

Sub-study II

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Media education for older people - views of stakeholders

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ABSTRACT

This study is a part of an ongoing design-based research (DBR) project aimed at designing, piloting, and assessing a digital study module focused on older people's media education. In order to gain a better understanding of older people's media literacy and develop the teaching of adult educators, participatory creative workshops for a total of thirty-one stakeholders (older people and professionals who work with them) were conducted. Research data was collected from these workshops through a case exercise from stakeholders and a questionnaire from older people during the year 2019. According to the stakeholders, older people need more training in all the dimensions of media literacy, which is understood as competence in accessing, using, understanding, creating, and critically analyzing different media texts. However, *use* dimension was the most featured dimension in the data. In addition, older people are a heterogeneous group and it is essential that media education is tailored to meet the current needs of older people. The results indicate that media education should be designed especially to address the needs and individuality of older people.

KEYWORDS

Older people; media education; media literacy education; design-based research

Introduction

The sixty-and-over age group is a large and growing group all over the world. In Europe the number of people 65 years or older is expected to be 27% of the population by 2050 (World Health Organisation [WHO], 2013). In Finland, the significant increase in members of this age group requires that media education and educational services change. According to David Buckingham (2003, p. 4), media education is generally defined as “the process of teaching and learning on media; media *literacy* is the outcome.” The main goal of media education is to develop media literacy which is in this study understood as competence in accessing, using, understanding, creating, and critically analyzing different media texts, for example, audio (speech, sound, music), visual images (moving or still), and written language, in various contexts (Aufderheide, 1997; Buckingham, 2003; Ofcom, 2015, 2019).

In addition, the amount of practical work and research on media education for older people is relatively low, especially compared to children and young people (Petranova, 2013; Rasi, Vuojärvi, & Hyvönen, 2016). Not all older people have the required media literacy, and there are needs in all areas (*use, understand, create*) of media literacy (Rasi et al., 2016). Most of the previous studies also focus on older people's use of information and communication technologies (ICTs) and digital media (Age UK, 2016; Rasi et al., 2016; Xie, 2007). For this reason, more research is needed on critical media literacy and media production (Rasi, Vuojärvi, & Rivinen, 2019).

The concept of media literacy adapts to changes in society, culture, and evolving technology (Kellner & Share, 2005) and it is also understood as a civic skill and lifelong process, which should be developed by all ages to meet the demands of that time (Petranova, 2013; Rasi, Vuojärvi, & Ruokamo, 2019b). During the lifelong process, older people's interests and needs are reshaped (Rasi et al., 2019b). Recently, studies about the lack of digital news literacy have been published (Guess, Nagler, & Tucker, 2019), and better

media literacy is considered necessary to improve older people's perceived health status (Eronen, Paakkari, Portegijs, Saajanaho, & Rantanen, 2019). The impact of improved media literacy also extends to decreasing loneliness, becoming an active citizen, being more independent, and improving the quality of life (e.g. Blažun, Saranto, & Rissanen, 2012; Boulton-Lewis, Buys, & Lovie-Kitchin, 2006; Petranova, 2013; Vaportzis, Martin, & Gow, 2017).

According to Boulton-Lewis (2010, p. 225), "Little research has been undertaken where the elderly themselves are asked about learning and education." However, some well-established instructional methods and pedagogies to support older people's media literacy have been identified (e.g., Castilla et al., 2018; Castro Rojas, Bygholm, & Hansen, 2018; Chiu et al., 2016; Kim & Merriam, 2010; Xie & Bugg, 2009). According to Rasi et al. (2019), formal and teacher-centered pedagogies and individual- and learner-centered pedagogies are the most used pedagogical approaches in media literacy interventions. In addition, it is generally seen that the training needs of older people are related to their everyday lives and the devices they use (Lee & Kim, 2019; Patrício & Osório, 2016; Vroman, Arthanat, & Lysack, 2015).

In general, the following pedagogical approaches have been found beneficial among older learners: individual and community-based learning in small groups or one-to-one tutoring from peers, younger generations, and professional teachers (Boulton-Lewis et al., 2006; Brown & Strommen, 2018; Castilla et al., 2018; Castro Rojas et al., 2018; Kim & Merriam, 2010; Rasi et al., 2019; Vacek & Rybenská, 2016; Xie, 2011). However, Xie (2007) criticizes younger generations, who, Xie argues, can be impatient teachers for older people. Moreover, it is also important that older people get help when needed (Xie, 2007) and their declining cognitive abilities are supported (Castro Rojas et al., 2018).

The learning environment should be supportive, friendly, and respectful (Castro Rojas et al., 2018; Kim & Merriam, 2010; Xie, 2007). Physically close and familiar places (e.g., senior centers, libraries) can serve as venues for successful learning for older people (Xie & Bugg, 2009). According to Strover, Whitacre, Rhinesmith, and Schrubbe (2019, p. 4), public libraries play a crucial role, especially in rural areas, by "ensuring that everyone has access to contemporary communications technologies." They argue that "libraries [have] quickly developed into sites for connectivity as well as sources of digital expertise and literacy training."

Keeping the above issues in mind, the aim of this study is to increase understanding of the state of older people's media literacy and to find out how media education should be implemented. This knowledge will be used in the present design-based research (DBR) study, where the aim is to design, pilot, and assess a digital study module focused on older people's media education. The research questions are: 1) What are the levels of older people's media literacy? 2) What dimensions of older people's media literacy require training and support? and 3) What kind of pedagogical approaches are suitable for supporting older people's media literacy? This study is especially interested in finding out stakeholders' (both older people and the professionals who work with them) views on the topic. Hence, the participatory creative workshops for stakeholders were organized.

Material and methods

General design

This study is part of the first cycle of an ongoing design-based research (DBR) study. DBR is typically defined as "a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually-sensitive design principles and theories" (Wang & Hannafin, 2005, p. 6–7). In this study, stakeholders in older people's media education play an active role in building a solution, along with the researchers (Castro Rojas et al., 2018; Wang & Hannafin, 2005).

In the first phase of the ongoing DBR study, a systematic literature review was conducted. The results show that older people's media literacy interventions should be developed and enriched in terms of aims, pedagogical approaches, contents, recipients, and providers (Rasi et al., 2019). The present study reports on participatory creative workshops in which stakeholders participated. The data collection combined qualitative and quantitative data.

Data collection and participants

The research questions are answered through four participatory creative workshops for adults older than 65 and adult education experts from the University of the Third Age, non-governmental organizations, adult education organizations, and libraries. Workshops were attended by a total of thirty-one ($n = 31$) stakeholders. Sixteen of the participants were older people (11 female, five male) aged 67–87, and 15 were professionals (14 female, one male). Professionals were contacted directly by an e-mail and older people were contacted through a snowballing technique. Workshops were held in Rovaniemi and Helsinki, Finland, in the spring 2019. In Rovaniemi, one workshop was organized for older people and one for professionals, and a similar implementation was also held later in Helsinki. Four-hour workshops were designed and held in cooperation with another researcher.

In the workshops, the participants engaged in a creative case exercise. The purpose of the exercise was to design in pairs an ideal media literacy training program for a pre-invented hypothetical case of an older person. Each pair in the workshop was given one of the four different cases with different background information (name, age, family, place of residence, technology use history). The case exercise yielded a total of 16 training designs, which were presented to other participants. Presentations were voice-recorded and transcribed by a professional transcription service. The duration of the recordings varied from nine minutes to an hour. A total of 57 pages of transcribed data (12-point Calibri, spacing 1.0) were analyzed.

In addition, older people ($n = 16$) filled out a questionnaire that contained a total of twenty-two questions. The first seven questions determined the background of the participant, three of which were open-ended (age, habitation, profession) and four of which were multiple-choice (education, gender, work situation, housing situation) questions. The next six questions, covering three to 10 multiple choice sub-statements, concerned media literacy (e.g. Aufderheide, 1997) through the following themes: purchase and use of devices and applications; searching, understanding, and evaluating information; privacy protection and online social behavior; and creation of online contents. The questionnaire items were translated into Finnish on the basis of a form made by Helsper, van Deursen, and Eynon (2015). The items were evaluated on a scale of 1–5 (1 = not true at all to 5 = completely true). At the end of the multiple-choice questions, participants had to circle skills from the previous themes in which they felt they needed more training. The questionnaire also included four feedback questions (three multiple-choice and one open-ended) and five free-form questions that could be answered if respondents wanted to take part in the future research (one multiple-choice question and four open-ended questions).

Data analysis

The transcribed data was reviewed using content analysis methods (Dinçer, 2018). Hence, the data was exported to the analysis software NVivo (version 12) for more detailed analysis. The analysis was based on the areas of media literacy (*use, understand, create*), which serve as analysis categories in this study (Aufderheide, 1997). In addition, the analysis of pedagogical approaches was based on previous research (Rasi et al., 2019). Therefore, the analysis is mainly deductive.

The analysis produced four main categories (area of media education, pedagogical approaches, teacher, venue) that divided into more specific subcategories. Three to 15 subcategories formed, depending on the main category to which they belonged. In addition, the five-page questionnaires were reviewed and tabulated in Microsoft Word. One participant provided two values for one questionnaire item. Therefore, the average was calculated and included in the analysis.

Results

Levels of media literacy among older people

Skills that received about half or over half of the evaluations from the questionnaire ($n = 16$) were highlighted. According to the respondents' self-evaluations, the weakest skills are programming language,

website designing, and creating something new from materials found on the Internet (see Table 1). In turn, the strongest skills are as follows: opening a new tab in a browser, connecting to WiFi, and picture and video taking and sharing them on social media. Turning off push notifications received 43.8% of the evaluations that landed in the middle (3 = I cannot say). In addition, respondents who did not evaluate the skill of updating status on social media wrote on the questionnaire: "I don't use or share information on social media," which explains the missing evaluation.

Table 1. Respondents' evaluations of their media literacy on purchase and use of devices and applications, as well as creation of online content from the questionnaire.

	Not true at all	Not very true	I cannot say	Fairly true	Com- pletely true	Miss- ing
Media literacy contents on a scale of 1–5 (1 = not true at all to 5 = completely true)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
I can save the picture I found on the Internet	3 (18.8)	1 (6.3)	4 (25.0)	3 (18.8)	5 (31.3)	0
I can change my private settings (e.g., Facebook)	5 (31.3)	2 (12.5)	5 (31.3)	2 (12.5)	2 (12.5)	0
I can use a programming language	14 (87.5)	1 (6.3)	1 (6.3)	0	0	0
I can open downloaded files	1 (6.3)	3 (18.8)	1 (6.3)	6 (37.5)	5 (31.3)	0
I can use keyboard shortcuts (e.g., CTRL + C for copying or CTRL + S for saving)	3 (18.8)	1 (6.3)	3 (18.8)	6 (37.5)	3 (18.8)	0
I can open a new tab in a browser	0	4 (25.0)	2 (12.5)	2 (12.5)	8 (50.0)	0
I can install applications for mobile devices (e.g., smartphone, tablet)	6 (37.5)	2 (12.5)	0	5 (31.3)	3 (18.8)	0
I can keep track of how much it costs to use a particular application	6 (37.5)	3 (18.8)	3 (18.8)	3 (18.8)	1 (6.3)	0
I can buy things in the application	5 (31.3)	2 (12.5)	0	6 (37.5)	3 (18.8)	0
I can turn off sharing my location (e.g., Facebook or Google Maps)	5 (31.3)	0	3 (18.8)	3 (18.8)	5 (31.3)	0
I can connect to a WiFi network (wireless network)	3 (18.8)	0	0	4 (25.0)	9 (56.3)	0
I can turn off push notifications for different applications	5 (31.3)	3 (18.8)	7 (43.8)	1 (6.3)	0	0
I can block pop-ups that promote paid apps, games, or services	5 (31.3)	2 (12.5)	4 (25.0)	3 (18.8)	2 (12.5)	0
I can share video or music content I create online	6 (37.5)	1 (6.3)	5 (31.3)	4 (25.0)	0	0
I can edit or make simple changes to content on the Internet that someone else has created	4 (25.0)	4 (25.0)	6 (37.5)	2 (12.5)	0	0
I can create something new from videos or music, which I found on the Internet	9 (56.3)	7 (43.9)	0	0	0	0
I can design a website	11 (68.8)	3 (18.8)	1 (6.3)	1 (6.3)	0	0
I can update my status on the social media site I use the most	4 (25.0)	1 (6.3)	4 (25.0)	4 (25.0)	2 (12.5)	1 (6.3)
I can take a picture or video on my smartphone and share it on social media	3 (18.8)	1 (6.3)	1 (6.3)	2 (12.5)	9 (56.3)	0

Skills relating to protecting a smartphone with a PIN or a display pattern and removing a person from contacts were considered one of the strongest skills, according to the results (see Table 2). In addition, choosing the most appropriate keywords for Internet searches and finding the page that respondents have previously visited received about half or over the half of the evaluations on the value "4 = fairly true." However, respondents evaluated knowing what kind of licenses or copyrights can apply to content on the Internet; comparing similar applications and choosing the most reliable one; and keeping the same files, contacts, and applications on all the devices they use in the middle

(3 = I cannot say). One respondent forgot to answer or overlooked the question related to finding information on how to use smartphones safely. However, the respondent also pointed out that it was a skill in which s/he felt s/he needed more training (see Table 2).

Table 2. Respondents' evaluations of their media literacy on searching, understanding, and evaluating information, as well as privacy protection and online social behavior from the questionnaire.

	Not true at all	Not very true	I cannot say	Fairly true	Completely true	Missing
Media literacy contents on a scale of 1–5 (1 = not true at all to 5 = completely true)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
I find it easy to check if the information I find on the Internet is true	3 (18.8)	1 (6.3)	6 (37.5)	5 (31.3)	1 (6.3)	0
I find it easy to choose the most appropriate keywords for Internet searches	1 (6.3)	0	2 (12.5)	9 (56.3)	4 (25.0)	0
I think it is easy to find the page on which I have previously visited	1 (6.3)	0	2 (12.5)	8 (50.0)	5 (31.3)	0
It is easy for me to determine if I can trust the website I found	2 (12.5)	4 (25.0)	6 (37.5)	3 (18.8)	1 (6.3)	0
Sometimes I end up on the website with no idea how I got there	2 (12.5)	4 (25.0)	5 (31.3)	4 (25.0)	1 (6.3)	0
I know what kind of licenses or copyrights apply to content on the Internet	5 (31.3)	2 (12.5)	8 (50.0)	1 (6.3)	0	0
I can find information how to use your smartphone safely	3 (18.8)	1 (6.3)	3 (18.8)	6 (37.5)	2 (12.5)	1 (6.3)
I can compare similar applications and choose the most reliable one	4 (25.0)	2 (12.5)	7 (43.8)	3 (18.8)	0	0
I know what kind of content can and cannot be shared on the Internet	2 (12.5)	1 (6.3)	3 (18.8)	6 (37.5)	4 (25.0)	0
I can remove a person from my contacts	1 (6.3)	1 (6.3)	1 (6.3)	6 (37.5)	7 (43.8)	0
I know in what situation I can share information on the Internet and in what circumstances I cannot	3 (18.8)	0	3 (18.8)	4 (25.0)	6 (37.5)	0
I can behave on the Internet as the situation requires	2 (12.5)	0	4 (25.0)	6 (37.5)	4 (25.0)	0
I can change sharing settings to who can see what I share (friends, friends of friends, everyone)	4 (25.0)	4 (25.0)	3 (18.8)	2 (12.5)	3 (18.8)	0
I can keep the same files, contacts, and applications on all the devices I use (e.g. smartphone, tablet, computer)	4 (25.0)	0	7 (43.8)	4 (25.0)	1 (6.3)	0
I can protect my smartphone with a PIN or a display pattern	4 (25.0)	0	3 (18.8)	2 (12.5)	7 (43.8)	0

The questionnaire included a space for open feedback. Although five comments concerned the clarity and comprehensibility of the questionnaire, five comments revealed that it was difficult for respondents to evaluate their expertise in a specific skill because they did not own or use the relevant applications (e.g., Facebook) or devices (e.g., smartphone, tablet). In addition, one of the respondents noticed how little s/he knew about things. Another respondent reported feeling stupid and continued to comment: "I think I'll finish right away. I do not have enough interest, strength, and skills." Finally, one comment was that it is sometimes difficult to generalize statements, and another was that it is difficult to measure skills on a scale.

Dimensions of older people's media literacy

The case exercises and the questionnaire answer the second research question. It is also important to notice that the designs in the case exercises could be a combination of several dimensions, even though the main and partial goals were coded separately in NVivo (see Table 3). In addition, Table 3. Presents the identified dimensions from the evaluations in the questionnaire.

Table 3. Identified dimensions of media literacy from the case exercises and the questionnaire.

Dimensions of older people's media literacy (n = number of designs)	Ideal media literacy training contents	Dimensions of older people's media literacy (n = number of circled items)	Questionnaire items
<i>Use</i> (n = 16)	<ul style="list-style-type: none"> - Devices, equipment, terminology (tablets, cell phones, hybrid tv, computers, laptops, scanner, printer, WLAN, WiFi) - Communication (online communities, e-mail, video call, text message, other instant messaging) - Internet skills - Updating media skills - Online gaming/e-sports - Sending photos and videos - Social media (Facebook, Twitter, Pinterest, Skype, WhatsApp, Messenger, YouTube, Yle Areena, Elävä Arkisto, live cams) - File management (cloud services, saving, purifying) - Settings management - Google and other search engines (information about health, cultural events, travel schedules, weather, news) - Online services (bank, library, health, stock market, entertainment, retirement pension, tax, tickets, transport, news, criminal record) - Applications (buying applications, travel, parking) - Connecting to WiFi 	<i>Use</i> (n = 48)	<ul style="list-style-type: none"> - Application purchases and accounting - Data synchronization between different devices - Blocking pop-ups - Connecting to WiFi - Using a programming language - Installing apps for mobile devices - Editing privacy, location, and sharing settings - Turning off push notifications - Computer skills - Internet skills - Data management
<i>Create</i> (n = 6)	<ul style="list-style-type: none"> - Writing comments or leaving sale notices on social media sites (Twitter, Facebook, Tori.fi) - Videographing - Photographing - Photo editing 	<i>Create</i> (n = 13)	<ul style="list-style-type: none"> - Sharing self-created material on social media (e.g., pictures, videos, music) - Designing a website - Updating status on social media - Creating content on from pre-made videos or music - Edit or making simple changes to content on the Internet that someone else has created
<i>Understand</i> (n = 3)	<ul style="list-style-type: none"> - Technology-supported film education - Reviewing the validity and reliability of the found information - Understanding of connection management (WLAN, WiFi) - Copyright 	<i>Understand</i> (n = 30)	<ul style="list-style-type: none"> - Finding information on how to use smartphones safely - Comparing applications and choosing the more reliable one - Evaluation of the truth of the website and information - Selecting the most appropriate keywords for Internet searches - Understanding how to find and end up on a website - Knowing when and what kind of content can and cannot be shared on the Internet - Behaving on the Internet as the situation requires - Knowing what kind of licenses or copyrights apply to content on the Internet

Use

All of the ideal media literacy training designs focused fully or partly on the use of ICTs and digital media. Use is particularly emphasized in devices, communication, social media, and online services contents. Based on the data, the most popular designs were tablet and smart-phone trainings. Also, teaching to use a specific application (e.g., Skype, Instagram) was popular in some designs. In addition, staying in contact with family members and friends was considered especially important, which is why designs often involved communication applications. Social media was used in communication, but also for voting, enjoying entertainment, being part of a specific online community, and following news. In addition, online services were often referred to in the designs. The most needed help was the use of e-banking, but other online services were also mentioned (e.g., library, health, tax).

Create

None of the designs focused entirely on producing different media texts, but six of the designs were coded into this category. Coded designs had elements of the create dimension, although the designs were often related to training in the use of a device or digital media. In any case, the coded designs focused mostly on video- or photographing and photo editing. Some of the designs briefly mentioned, for example, creating a new WhatsApp group or commenting on social media (e.g., Twitter).

Understand

Three designs were coded into the category understand. However, only in one design was understand the main goal for older people's media literacy training. The design was technology-supported movie education, where older people watched videos on a current topic and discussed it. In this design, the discussion was central, not the use of devices. The other two coded designs had only some elements of the dimension of understand. The elements were related to evaluation of the trustworthiness of information and understanding connection management and copyright issues.

According to the questionnaire, older people's primary training needs were mainly the *use* of ICTs and digital media (see Table 3). Using a programming language, editing sharing settings, and data management appeared often in the use category. The second largest dimension was *understand*. In this category respondents reported, for example, that support in finding the truth behind the information or website was needed. In addition, respondents required more training in comparing similar applications and choosing the most reliable one. The *create* dimension was the least-needed skill according to self-evaluation. However, support was considered needed, for example, when creating something new (e.g., video).

Pedagogical approaches supporting older people's media literacy

The data analysis process of the designs in the case exercises yielded a total of 15 different classifications, which were clustered into the following categories: 1) *individual- and learner-centered pedagogy*, 2) *formal and teacher-centered pedagogy*, and 3) *blended and online pedagogy* (see Table 4). It is worth noting that several pedagogical approaches may be used in the participants' designs, although the approaches are listed separately in the table.

Table 4. Coding process and pedagogical approaches.

Pedagogical approach (n = number of case exercises)	Clustered category	Key characteristics
Need-based (n = 16) Contextual (n = 16) Individual instruction (n = 12) Peer-to-peer teaching (n = 10) Intergenerational learning (n = 5) Self-directed (n = 4)	Individual- and learner-centered pedagogy	<ul style="list-style-type: none"> - Case older people's background and needs influenced the design of the content - The learning goals were determined by case older people's own needs - Preferred to use their own devices - Teaching in natural places for older people - Learning with or from younger generations and/or peers - Practice on their own time and apply learned knowledge, for example when working with another device
Face-to-face (n = 16) Learning by doing (n = 16) Direct instruction (n = 13) Collaborative learning (n = 12) Task-based learning (n = 3)	Formal and teacher-centered pedagogy	<ul style="list-style-type: none"> - Designed by an expert - Course length was specified - Homework and printed training manuals - Could contain lectures - One or more teacher - Face-to-face and interactive training - Practicing in small groups and in pairs or having one-on-one teaching.
Blended learning (n = 6) Remote web-based learning (n = 2) Technology supported collaborative working (n = 1) Simultaneous learning with a robot (n = 1)	Blended and online pedagogy	<ul style="list-style-type: none"> - Face-to-face learning was supplemented by distance learning - Online training (e.g., using search engines, shopping) often placed next to face-to-face learning situation - Online information searches

Individual and learner-centered pedagogy

All the designs focused on pre-invented hypothetical cases of an older person's background information and technology history, especially emphasizing the importance of need-based and individual approaches. Case older people's interests and needs seemed to determine the approaches, content, and learning goals in the designs. Also, the importance of the everyday life of older people was often highlighted in the designs, for example, in that the support provider went to older people's homes to teach things raised from the daily lives and devices of older people (Lee & Kim, 2019; Patrício & Osório, 2016). One design opposed the idea that a stranger should come to older people's homes. These kinds of practical arrangements were also coded into contextual categories. All the designs were unique and included various contextual functions, such as Karelian pie and coffee breaks, peer support at the bar with a glass of beer, and weekend-long training at the spa.

Designs often included the one-on-one pedagogical approach, and training was based on case older people's experiences, needs, interests, learning goals, habits, and abilities to use a device. Also, feelings were mentioned briefly in a couple of the designs where the case older people wanted to learn to use devices to ease their fears or to become more independent. In five designs, family members (e.g., children, grandchildren) were named as support providers. In two groups, peers and experts were named in the designs more than family. Peer-to-peer teaching was considered to be important in nine designs, because peers may have, for example, better understanding of the challenges associated with chronological age. The self-directed approach, where the learner takes an active role in their learning process, surfaced only a few times (Hiemstra, 1999). Most of the coding referred to practicing independently and applying learned knowledge at home.

Formal and teacher-centered pedagogy

Several designs demonstrated formal and traditional pedagogy, where the teacher is the central source of the information and the approaches, content, and learning goals come mainly from the education provider (Khalaf, 2018). According to the data, most of the designs used some kind of expert (e.g., adult educators, bank and library clerks) as the support providers (Chu & Chu, 2010; González, Paz Ramírez, & Viadel, 2015). In addition to the expert, there may have been other

facilitators in teaching situations (e.g., family, volunteers). Some designs also reported classroom-like settings, even though support providers mainly preferred to get into older people's own or their children's homes. These classroom-like settings included one or more teachers and offered some activities alongside the short lecture and introduction sections. Moreover, classroom-like settings mostly offered fixed-length courses (e.g., ten times instructions, eight weeks), and training was conducted by an experienced instructor. The content and learning goals of the training were often decided in advance by the teacher, but the abilities and wishes of the participants were taken into consideration to some extent.

All the designs were based on the learning-by-doing approach because the skills were learned while practicing them. In the task-based approach category were mainly coded tasks (e.g., homework) that older people had to deal with themselves, and after completing the assigned tasks, the output was reviewed and discussed. Homework, especially with printed training manuals, was considered important according to some designs. In addition, all the designs included face-to-face training. Older people worked in small groups (e.g., with one or two other participants, or with nine participants and a couple of volunteer instructors), or the training was carried out through one-on-one teaching. Older people also wanted to learn a little at a time, and the speed should not have been too fast nor the teaching hours too long (e.g., one to three hours based on individual progress, no eight-hour long sessions). According to a few designs, there should also have been time for peer interaction, because older people have a lot of knowledge and skills on their own and can thus act as peer teachers to one another. Such a possibility would increase, *inter alia*, collaborative and community spirit. Moreover, in two designs, community was also reflected in the fact that partners went to study together.

Blended and online pedagogy

Designs that included, either fully or partly, actions and exercises in an online environment (e.g., search engine usage and understanding, borrowing books online, online shopping), were coded into this category. For example, in one design, Google was used to find a travel schedule and buy tickets, and in another design the case older people logged onto an online health service to view their own health information. However, the clearest example of blended learning was when older people were taught to use Skype. First, older people were taught to use Skype face-to-face and, after that, remotely with a family member. In addition, remote web-based learning, or using the Internet to find information or different organizations (e.g., non-governmental organizations, other senior services) that offer support online, was also mentioned. Moreover, one design used technology-supported collaborative working in a service house, where older people came together to watch videos and talk about the current topic. Simultaneous learning with a robot was also mentioned briefly in a one design. In this design, older people went to learn in an e-lab where they could ask help from a robot during the lecture.

Discussion and conclusion

This study presents complementary information about older people's media education and what their media education should look like. The research questions are: 1) What are the levels of older people's media literacy? 2) What dimensions of older people's media literacy require training and support? and 3) What kind of pedagogical approaches are suitable for supporting older people's media literacy? The topic was approached directly by the older people themselves and those who worked with them.

The results from the questionnaire show that not all of the respondents own or have interest in using some specific devices (e.g., smartphone, tablet) or applications (e.g., Facebook). Because of this, some of the respondents reported that it was hard to evaluate something that they did not use or own. However, it can be concluded from the results that the respondents' weakest skills were related to purchasing and using devices and applications and creating online content, and the strongest skills were associated with the same aforementioned themes, as well as privacy protection and online social behavior (Aufferheide, 1997; Ofcom, 2019). For example, respondents evaluated

programming language and website designing as the weakest skills. Taking pictures or videos on a smartphone and sharing them on social media was found to be one of the strongest skills. However, it is difficult to say what the weakest or the strongest skills really are because we need to remember that older people are a heterogeneous group and media education should be based on their own needs. Differences can also be found between cultures, which prevents generalizations (Musset, 2015).

Research results revealed several training needs in all the dimensions of media literacy (*use, understand, create*) (Ofcom, 2015). However, *use* of ICTs and digital media emerged more often than *create* and *understand* (Rasi et al., 2019). *Use* mostly involves daily digital tasks for which older people use Internet (e.g., communication, digital services, social media). Trainings on the use of ICTs and digital media are already available, but based on the results, more are needed. The results also raise questions as to whether existing trainings and support meet the current needs of older people, whether the used approaches are suitable for them, and whether older people truly know what kind of training they might need to improve their media literacy (*use, understand, create*)? Moreover, the number of older people with higher skills and experiences in the use of ICTs and digital media will increase in the future. This will also have implications for media education. Therefore, up-to-date research and developed trainings to support older people's media literacies are needed. Research should be carried out especially among stakeholders.

This study highlights some key factors that need to be considered when designing and implementing media literacy training for older people. According to the results, individual- and learner-centered pedagogies and formal and teacher-centered pedagogies are seen to be the most preferred approaches by the stakeholders, where need-based and individuality approaches are highlighted (Patrício & Osório, 2016; Rasi et al., 2019). References to blended learning and online pedagogy were also found, but to a much lesser extent than the above-mentioned pedagogies. However, blended and online learning should not be completely excluded, because it could be a good alternative for older people who are, for example, physically restricted or homebound (Formosa, 2012).

Results show that older people prefer to get support in an interactive, face-to-face, and collaborative way, as well as that older people learn by doing, where family, peers, and other experts provide support when needed (Xie, 2011). Older people's devices used in their everyday lives have also been considered important regarding media education. In addition, providing formal and informal education and taking the support to older people's homes have also been seen as workable approaches. In addition, support could be offered in other familiar places (e.g., libraries, organizations) (Xie & Bugg, 2009). For example, in Finland libraries have taken an active role in enhancing digital skills of older people (Xie & Bugg, 2009).

Limitations

Most of the participants were female and the study focused on older people in only two cities. Therefore, generalizations cannot be made. In addition, the questionnaire could have been broader in some respects and included, in general, more open-ended questions. In the future, observation and interviews are also needed.

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