



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

# PORTUGUESE CO-CREATION WORKSHOPS SUMMARY



Co-funded by  
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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 3 Groups making an Ice-break game. Activity 1: Warm up - 2 truths and 1 lie.*

## How the workshops were held in Portugal

The co-creation workshops carried out with the target groups in Portugal involved 10 people, 4 women and 6 men, representing the TRIO age groups. All groups had 3 participants, apart from the 51+ group, which had 4 participants. They were conducted by the same facilitator on different days in Porto in March 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 1h 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.

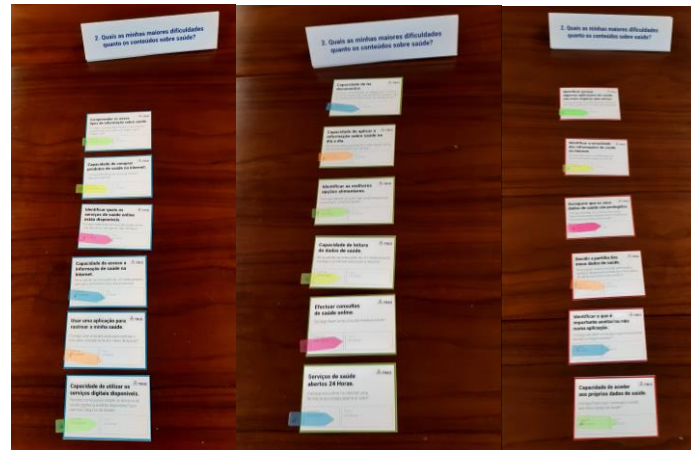


Figure 2 – Activity 2: What are my biggest difficulties regarding health content? Choose and order a group of difficulty cards.

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

The question "a. **Make use of your cell phone's reminder feature** ", was not chosen by any group. The questions "k. **Make use of an app to track my health.**" and "m. **Ability to access health information on the internet**" show no interest by all groups. The group 18-35 revealed difficulty in "v. **Ability to use the digital services that are available**" The group 36-50 revealed having difficulty in "p. **Understand new types of health information, such as using 3D images of a body**" Group 51+ revealed difficulty in "i. **Become familiar with information data with graphs**".

Overall, the difficulties that gained the most consensus were "s. **Identify which digital health services are available**" and "x. **Ability to buy health products online**".

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+
<b>g. Know how to look for more information.</b> If I want more information about my health, do I know what to look for?	6		2
<b>n. Ability to understand health information.</b> Can I understand the instructions on a medication?	4	4	
<b>q. Make use of the social media for getting health information.</b> Can I use social media to find out health information?	1		4
<b>r. Identify the best food choices.</b> It is possible for me to identify which foods promote good health?	2	3	5
<b>t. Ability to use health information in real life.</b> Can I adequately use the health information that I find on the internet?	3	2	3
<b>u. Ability to read documents like diagnoses, blood tests etc.</b> 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	1
<b>y. Make online health procedures.</b> Can I handle a medical consultation online?		5	6
<b>z. Health service to be used 24 Hours.</b> Can I find online a pharmacy that is open at night?			

The question related to knowing which "z. **Health service to be used 24 Hours**" does not represent great difficulty for the participants, as well as the difficulty in "y. **Make online health procedures**". It is also followed in those of low difficulty the "n. **Ability to understand health information**". The group 18-35 revealed to have difficulties in "q. **Make use of the social media for getting health information**" and "r. **Identify the best food choices**".

In general, the difficulties that received the greatest consensus were "t. **Ability to use health information in real life**" and "u. **Ability to read documents like diagnoses, blood tests etc.**", This was very difficult for the two older age groups.

Table 3 presents data on data literacy.

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

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

The question related to "i. Identification of important patient data" does not represent great difficulty for the participants. Followed with low difficulty by "h. Become familiar with saving data digitally", 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 all groups, followed by "e. Make sure your personal health record is protected", with the older group finding significant difficulty here. For the 18-35 group the biggest difficulty is "c. The ability to access your own health data".

The 36-50 and 50+ group revealed difficulties in "o. Identify the accuracy of health information on the internet" and the biggest difficulty is "d. Identify why some health apps are more trustworthy than others".





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

the third activity, a set of cards with pictures of information media is presented. It was designed to find out which the participants preferred to use to get informed about health. The 6 most preferred media 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	X	X	X
Video conference	X		
Infographic	X	X	X
Video		X	X
Social media post	X		
Image			
Augmented reality			X
E-mail	X		
Graphs		X	X
Chat			X
Podcast		X	
3D			
Newspaper			
Text only	X	X	

The graph shows that the group aged 18-36 prefer "Video conference", "Social media post" and receiving information via "Email". The two younger groups also revealed that they like to read "Text only". The two older groups revealed that they like to watch "Video". All groups agreed that they prefer to access information through "Step by step" and "Infographic".

A curious result worth mentioning. It was the 51+ group that chose "Augmented Reality". This was due to the discussion between the participants about this technology and its possibilities, as there was a great deal of interest in its use.

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.

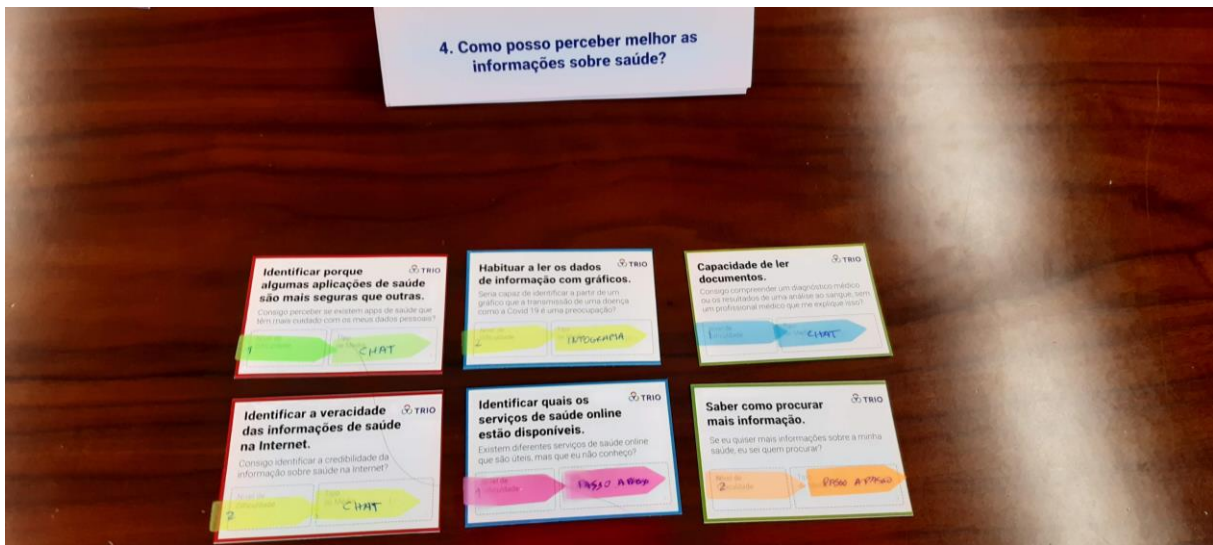


Figure 3 - Activity 4: How can I better understand health information? Match the 2 main difficulties with the preferred type of media.

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.

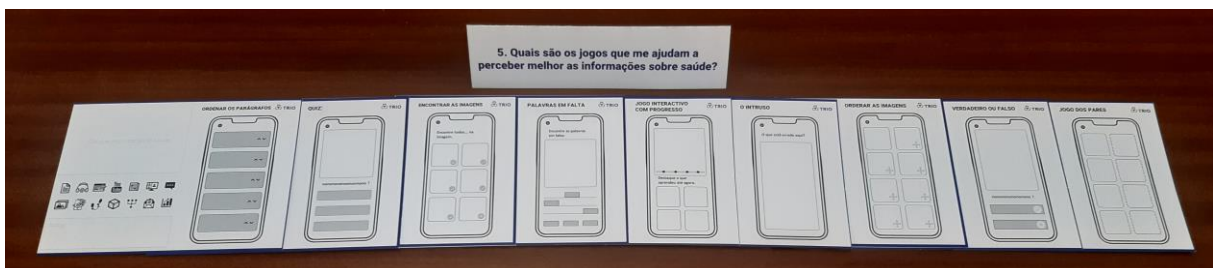


Figure 4 - Activity 5: Which games help me better understand health information? Cards with 9 templates of the games.



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



Figure 6 - 36-50 group.

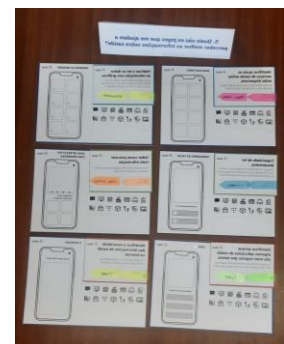


Figure 7 – 51+ group.

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
I. Become familiar with information data with graphs.							2	Infographic	Order images
p. Understand new types of health information, such as using 3D images of a body.	5			1	Infographic	Interactive game progress	4		
s. Identify which digital health services are available.	1	Social media post	Find hotspots	3			1	Step by step	Image pairing
v. Ability to use the digital services that are available.	2	Step by step	Interactive game progress	6			5		
x. Ability to buy health products online.	3			2	Infographic	The intruder	3		

For the games related to Digital Literacy, two main questions were selected. The difficulty "s. Identify which digital health services are available" (selected by groups 18-35 and 51+) were chosen the game types "Find the hotspots" on a social media post and the "Image pairing" for an image with "step-by-step" information. And for groups 36-50, for the difficulty "x. Ability to buy health products online", the game type "The intruder" was chosen on a picture with "infographic". This is because the other groups ranked this difficulty 3rd.

For the difficulty "I. Become familiar with information data with graphs" (question selected by group 51+) was chosen the game type "Order images" on an image with an infographic. For the difficulty "p. Understand new types of health information, such as using 3D images of a body" (question selected by the group 36-50), was chosen the game type "Interactive game progress", which could be on an image with an infographic. For the difficulty "v. Ability to use the digital services that are available" (question selected by the group 18-35), was chosen the type "Interactive game progress" which could be on an image with "step-by-step" information. For the difficulty "x. Ability to buy health products online" (question selected by group 36-50), was chosen the game type "The intruder" which could be on an image with "infographic".

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
g. Know how to look for more information.	6						2	Step by step	Interactive game progress
q. Make use of the social media for getting health information.	1	Social media post	True or false				4		
r. Identify the best food choices.	2	Infographic	Image pairing	3			5		
t. Ability to use health information in real life.	3			2	Step by step	Order images	3		



u. Ability to read documents like diagnoses, blood tests, etc.	5			1	Graphs	Sort the paragraphs	2	Chat	True or false
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For the games related to Health Literacy, two main questions were selected. For the difficulty " u. Ability to read documents like diagnoses, blood tests, etc." (selected by groups 36-50 and 51+), were chosen the game types "**Sort the paragraphs**" for understanding "graphs" or even the game type "**True or false**" for the information in a "chat". And for the 18-35 groups, for the difficulty "r. r. Identify the best food choices.", was chosen the game type "**Image pairing**" on a picture with an "infographic".

This group also selected as a difficulty " q. Make use of the social media for getting health information." for which they chose the game type "**True or false**" to apply in a " Social media post".

For the difficulty " g. Know how to look for more information" (question selected by group 51+), was chosen the game type "**Interactive game progress**" in a "step-by-step" image.

For the difficulty " t. Ability to use health information in real life" (question selected by group 36-50), was chosen the game type "**Order images**" on a picture with "step by step" information.

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.	1	Step by step	Order images				6		
d. Identify why some health apps are more trustworthy than others.	2	Infographic	Order images	1	Text only	Quiz	1	Chat	Quiz
o. Identify the accuracy of health Information on the internet.	5			2	Text only	True or false	2	Chat	The intruder

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 all groups) was chosen the game type " Order images" for an image with an "infographic" for group 51+. The remaining groups chose the game type "**Quiz**" for the "text only" information for the 36-50 group and for the information in a "chat" for the younger group.

In groups 36-50 and 51+ for the difficulty "o. Identify the accuracy of health Information on the internet" was chosen the game type "**True or false**" for information with "text only" in the case of the group 36-50. In Group 51+ the game type selected was "**The intruder**" for information in a "chat".

## 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 "missing words" game.

The most appreciated types of games were "**Order images**" with four choices, "**Interactive game progress**" and "**True or false**" with three choices. With two choices we have "**The intruder**", "**Quiz**" and "**Image pairing**". The game types "**Find the hotspots**" and "**Sort paragraphs**" had one choice.

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 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.