Our Digital Village

National report

after the RMA workshops - Portugal

'Digital competences in the Municipality of Manteigas (Portugal): challenges and aspirations of the community'

INOVA+

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Introduction

Manteigas is a village and municipality located in the Portuguese district of Guarda, at the heart of “Serra da Estrela”, the highest mountain of continental Portugal. In terms of geography and landscape, Manteigas is immediately associated with “Serra da Estrela”. It hosts the Natural Park of Serra da Estrela and belongs to the network “Villages of the Mountain”, a network of 41 villages of exceptional natural beauty. With the motto “valley by nature” due to its location in the Zêzere Glacier Valley, Manteigas is proud of its astounding environmental heritage with cascades and waterfalls, natural springs and pastoral scenery. Manteigas also belongs to the Estrela Geopark (a world Park of UNESCO) that gathers the 9 municipalities that integrate (partially or totally) Serra da Estrela.

According to the latest CENSUS (in 2021), the population of Manteigas is circa 2900 inhabitants, and it has been decreasing at least since the 1950’s, when the population reached almost 5400. As in other rural areas (and generally in Portugal), the age structure of the population in Manteigas configures an inverted pyramid, with an increasing proportion of 65+ year old inhabitants and a decreasing proportion of 0–14-year-olds. As a rural area located in the interior of Portugal, Manteigas reflects the population trend visible in the country, with an increasing concentration of the population, economic activity and services in larger cities located near the cost, in contrast with a desertification of the interior and rural areas.

The main economic activities of Manteigas are directly connected to the natural characteristics of the territory: nature tourism, cheese production (the famous “Queijo da Serra”), sheep and cattle grazing, and the famous Burel, a carded wool that is an important heritage and brand of the region. Still, the region has witnessed significant economic and social changes over the past decades, with a

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transition from traditional agrarian-based livelihoods to a more diversified economy, with a growing emphasis on tourism and local entrepreneurship.

The rise of eco-tourism and nature-based activities, especially since the beginning of the XXI century, has led to an increased interest in the unique natural surroundings of Manteigas. This was capitalized by the region, with local entrepreneurs and residents establishing small guesthouses, restaurants, and outdoor adventure companies. At the same time, there have been efforts to preserve the region's cultural heritage, with initiatives to promote traditional crafts and local products.

One of Manteigas' main challenge is the balance between preserving its natural heritage and accommodating the needs of visitors, ensuring that the benefits of tourism are distributed equitably and that the environment is safeguarded for future generations.

In this context, digital skills and infrastructure in Manteigas are key to empower the population and local institutions to face current and future challenges. Digital tools can help enhancing the visibility of the territory, overcome the geographic isolation and promote accessibility to a variety of services and products.

Method

The method consisted of self-analysis workshops with groups of the community of Manteigas, based on the methodological framework of the "Reciprocal Maieutic Approach" (RMA) developed by CSC Danilo Dolci. The RMA method and the features of the sessions were adapted to the context and aims of the project, in order to focus the context analysis in the needs and desires related to the digital transformation. Besides including specific questions to address the use and awareness of digital skills and tools in the community, another adaptation made to the original RMA method was the duration of the sessions: all sessions lasted

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between 1h and 1,5 hours, instead of the 2 to 3 hours predicted in the RMA methodology. This time adjustment is explained by the availability of participants: since the vast majority of participants were from the educational community (teachers/trainers and students) it would not be feasible to engage them in sessions of 2 or 3 hours (3 sessions per participant) as this would imply major changes in the school calendar.

The self-analysis workshops were conducted with 3 target groups: 1) educational teaching staff, 2) school students, 3) adult learners. The self-analysis process consisted of 3 steps/rounds, each including 3 sessions:

1) introductory meetings per target group (1 per target group),
2) self-analysis workshops on needs and desires related to digital skills and tools (1 per target group),
3) self-analysis workshops of mixed groups with representatives of the above-mentioned target groups and with the municipality policy maker.

1. Introductory Meetings:

Participants introduced themselves briefly and shared a dream or desire. This informal start created space for participants to open up and generate a positive atmosphere. Additionally, the participants were asked about the rural area and how it is to live there. This moment allowed to get an idea of how the participants see and connect with the territory, providing valuable information about what they value the most and what are the main challenges related to digital skills, as well as their level of awareness about the importance of digital skills and how the community relies on digital tools.

2. Self-Analysis Workshops on Needs and Desires with Each Target Group:

The second round of workshops was more focused on the digital skills, more specifically: level of digital skills already present; ideas and attitudes towards

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digital skills; technologies and the current state of teaching and learning about and with digital technologies. These sessions allowed to get a more in-depth idea about the level of digital skills in the community and about the differences between the various target groups (and within each target group) in what concerns the use of digital skills in the professional and personal life. These sessions also provided valuable information about the expectations and desires of the target groups on how digital technologies could help other groups of the community and improve their life quality.

3. Mixed-Group Self-Analysis Workshops:

For the third and final round of workshops, three mixed groups were constituted with members of the groups involved in the previous sessions. Therefore, each mixed group included teachers/trainers, students and adult learners. The aim of these mixed workshops was to summarise the needs and desires identified in the previous stages and share them with other target groups, in order to understand better each other's needs, desires and where they match. This was an important step in the process to identify common needs that can be shared by the community in the sense that they all agree and are aware about their own and others' needs, interests and desires. The mixed-group self analysis workshops also included the presence of a policy maker of the municipality, who had the opportunity to listen to the participants' needs and desires, as well as to contribute with additional suggestions.

Each workshop started with a summary of the main results and findings from the previous group sessions, i.e. summary of the main needs and desires expressed by teachers/trainers, by students and by adult learners. The summary was read by the RMA coordinator, who then asked for participants to confirm, correct or add any comments they wish.

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In order to identify the needs considered most important for the community in each workshop, an active dynamic was used, which was very engaging for participants, since it allowed a different form of expressing their views than oral speech. In this part, posters were made with the identification of different groups/profiles within the community and different digital skills (based on the main needs identified in previous sessions and other skills that can be delivered by the Our Digital Village project). The groups/profiles included in the posters were: teachers/trainers; youth/students; business owners/traders/employees; seniors and citizens with adaptation difficulties. The skills that could be associated with each of the groups/profiles were: Creation of digital content; social networking; automatic scheduling of tasks; videoconferencing and other communications; web development; shaper and laser/CNC cutting; hardware component installation; 3D printing; digital security; new programming languages; digital marketing and copywriting; algorithm design; CSS and web design styles; blogging and writing for the internet; prestashop and other sales systems; Microprocessors. In this dynamic, the participants were asked to think together or individually about which competencies each group should ideally have and use sticky balls to mark the competences considered more relevant for each group.

Besides allowing to identify and summarise the most relevant needs in terms of digital skills and tools for the community, the mixed workshops offered opportunities for dialogue between groups that otherwise would not have the opportunity or know about each other's needs in what regards the use of digital skills and tools. Thus, these moments allowed to increase awareness, understanding and feeling of community.

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Participants

A total of 35 participants took part in the 9 RMA workshops held in Manteigas. Participants included: students from the school cluster of Manteigas (students from the 7th grade); students from the VET school (from the 11th grade); educational staff (teachers from the school cluster, trainers from the VET school, trainer from one NGO); adult learners (staff from the VET school, staff and beneficiaries of a local NGO, entrepreneurs, job seekers). In the last round of workshops, the local policy-maker also participated.

In total, there were 23 female and 12 male participants. The distribution of participants per group was as follows: 12 students; 13 teachers/trainers; 10 adult learners.

Round 1: Introductory Workshop – Students

Type of participant	Gender	Organization	Identification code
Student	M	Escola Profissional de Hotelaria de Manteigas - EPHM	P1S POR
Student	F	EPHM	P2S POR
Student	M	EPHM	P3S POR
Student	M	EPHM	P4S POR
Student	F	EPHM	P5S POR
Student	M	EPHM	P6S POR
Student	M	Agrupamento de Escolas de Manteigas - AEM	P7S POR
Student	M	AEM	P8S POR
Student	M	AEM	P9S POR
Student	F	AEM	P10S POR

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Student	F	AEM	P11S POR
Student	F	AEM	P12S POR

Round 1: Introductory Workshop – Educational Staff

Type of participant	Gender	Organization	Identification codes
Teacher / educator	F	AEM	P1T POR
Teacher / educator	F	AEM	P2T POR
Teacher / educator	F	EPHM	P3T POR
Teacher / educator	M	EPHM	P4T POR
Teacher / educator	F	AEM	P5T POR
Teacher / educator	F	AEM	P6T POR
Teacher / educator	F	AEM	P7T POR
Teacher / educator	F	AEM	P8T POR
Teacher / educator	F	EPHM	P9T POR
Teacher / educator	F	EPHM	P10T POR
Teacher / educator	F	AEM	P11T POR
Teacher / educator	M	AEM	P12T POR
Teacher / educator	F	EPHM	P13T POR

Round 1: Introductory Workshop – Adults

Type of participant	Gender	Organization	Identification codes
Adult of the community	F	CLDS 4G MCV	P1A POR
Adult of the community	F	CLDS 4G MCV	P2A POR
Adult of the community	F	N/A	P3A POR

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Adult of the community	M	CLDS 4G MCV	P4A POR
Adult of the community	M	AFACIDASE	P5A POR
Adult of the community	M	AFACIDASE	P6A POR
Adult of the community	F	AFACIDASE	P7A POR
Adult of the community	F	EPMH	P8A POR
Adult of the community	F	EPMH	P9A POR
Adult of the community	F	AFACIDASE	P10A POR

Round 2: Self-analysis workshop – Students

Type of participant	**Gender**	**Organization**	**Identification codes**
Student	F	EPMH	P1S POR
Student	M	EPMH	P2S POR
Student	F	EPMH	P3S POR
Student	M	EPMH	P4S POR
Student	F	AEM	P5S POR
Student	M	AEM	P6S POR
Student	M	AEM	P7S POR
Student	M	AEM	P8S POR
Student	F	AEM	P9S POR
Student	F	AEM	P10S POR
Student	M	EPMH	P11S POR

Round 2: Self-analysis workshop – Educational Staff

Type of participant	**Gender**	**Organization**	**Identification codes**

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Teacher / educator	F	EPHM	P1T POR
Teacher / educator	F	AFACIDASE	P2T POR
Teacher / educator	F	EPHM	P3T POR
Teacher / educator	M	EPHM	P4T POR
Teacher / educator	F	AEM	P5T POR
Teacher / educator	M	AEM	P6T POR
Teacher / educator	F	AEM	P7T POR
Teacher / educator	F	AEM	P8T POR
Teacher / educator	F	AEM	P9T POR
Teacher / educator	F	AEM	P10T POR
Teacher / educator	F	AEM	P11T POR
Teacher / educator	F	AEM	P12T POR

Round 2: Self-analysis workshop – Adults

Type of participant	**Gender**	**Organization**	**Identification codes**
Adult of the community	M	AFACIDASE	P1A POR
Adult of the community	M	AFACIDASE	P2A POR
Adult of the community	F	AFACIDASE	P3A POR
Adult of the community	F	AFACIDASE	P4A POR
Adult of the community	F	AFACIDASE	P5A POR
Adult of the community	F	EPHM	P6A POR
Adult of the community	F	EPHM	P7A POR
Adult of the community	M	CLDS 4G	P8A POR

Round 3: Mixed Workshop 1

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Type of participant	Gender	Organization	Identification codes
Student	M	EPHM	P1M POR
Student	F	EPHM	P2M POR
Student	M	EPHM	P3M POR
Student	M	EPHM	P4M POR
Student	M	EPHM	P5M POR
Adult of the community	M	CLDS 4G MC	P6M POR
Policy Maker	F	Municipality	P7M POR
Teacher / educator	F	EPHM	P8M POR
Adult of the community	F	EPHM	P9M POR
Teacher / educator	F	EPHM	P10M POR

Round 3: Mixed Workshop 2

Type of participant	Gender	Organization	Identification codes
Teacher / educator	F	EPHM	P11M POR
Teacher / educator	F	AEM	P12M POR
Teacher / educator	F	AEM	P13M POR
Teacher / educator	F	AEM	P14M POR
Teacher / educator	M	AEM	P15M POR
Adult of the community	F	AFACIDASE	P16M POR
Adult of the community	M	AFACIDASE	P17M POR
Adult of the community	F	AFACIDASE	P18M POR
Student	F	AEM	P19M POR
Student	F	AEM	P20M POR

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Student	F	AEM	P21M POR
Student	M	AEM	P22M POR
Student	M	AEM	P23M POR
Student	M	AEM	P24M POR

Round 3: Mixed Workshop 3

Type of participant	**Gender**	**Organization**	**Identification codes**
Policy Maker	F	Municipality	P25M POR
Teacher / educator	F	EPHM	P26M POR
Adult of the community	F	EPHM	P27M POR
Teacher / educator	F	AEM	P28M POR
Adult of the community	M	CLDS 4G	P29M POR
Teacher / educator	F	AEM	P30M POR
Teacher / educator	F	AEM	P31M POR
Teacher / educator	F	AEM	P32M POR
Teacher / educator	F	AFACIDASE	P33M POR

Information tools

The information tool was the RMA method implemented through the various workshops. All workshops (9) were held face-to-face in Manteigas, more concretely in the School (6 workshops); VET school (1 workshop); local incubator (2 workshops). In the 1st and 2nd round of workshops, the main way to collect feedback was through simple dialogue (direct questions, discussion among participants); in the 3rd round (mixed workshops) a dynamic was used, where participants were invited to paste stickers to indicate the digital

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competences/tools that they considered more needed for themselves and for other groups of the community.

Data analysis

Introductory Workshops (Round 1)

Category	Subcategory
1. Advantages and challenges of the rural community	1.1 Advantages 1.2 Challenges
2. Definition of digital skills	2.1 Ability 2.2 Use 2.3 Create Share
3. Caring about digital skills	3.1 High importance 3.2 Medium importance 3.3 Low importance
4. Reliance on digital skills	4.1 Reliance for educational purposes 4.2 Reliance for social purposes 4.3 Reliance for work purposes

Self – Analysis Workshops (Round 2)

Category	Subcategory
1. Confidence on own level of digital skills	1.1 Low level 1.2 Medium level 1.3 High level
2. Typology of digital tools	2.1 Social networks 2.2 Creative tools 2.3 Gaming tools

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	2.4 Media tools
3. Acquisition	3.1 Self-taught 3.2 School or Highschool 3.3 Private academy 3.4 Friends or relatives
4. Importance and improvement	4.1 Social aspects 4.2 Security aspects 4.3 Management aspects 4.4 Technical aspects
5. Emergent technologies knowledge and contribution	5.1 High knowledge 5.2 Medium knowledge 5.3 Low knowledge 5.4 Contribution

Mixed Workshops:

Category	Description or Subcategory
1. Introduction/ presentation	Each person introduces themselves and selects an image (out of 3) representing a scenario where they would like to be
2. Summary of conclusions	The moderator presents a summary of the conclusions of the other sessions about the needs of each group: 2.1. Needs of teachers/educators 2.2. Needs of students/youngsters 2.3. Needs of adult learners 2.4. Other needs

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3. Ranking and grouping of needs	Among the needs that were presented, which do you think are the most important for the community? 3.1. teachers/trainers; 3.2. youth/students; 3.3. business owners/traders/employees; 3.4. seniors and citizens with adaptation difficulties
4. Proposals and ideas of activities	share some ideas to be introduced and that could be ideal to propose together with our planned initiatives

Results

Introductory Workshops (Round 1)

1. In your opinion, what are the advantages and challenges of your (rural) community?

The main **advantages** identified are the lack of traffic, the calmness and the geographical location, which allows contact with nature, cleaner air, and a more relaxed lifestyle. They also mention the more direct and personalized support for those who need it, because they are involved in the community. Related aspects were also mentioned: welcoming community, the slower rhythm of life, the sense of freedom and security, opportunities to socialize; the relationship with the students is much closer (mentioned by teachers).

"Our geographical location has a positive impact, as it allows contact with nature and a more relaxed lifestyle". P6A POR

"I like the freedom and security it offers" P6S POR

Challenges: The adults raise the issue of their full schedule for family, work or community issues – being a small community, they are full of responsibilities.

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Extreme importance of time management; they need to leave Manteigas to go to the shopping centres or hypermarkets; some services are dependent on when the provider comes. The students miss a larger population to make the village more attractive to young people, e.g. lack festivals and events, activities for youngsters. And the teachers say there is lack of public infrastructure, community spaces for entertainment activities.

"It is sometimes hard to motivate yourself to leave Manteigas while transportation is complicated, and for topics like medical attention can be problematic." P6A POR

2. How do you define DIGITAL SKILLS?

In terms of **ability,** adults consider they have a knowledge gap of digital tools, but they are usually "learn by doing", use tutorials and test these tools which is a digital competence. The students notice skills in digital technologies can have different implications. The teachers say they are very interested and always try to keep up with digital development.

"I have many areas of interest and digital is one of them. I try to keep up with developments. It's a constant evolution". P12T POR

As for the **use of digital skills**, most adults don't use the computer much because only a few need these skills at work. They also point out that it is very easy for kids to use the computer because they are more familiar with it and are even required to use it at school. The students appreciate the convenience of accessing information at any time via the Internet and acknowledge that digital tools are extremely useful in schoolwork, in maintaining personal relationships, and even in researching unfamiliar topics. The teachers say it's necessary to use and adapt to technological applications and tools, even to keep your job.

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"For example, in the lockdown it helped a lot from the digital realm for school assignments, for personal relationships, or even researching things you don't know" P4S POR

Most participants make little **use of digital skills to create** but they would definitely like to do so, for example: adults would like to work on paint, word to create things and help in the day-to-day life; the students like the idea of creating games and applications, demonstrating the capabilities provided by digital tools; some teachers would like to use Canva to create advertisement for their activities.

"Many things, like working in Word, in Paint, knowing if the internet works, fixing." P10A POR

In turn, all target groups use digital skills to share and communicate: they share information via whatsapp (for example parents receive feedback from teachers), to communicating with friends and relatives. The teachers use the diverse digital tools to share teaching content, exercises, etc.

"In the lessons the texts and materials are even provided via the computer, including feedbacks to the parents." P5T POR

3. How much do you care about digital skills in your community?

All groups acknowledge the world is increasingly global and digital and value digital skills. Students use digital tools to communicate they use the computer both in virtual school and at home to do homework. The teachers say that is very important to keep up with the evolution of the world. *"I think it is important, the world is increasingly global and digital, even for access to purchases or services." P6A POR*

Some teachers believe it is unavoidable to have digital skills but they question the impact of the AI and other supposed benefits of the digital. *"Fears about AI, which I think will invade all domains and the population is not prepared to discern the*

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positive and negative consequences". P12T POR "I think that a large part of the "machines" that "bring progress" don't always bring advances or save quality time" P3T POR

4. How do you and your community rely on the use of digital services? If so, for what purposes?

Mostly teachers and students use digital services for educational purposes. Other adults mention not to have the time to learn, or the money to pay for digital training. *"Because I don't have the time to learn or the financial resources to hire an outsourcer." P6A POR*

All groups use digital tools for social purposes: adults use them to contact with others and for public services; the youth uses TikTok with friends to pass the time; some teachers whatsapp to contact parents and other social networks to contact with others. *"For IRS, doctor's appointment, prescription, she is the one who gives contacts and makes appointments, because everything is already online and is beyond the parents' capabilities." P2A POR*.

Only part of the adults (other than teachers) uses technologies for work, i.e. it depends on their specific tasks. They have fears about using digital methods of payment due to fraud and unknown consequences. Students acknowledge the importance of digital skills for the job market: *"A person with digital skills gets different job offers, motivated to talk about it and would like to work on it" P12POR.*

Self-analysis Workshops (Round 2)

1. Are you confident with your level of digital skills?

The adult learners are the less confident group about their level of digital skills. Still, they feel relatively confident with social media. *"On the networks I'm*

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comfortable, but there are programs I would like to learn." P3A POR

The teachers and trainers feel relatively confident, since they use digital skills and tools in their day-to-day work, but they would like to know better how to use some digital tools that they use only in the basic "non-paid" version.

Students have some digital assessments, so they are required to have some proficiency, plus they have one time a week to learn from teachers about ICT. They use a few tools but claim to know the basics. *"Sometimes there are digital assessments, in math, for example." P11S POR.*

2. What are the digital tools that you use or are aware of/familiar with?

Social networks (all groups): Instagram, WhatsApp, TikTok (mostly students), Facebook, Instagram, Blogs.

Creative tools (all groups): Canva, Genially, Power point, Excel, publisher. Teachers are the ones using most of these tools, including: Mentimeter, Genially, Canva, Prezi, Dojo, Classroom, GPT, Google Creator, Wix, Stop motion, Padlet.

Gaming tools (mostly students): Fifa game, War games, quiz. Teachers also use Kahoot, Discord.

Media tools (all groups): youtube

3. How did you acquire your digital skills?

Participants from all groups mention they learn(ed) by themselves and/or learn by helping older people. "*The greatest knowledge sharing is through helping each other*." P1S POR. "*I will learn as I need to*" P5T POR. Especially adult learners don't have very positive experiences with training courses: "*I am very self-taught, most of what I know, trial and error. There are some free or funded trainings, but overall, not very good too many people in class, difficulty on several levels*." P6A POR

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Some teachers have completed digital skills courses at different levels but they feel the part of "self-learning" is the most effective one. "*Although the trainings pave the way, most of the skill acquisition is self-taught*." P5T POR.

Another very relevant way of learning is by sharing with colleagues, Friends and relatives: "*We shared with each other the tools we had started using since the pandemic, thus testing to see if it worked*." P8T POR. "*Learned a lot from my daughters about social networks…*" P5A POR

Students have learned in ICT classes at school and by using the various tools proposed by teachers. They also mention to learn by watching youtube tutorials.

4. Which aspects of digital skills are more important at school (students), in teaching (educational staff), in your life (adults) and which ones would you like to improve?

Students didn't highlight specific aspects to improve at school.

For teachers, the most relevant aspects highlighted were the security and management aspects: It is always important to be updated about the security issues, both for the teachers and to raise awareness among students; Some teachers would like to know more tools that facilitate time management and project management.

Adults would like to be more comfortable in using different platforms. They learn when they need but they lack time. "*In general, the interfaces of the programmes are similar, but a bit of technical knowledge is missing. I like to be knowing how to deal with different platforms, different programs, to be able to keep up with the actuality of the work*." P8A POR. They would also like to be more confortable to install programms, e.g. for listening to music and to deal with security aspects, especially related to online transactions: "*Earlier I was afraid to enter the Credit Agricola site because of interface changes that felt might be replacing the legitimate site*." P5A POR

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5. Do you know something about Coding, Robotics, Microcontrollers and web-development, 3D modelling and printing? How do you think they could contribute to your personal and professional life?

Only a few students demonstrated some knowledge on these fields. Some of them have heard or had some experience with code and robotics, but their main interests focus on 3D printing and web development, for example to create websites, games or apps to automate kitchen tools. "*We've done some things with code. I'd like to create a website*." P9S POR. "*In class they talked about building some robotics stuff. When the printers came, we saw the proofs with the machine, but we never used it*" P9S POR.

Some teachers have knowledge of coding and robotics and would be interested to know more: "*You have to know how to work with phyton because of the math classes*." P8T POR.

The two main fields where participants showed interest were 3D printing and web development. These are common needs and desires for all groups, although for different purposes.

Mixed Workshops (Round 3)

In each workshop, a summary of the main results from the previous sessions was read by the RMA coordinator, who then asked for participants to confirm, correct or add any comments they wish. The main topics summarised were:

- Need to improve the internet connection and digital infrastructure in Manteigas;

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- Need to show how digital skills can help in the labour market and how it can be useful in the day-to-day life for various purposes: communication, services, etc.;
- The way most participants learn digital skills is “learning by doing”, as well as “learning by helping others”;
- Training sessions/courses to be organised should be more personalized and appropriate to the target group, not only in terms of content, but also timing, duration, etc.
- Important for teachers to explore better some tools in order to personalise them to the specific use they need and benefit from all the features.
- For new technologies and digital fields (like the ones proposed by the project), it is important to understand what its practical application to can be;
- Management and time management tools would be useful for the in the community, both in education settings and others.
- Online privacy and safety issues are relevant for the whole community, considering the specificities of each group.

Most conclusions were unanimously accepted by the groups, with minor additional comments, such as the one regarding online safety, where students mention to be aware of the dangers on the net and think it will not happen to them, whereas teachers were concerned about students.

After this summary, each workshop included a dynamic/game, where participants had to mark which competencies each group should ideally have. The results in each workshop are presented next, indicating how many “votes” (stickers) each competence/tool received for those who received at least 2 votes.

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At the end of each workshop, the participants were asked if they were already part of the Portuguese Facebook page of the Project (Manteigas Digital) which a large part already adhered. For the few participants who stated not to have Facebook and in order to attract young audiences, it was suggested to create and tik toks about digital skills made by students.

Results of the dynamic of the **first mixed workshop**

Skills required for Teachers/trainers	**Skills required for Youth/students**
• Social networking: 2 • Automatic scheduling of tasks: 2 • Shaper and laser/CNC cutting: 3 • 3D printing:3 • New programming languages: 2	• Digital content creation: 3 • Social networking: 3 • Automatic scheduling of tasks: 3 • Videoconferencing/other communications: 2 • Web development: 2 • Hardware component installation: 2 • 3D printing: 8 • Digital security: 4 • New programming languages: 2 • Digital marketing and copywriting: 2
Skills required for Business owners/ traders/employees	**Skills required for seniors and citizens with adaptation difficulties**
• Digital content creation: 3 • Social networking: 2 • Videoconferencing/other communications: 2 • 3D printing: 2 • Digital security: 4 • Digital marketing and copywriting: 5 • Prestashop and other sales systems: 5	• Social networking: 8 • Automatic scheduling of tasks: 3 • Videoconferencing/other communications: 3 • 3D printing: 4 • Digital security: 6 • Blogging and writing for the net: 2 • Prestashop and other sales systems: 3

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Results of the dynamic of the **second mixed workshop**

Skills required for Teachers/trainers	Skills required for Youth/students
• Digital content creation: 5 • Automatic scheduling of tasks: 2 • Videoconferencing/other communications: 3 • Web development:5 • 3D printing: 3 • Digital security: 3 • Blogging and writing for the net: 5	• Digital content creation: 5 • Social networking: 3 • Videoconferencing/other communications: 3 • Web development:5 • 3D printing: 4 • Digital security: 6 • Blogging and writing for the net: 2
Skills required for Business owners/ traders/employees	**Skills required for seniors and citizens with adaptation difficulties**
• Digital content creation: 5 • Social networking: 2 • Automatic scheduling of tasks: 4 • Videoconferencing/other communications: 4 • Web development: 6 • 3D printing: 4 • Digital security: 4 • Digital marketing and copywriting: 2 • CSS and web design styles: 3 • Blogging and writing for the net: 4 • Prestashop and other sales systems: 4	• Creation of digital content: 4 • Social networking: 4 • Videoconferencing/other communications: 4 • Web development: 3 • 3D printing: 5 • Digital security: 6 • Blogging and writing for the net: 5

Results of the dynamic of the **third mixed workshop**

Skills required for Teachers/trainers	Skills required for Youth/students
• Digital content creation: 5 • Social networking: 4	• Digital content creation: 7 • Social networking: 9

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• Automatic scheduling of tasks: 3 • Videoconferencing/other communications: 2 • Hardware component installation: 2 • 3D printing: 5 • Digital security: 6 • New programming languages: 2 • Digital marketing and copywriting: 3 • Blogging and writing for the net: 6 • Prestashop and other sales systems: 2	• Automatic scheduling of tasks: 4 • Videoconferencing and other communications: 4 • Web development:5 • 3D printing: 4 • Digital security: 8 • New programming languages: 2 • Digital marketing and copywriting: 4 • Algorithm design:2 • CSS and web design styles: 2 • Blogging and writing for the net: 3 • Prestashop and other sales systems: 14
Skills required for Business owners/ traders/employees	**Skills required for seniors and citizens with adaptation difficulties**
• Digital content creation: 5 • Social networking: 6 • Automatic scheduling of tasks: 2 • Videoconferencing/other communications: 2 • Web development: 2 • 3D printing: 2 • Digital security: 4 • Digital marketing and copywriting: 3 • Blogging and writing for the net: 2 • Prestashop and other sales systems: 2	• Creation of digital content: 3 • Social networking: 2 • Automatic scheduling of tasks: 4 • Videoconferencing/other communications: 2 • Digital security: 6 • Blogging and writing for the net: 5 • Prestashop and other sales systems: 8

Discussion and conclusions

Due to the characteristics of the rural area of Manteigas (geographic, social, economic), digital skills can pay an important role in the region at various levels.

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The groups involved in this research acknowledge the importance of digital skills and tools, as well as the increasing need to use them in today's global world.

Participants point out that they most of their digital skills have been acquired autonomously (self-learning; attempt and error) or through the help of others (relatives, friends). It became evident that the different target groups have different needs and aspirations regarding the use of digital skills, but at the same time there were common concerns expressed by all the groups, specially in which regards the use of digital skills and tools for the community (e.g. public services, communication).

In summary, **youngsters/students** point the following main needs:

- Better internet access for effective digital engagement.
- Demonstrate the usefulness of computers: it is important to show the practical applications of computers and how they can benefit young people, since they give preference to the cell phone which they use mostly for social networks.
- Teaching good practices and digital skills: provide guidance on responsible online behaviour, cybersecurity, etc.
- Highlighting job opportunities: demonstrate the range of job prospects available with digital skills and how these skills can contribute to their professional growth.
- Detailed information about the digital areas of the project: provide comprehensive explanations and practical examples of various digital domains to generate interest and understanding. Given that, most of the young people did not raise any knowledge in the five areas named for the project.

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- Customized training based on the levels of the participants, considering their prior knowledge. The heterogeneity of the group does not provide common ground for all students.

Teachers/trainers point the following main needs**:**

- Improve connection to effectively deliver digital education.
- Training and support to improve their proficiency in using digital tools and technologies in teaching. While many already use tools for teaching, they still need a deepening in the skills of these tools and training in the new types of technology for teaching.
- Better public infrastructure: ensure that schools and training centres have adequate infrastructure and resources to support digital learning.
- Information on technologies and security: educate teachers and trainers on emerging technologies and best practices for maintaining security and privacy
- Customized training according to the needs and levels of the group: offer training programs that meet the specific needs and skill levels of the teachers and trainers.
- Specific training for school-related needs: provide instruction on relevant topics, such as 3D printing and coding, to empower teachers in subjects like mathematics.
- Information about the five project areas to get teachers acquainted with the topics; demonstrate in a practical way what these tools do, and how they can help the various areas of teaching.

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Adults point the following main needs:

- Flexible training based on group levels: offer adaptable training programs that cater to the diverse skill levels and backgrounds of adult learners, rather than focusing only on specific occupations. Digital training already exists, but participants complain that it is intended for e.g. teachers, and so others cannot participate, or if they are teachers they are conditioned to a different training than their skill level.
- Practical and introductory training sessions to enable adults to apply digital skills in practical contexts, e.g. public services that already provide online services.
- Knowledge and proficiency in using various digital tools and platforms, both for professional and personal purposes, beyond basic computer functions. Some digital tools are currently indispensable for commerce, but because they are afraid to use them, they end up lagging behind and not adapting.
- Helpdesk for the elderly population and information sessions about digital security and how to protect themselves.
- Free training for adults to develop digital literacy in different fields.
- Time management in the community: helping adults effectively manage their time to participate in digital learning activities alongside their other responsibilities.
- Integrating different age groups into digital learning: encourage intergenerational learning and collaboration to create a supportive environment for adults.

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- Awareness of online dangers and safety: potential risks and precautions needed to ensure their safety while using digital platforms.

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