5 different European countries: Portugal, Spain, Netherlands, Germany, Romania, in February/March.

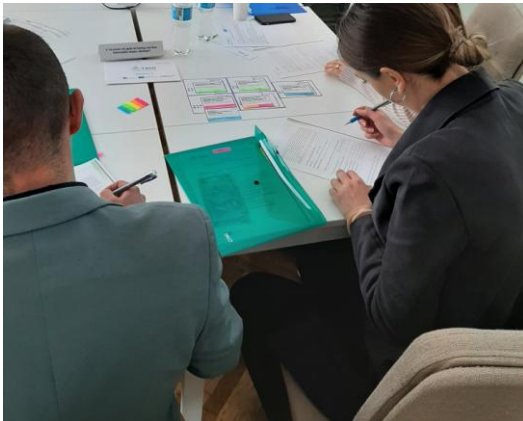


Figure 1 – The groups 18-35 and 51+ during the activities of the workshop in Romania.

How the workshops were held in Romania

The co-creation workshops carried out with the target groups in Romania involved 9 people, 6 women and 3 men, representing the TRIO age groups. All groups had 3 participants. They were conducted by the same facilitator on the same day in Iasi, in February 2023. Information about the workshop and the consent form were sent to the participants by e-mail and were signed on the spot. The event lasted about 2 h 30m and overall, everyone felt very satisfied. All participants showed interest in being involved in the project and receiving information in the future.

The participants got to know each other and started to relax by doing an initial icebreaker. They were asked to introduce themselves using “2 truths and a lie”. They had to work out which one was a falsehood. This activity was very well received by the participants and created a nice and satisfying moment.

Outcomes of the co-creation workshop

In the next activity participants were asked to choose 6 cards and to sort them by difficulty level. These cards contained a goal and a practical description of that goal. The cards were grouped by TRIO project themes: 1) Digital Literacy 2) Health Literacy 3) Data Literacy.

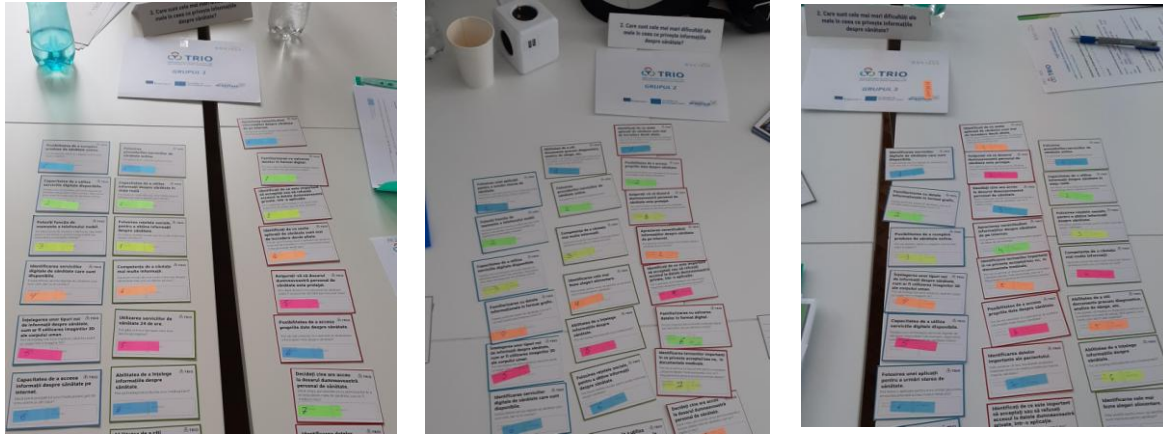


Figure 2 –Activity 2: What are my biggest difficulties regarding health content? Choose and order a group of difficulty cards.

The following tables show the questions asked in the cards, with only the objectives and the corresponding answers, ordered by difficulty (from 1 or most difficult to 6 or least difficult). The two rows highlighted in the tables are the selected difficulties, as they correspond to the difficulties that all the participants considered to be the most difficult.

Table 1 presents data on digital literacy.

Table 1 - List of difficulties related to digital literacy and order of responses by age group.

DIGITAL LITERACY (Difficulties)	18-35	36-50	51+
a. Make use of your cell phone's reminder feature. Can I make use of my mobile phone's reminder function to notify me of medical appointments or exams?		2	3
k. Make use of an app to track my health. Can I use an app to track my weight, blood pressure, and sugar levels?	6	1	
l. Become familiar with information data with graphs. Do I understand health-related graphs, such as the one showing the transmission of Covid 19?	2	4	
m. Ability to access health information on the internet. If I lose the instructions for a medicine, can I go online and look for it?			6
p. Understand new types of health information, such as using 3D images of a body. Can I better understand my doctor when she/he shows me an organ in a 3D image?	4	5	5
s. Identify which digital health services are available. Are there different digital health services that are useful but I do not know them?	1	6	4

v. Ability to use the digital services that are available. Do I understand how to use digital health services that are available? (e.g., Insurance Health Application)	5	3	2
x. Ability to buy health products online. Can I identify if an online store is safe and legit?	3		1

There was no question that has not been chosen by any group. The question "**m. Ability to access health information on the internet**" shows overall little interest by all groups. The group 18-35 revealed difficulty in "**i. Become familiar with information data with graphs**". The group 36-50 revealed having difficulty in "**k. Make use of an app to track my health.**" Group 51+ revealed difficulty in "**v. Ability to use the digital services that are available**"

Overall, the difficulties that gained the most consensus were "**s. Identify which digital health services are available**" and "**v. Ability to use the digital services that are available**", being selected by all 3 groups and being ranked at least by one groups on 1st or 2nd place.

Table 2 presents data on health literacy.

Table 2 - List of difficulties related to health literacy and order of responses by age group.

HEALTH LITERACY (Difficulties)	18-35	36-50	51+
g. Know how to look for more information. If I want more information about my health, do I know what to look for?	4	3	4
n. Ability to understand health information. Can I understand the instructions on a medication?	6	5	6
q. Make use of the social media for getting health information. Can I use social media to find out health information?	3	6	3
r. Identify the best food choices. It is possible for me to identify which foods promote good health?		4	
t. Ability to use health information in real life. Can I adequately use the health information that I find on the internet?	2		2
u. Ability to read documents like diagnoses, blood tests etc. Is it possible for me to understand a medical diagnosis or results of a blood test, without a medical professional that explains it to me?	5	1	
y. Make online health procedures. Can I handle a medical consultation online?	1	2	1
z. Health service to be used 24 Hours. Can I find online a pharmacy that is open at night?			5
NEW: Health services identification Is it possible for me to understand which health services are included in my personal health insurance?			

The question related to knowing which "z. Health service to be used 24 Hours" does not represent great difficulty for the participants . It is also followed in those of low difficulty by the "r. Identify the best food choices". The group 36-50 revealed to have difficulties in "u. Ability to read documents like diagnoses, blood tests etc."

In general, the difficulties that received the greatest consensus were " y. Make online health procedures" and "t. Ability to use health information in real life". The group 18-35 indicated that understanding which health services are included in the personal health insurance is difficult in some cases.

During the workshop discussions with the participants, the group 18-35, indicated that while it is very easy to find out which health services are operating at any time (e.g. emergency services, working hours of various clinics or practitioners, pharmacy open during night hours), they indicated that from the online information of their insurance organisation and their contract files is not easy to understand which health services are actually included in their personal health insurance, making it difficult to understand if they will/can be reimbursed and how much when using certain health services. As a result, a new card was created for the Health Literacy category, named "Health services identification".

Table 3 presents data on data literacy.

Table 3 - List of difficulties related to data literacy and order of responses by age group.

DATA LITERACY (Difficulties)	18-35	36-50	51+
b. Identify why it is important to accept or decline access to your private data in an app. In an app, can I understand what is important to accept or deny access to?		5	3
c. The ability to access your own health data. It is possible for me to log in to an app and access my health information?	6	2	6
d. Identify why some health apps are more trustworthy than others. It is possible for me to tell whether one health app is more careful with my personal information than another?	1	1	4
e. Make sure your personal health record is protected. Do I know whether or not my personal health record can be accessed by others without my permission?	2	3	5
f. Decide with whom my personal health record will be shared. If I want, can I grant permission to anyone to access my health data, such as my doctor?	3		
h. Become familiar with saving data digitally. Can I organize my medical documents digitally (on my computer or cell phone)?		6	2
i. Identification of important patient data. Do I have to bring my medical tests to explain my health to my doctor?			

j. Identify what is important to accept/or not in medical documents. Can I read and sign a document accepting the use of my personal data, like General Data Protection Regulation?	5		
o. Identify the accuracy of health information on the internet. Can I identify the reliability of health information on the Internet?	4	4	1

The question related to "i. Identification of important patient data" does not represent great difficulty for the participants. Followed with low difficulty by "j. Identify what is important to accept/or not in medical documents.", as well as "f. Decide with whom my personal health record will be shared". The difficulty in "b. Identify why it is important to accept or decline access to your private data in an app" has a median level for older age groups, followed by "h. Become familiar with saving data digitally", with the older group finding significant difficulty here. For the 51+ group the biggest difficulty is "o. Identify the accuracy of health information on the internet".

The 18-35 and 36-50 group revealed biggest difficulty in "d. Identify why some health apps are more trustworthy than others".

Overall, the biggest difficulty for all groups is "d. Identify why some health apps are more trustworthy than others", followed by "o. Identify the accuracy of health information on the internet".



Figure 2 - Activity 3: How do I prefer to receive information? 14 cards with the types of media you prefer being ranked by the workshop participants.

The third activity consists of a set of cards with pictures of information media which are presented to the participants. It was designed to find out which media type was preferred by the participants to get informed in the health domain. The 6 most preferred media for each age group are shown in the table below.

Table 4 - List of the preferred media for the reception of health information.

Type of media (preferred)	18-35	36-50	51+
Step by step			
Video conference	X	X	
Infographic			
Video	X	X	
Social media post	X	X	X
Image	X	X	
Augmented reality			
E-mail			
Graphs			X
Chat	X	X	X
Podcast	X	X	X
3D			X
Newspaper			X
Text only			

The table shows that the groups aged 18-35 and 36-50 prefer "Video", "Video conference" and "Image". All groups agree on their preference for "Social media post", "Chat" and "Podcast". The older group showed interest for more novel media types, which in the beginning they were not sure what they are, such as the "3D" and the "Graphs". However, they also revealed that they also prefer more traditional media, such as "Newspaper" information style.

For the fourth activity, participants were asked to combine the previous two activities. To do so, they only had to use the difficulty cards that had taken the first two places.

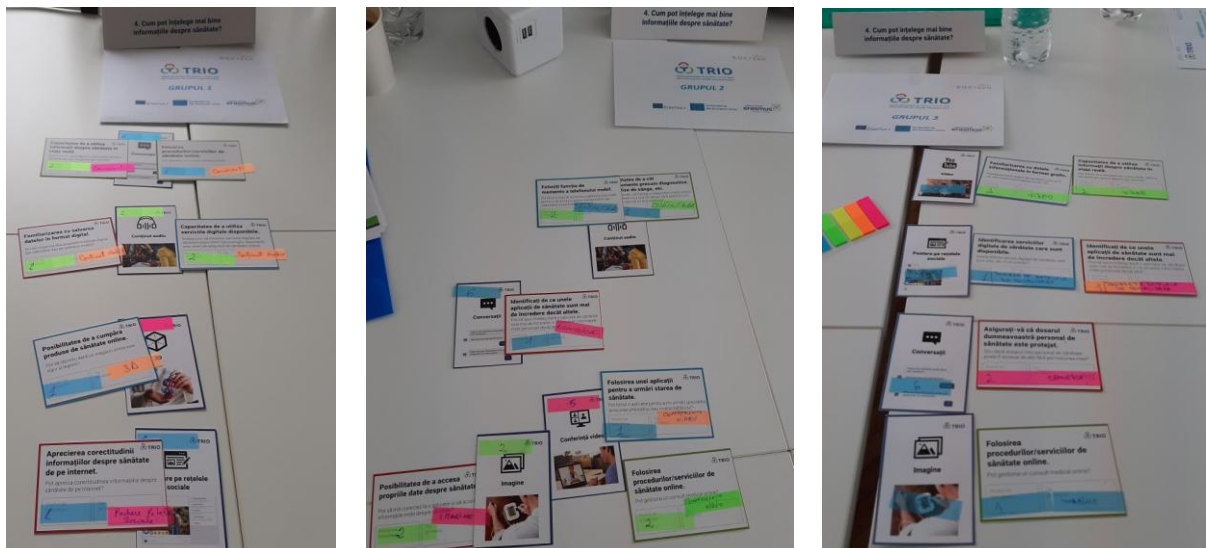


Figure 3 - Activity 4: How can I better understand health information? Match the 2 main difficulties with the preferred type of media.

In this last activity, 9 different cards were presented, on the left side there was a blank space to place the difficulty card and a list of icons with types of media to select, as well as a space to write. On the right side of the card there was the design of a drawing of a mobile phone with different types of games. In total, 9 types of games were presented.

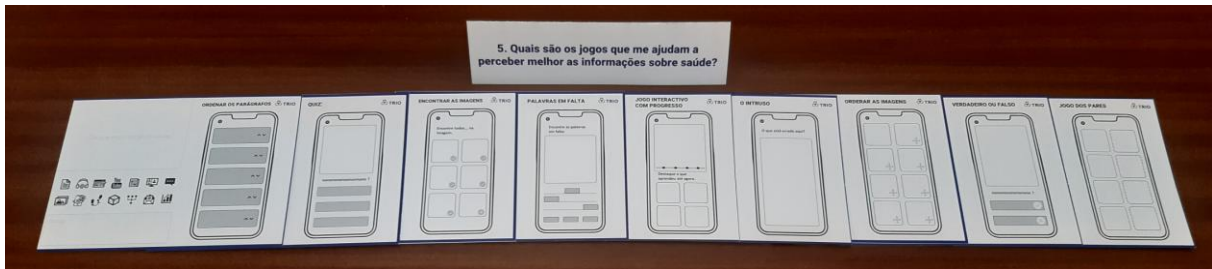


Figure 4 - Activity 5: Which type of games help me better understand health information? Cards with 9 templates of the games.



Figure 5 - Final workshop outcomes (18-35 group).



Figure 6 - 36-50 group.



Figure 7 – 51+ group.

This activity aimed to identify the types of games that participants would like to learn through. They had to choose the game they thought best suited the chosen media type and difficulty. Their choice was only the two most difficult games per topic. Below is the data gathered.

Table 5 -The results, information about the difficulty in Digital Literacy, the order number, the preferred media and game.

DIGITAL LITERACY (Difficulties)	18-35			36-50			51+		
	N	MEDIA	GAME	N	MEDIA	GAME	N	MEDIA	GAME
a. Make use of your cell phone's reminder feature.				2	Podcast	Missing words	3		
k. Make use of an app to track my health.	6			1	Video conference	Order images			
l. Become familiar with information data with graphs.	2	Video	Image pairing	4					
s. Identify which digital health services are available.	1	Social media post	Find hotspots	6			4		

v. Ability to use the digital services that are available.	5			3			2	Podcast	Find hotspots
x. Ability to buy health products online.	3						1	3D	True or false

For the games related to Digital Literacy, two main questions were selected by all groups. For the difficulty "s. Identify which digital health services are available" (selected by group 18-35) the game type chosen was "Find hotspots" on a "Social media post". For group 51+, for the difficulty "v. Ability to use the digital services that are available", again the game type "Find hotspots" was chosen on a "Podcast" media type. While these difficulties were selected by the other groups, these were not ranked in the first two positions, thus no game type and media were selected for them. For the difficulty "l. Become familiar with information data with graphs" (question selected by group 18-35) the game type chosen was "Image pairing" on an image with a "video". For the difficulty "k. Make use of an app to track my health" (question selected by the group 36-50), was chosen the game type "Order images", which could be on an image with a "video conference". For the difficulty "v. Ability to buy health products online" (question selected by the group 51+), the game type chosen was "True or false" which could be on presented in a "3D" information format. For the difficulty "a. Make use of your cell phone's reminder feature" (question selected by group 36-50), was chosen the game type "Missing words" which could be on an image with "podcast".

Table 6 - The results, information about the difficulty in Health Literacy, the order number, the preferred media and game.

HEALTH LITERACY (Difficulties)	18-35			36-50			51+		
	N	MEDIA	GAME	N	MEDIA	GAME	N	MEDIA	GAME
t. Ability to use health information in real life.	2	Video	True or false				2	Chat	Quiz
u. Ability to read documents like diagnoses, blood tests, etc.	5			1	Podcast	Quiz			
y. Make online health procedures.	1	Image	Quiz	2	Video conference	The intruder	1	Chat	Sort the paragraphs

For the games related to Health Literacy, two main questions were selected. For the 18-35 and 51+ groups, for the difficulty "t. Ability to use health information in real life", the game types chosen were "True or false" to apply in an "video" and the game type "Quiz" for the information in a "chat". For the difficulty "y. Make online health procedures." (question selected by all groups), the game types chosen where: "Quiz" in a "image", "The intruder" on a picture with "video conference" information, and the game "Sort the paragraphs" for the information in a "chat".

For the difficulty "u. Ability to read documents like diagnoses, blood tests, etc.", selected by group 36-50, the game type chosen was "Quiz" for the information in a "podcast".

Table 7 - The results, information about the difficulty in Data Literacy, the order number, the preferred media and game.

DATA LITERACY (Difficulties)	18-35			36-50			51+		
	N	MEDIA	GAME	N	MEDIA	GAME	N	MEDIA	GAME

c. The ability to access your own health data.	6			2	Image	Image pairing	6		
d. Identify why some health apps are more trustworthy than others.	1	Social media post	The intruder	1	Chat	True or false	4		
e. Make sure your personal health record is protected.	2	Chat	Quiz	3			5		
h. Become familiar with saving data digitally.				6			2	Podcast	Order images
o. Identify the accuracy of health information on the internet.	4			4			1	Social media post	Image pairing

For the games related to Data Literacy, two main questions were selected. For the difficulty "d. Identify why some health apps are more trustworthy than others" (selected by groups 18-35 and 36-50) the game types chosen were "The intruder" for information in a "social media post" for group 18-35 and the game type "True or false" for the "chat" information for the 36-50 group. In the case of the group 51+ for the difficulty "o. Identify the accuracy of health information on the internet" the game type chosen was "Image pairing" for information with "social media post" format.

In the case of the group 18-35 for the difficulty "e. Make sure your personal health record is protected." the game type chosen was "Quiz" for the information in a "chat".

For the difficulty "c. The ability to access your own health data" (selected by group 36-50) the game type chosen was "Image pairing" on a picture with an "image".

In the case of group 51+, for the difficulty "h. Become familiar with saving data digitally." the game type selected was "Order images" for information in a "podcast" format.

The findings

In conclusion, the results showed that there was no homogeneity in the choice of games between the different groups. However, all groups showed a good understanding of all game types and were keen to diversify game types for different difficulties. The only game type that was not chosen was the "Interactive game progress" game.

The most appreciated types of games were "Quiz" with four choices, and "Image pairing" and "True or false" with three choices. With two choices we have "The intruder", "Find the hotspots" and "Order images". The game types "Missing words" and "Sort the paragraphs" were selected once. We noticed that in some case there is not a very good match between the chosen game type and the media type (e.g. "Find Hotspots" in a "Podcast"), and it came out that when selecting the media type the participants did not have in mind that they would match these with a game. Thus, during the game selection, they mostly focused on the type of game they like and did not take into consideration the media they had previously selected. However, the selected media can be considered for educational materials that are being developed in a more traditional manner, independently of the gamification platform.

The methodology adopted was appropriate and had different moments, some of which were entertaining, such as the initial icebreaker games, followed by moments of understanding of the problems and learning about new technologies (e.g. many of the participants were not sure what Augmented Reality or Gamification means, older participants did not know what a QR code is and how to use a smart phone to scan it), with the possibility of brainstorming with the help of cards. This was followed by the idealization of the games using templates. All the results were photographed as evidence and analysed. The results provided important conclusions for building the platform and identifying functional issues for future workshops. Finally, the participants evaluated the workshops in terms of their satisfaction.

The co-creation workshops proved to be a way of getting to know citizens and understanding what the main difficulties were by project focus area and age group. It also allowed us to validate the games and understand their suitability for the age groups. One of the most important aspects that emerged for the learning platform was to find out that the participants prefer games with simple mechanics without the use of a lot of text and that they like the variety of games for learning.

The organisation of the activities proved to be very functional, and all participants were very satisfied with their performance. The most important factor was the careful planning and the information that was always available about each of the activities. It was also important to reflect on the theme of Digital Literacy for Health, to become aware of the difficulties faced by each individual. In this context, this event also served as a preparation for the next workshops, which will include the learning platform.