EDLAH Deliverable 4.3

Deliverable 4.3
Demonstration and report

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Contents

1 Introduction

During the month of August 2015, we performed the third trial (demonstration phase), with the aim to evaluate the final prototype of the EDLAH project. The test was conducted with a group of 10 seniors from MRPS and 11 seniors from KG&S. The two groups of users were provided with the EDLAH solution for a period of at least three days. Contrary to the first and second trial, the third trial was not performed in a controlled environment. In this deliverable, we will also present the overall results, by comparing the results collected in the three trials. The final results will also be discussed in light with the success indicators of the project, namely: (1) increase usability of the system, (2) increase users' overall satisfaction, (3) increase in personal confidence of users, participating in the project, due to the use of EDLAH, reduce of the technological and psychological barriers for older people, in the use of computer technology, (4) positively impact on the quality of life, health and social interaction of end users.

FIGURE 1. MRPS RESIDENT USING THE EDLAH SOLUTION AT HOME.

FIGURE 2. MRPS RESIDENT USING THE EDLAH SOLUTION AT HOME.

2 Methods

2.1.1 The prototype tested

The final prototype tested in the third trial included the following applications:

- Medication
- Calendar
- Internet Browser
- Skype
- Social Network (Journal, Articles, Photos)
- Health Devices
- Nutrition
- Object Locator
- Patience (Solitaire) card game (UK only)

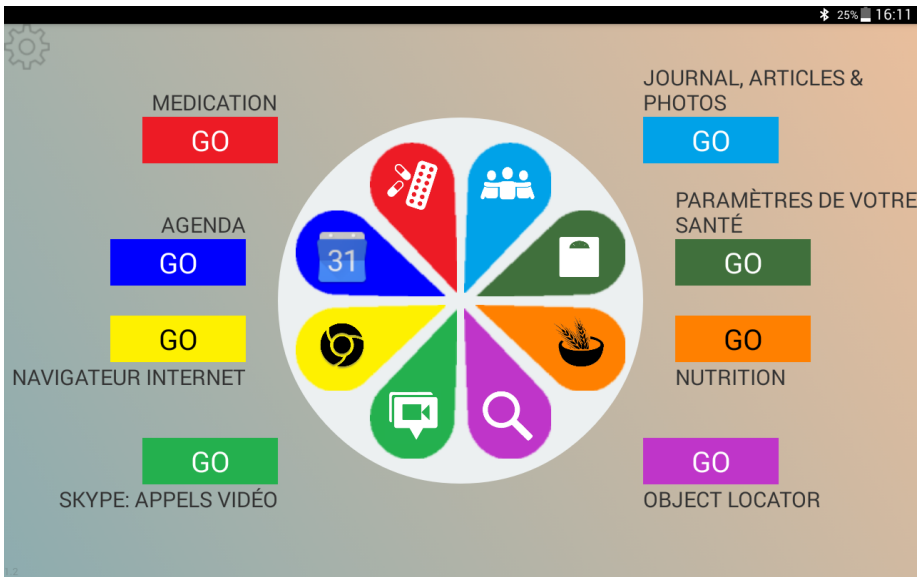


FIGURE 3. MAIN SCREEN OF THE EDLAH SOLUTION.

2.1.2 Material and procedure

Preparatory phase: content and configuration

During the preparatory phase investigators prepared the content for the applications and configured – in close contact with technical partners – the tablets for the participants:

- Medication Application: The medications of each participant were added at the beginning of the test phase.
- Agenda Application: the Agenda (Calendar) was associated with a Google Account created ad hoc for each participant.
- Internet Browser: the links proposed in the main screen of this Application were: (1) The MRPS website[1], (2) The TPG website[2], (3) Le Programme website[3]. The BBC, Hillier Gardens, and specific websites matching the interests of the users, were set up for UK trialists.

[1] http://www.mrps.ch/
[2] http://www.tpg.ch/
[3] http://www.leprogramme.ch/

- Skype: a Skype Account was created ad hoc for each participant. During the testing phase, seniors could use Skype in order to call (1) others participants, (2) the main MRPS/KG&S investigator – for debugging, sharing impressions, plan appointments.
- Journal: Three questions were asked daily in this Application: (1) How do you feel today? (2) How is your morale? (3) How did you sleep last night? Some others relevant to the user were also asked in the UK trial.
- Articles: For MRPS users four articles were added in the Articles Application: (1) Benefits of music for senior citizens, (2) Laughter can help your health, (3) Older people find it easier to read a text from a tablet PC than a printed book, (4) Benefits of physical activity for senior citizens. The articles were selected from http://www.topsante.com. Articles specific to the interests of the users were added to the UK trialists accounts, eg Cardiac issues, exercise programs, healthy foods etc.
- Photos: For MRPS two photos albums were added for each participant. All the photos were found in a web search engine and were licensed under the Creative Commons license. For the UK individuals photos or free public license photos, of interest to the users were set up in their accounts. Attempting to mimic the personal element of the app.
- Health Devices: Three health measurement were available for all the participants: weight, blood pressure, glucose. Participants were also asked to record these measurements in a daily basis as relevant.
- Nutrition: 11 French recipes were added on this Application. All the recipes were considered as being adapted for all the participants. The recipes were selected from www.coupdepouce.com. Recipes sourced from Yummly under agreement, were used in the UK. This gave users 1000's of choices and allowed them to set up favourites etc.
- Object Locator: The object Locator App was tested in the apartment of the participants during the second or third day of the testing phase with the supervision of the main MRPS investigator. This was not tested in the UK as although users wanted to make use of the app, it was too frustrating to use in it's current version.
- Patience: (Only in the UK) A proprietary version of the card game was placed on the main menu allowing users to play the game on an individual player basis.

Informed consent and pre-test questionnaire

The participants were asked to sign two consent forms: the Consent Form for participation in the trial and the Consent Form for image rights. Both Consent Forms could be found in the Deliverable D4.4: "Consent, Ethics and Data Protection".

The pre-test questionnaire was designed to obtain demographic information, information regarding equipment and ICT expertise and personal attitude regarding technology. This questionnaire could be found in the appendix 1: Demonstration, pre-test questionnaire.

Testing phase

At the beginning of the testing phase, the participants were provided with a document specifying the tasks proposed for the testing phase; guiding the seniors all along the trial. The scenarios proposed to MRPS/KG&S participants were the following:

First day

Thank you for your participation in the EDLAH's final testing phase! The test will last for three days. For each day, we will propose you a series of tasks to perform using the EDLAH program. Of course, you can use EDLAH system at your desire!

Tasks proposed for the first day:

(1) EDLAH is composed of 8 programs: Internet, Calendar, Medication, Skype Video Calling, Social Applications, Health Measurements, Nutrition and Object Locator. Please navigate through the system and discover the different programs.
(2) Open the Agenda (Calendar). Please add your personal activities planned for the next following three days. You can access to the Agenda when you want to add new activities or to check your schedule.
(3) Open the Medication App and consult your medication schedule. Please use the button 'take' in order to record your medication intakes in the system (when required, during the day).
(4) Add a new entry in your wellbeing journal.
(5) Add your health measurements for today: weight, blood pressure, glucose (as applicable). You can record false data on the tablet.
(6) Use the internet navigator in order to access to the MRPS website. Please consult the opening times of the hairdressing service. (UK) Using the internet browser in order to access the BBC website. Note down a major news headline for today.
(7) Access to the Nutrition App and look for the recipe _____ (any recipe in the UK). Imagine that you just eat this meal. Record this information on the tablet.
(8) Use Skype in order to establish a video-call with ['name of the investigator']: let's discuss about your first impressions!

Second day
Tasks of the second day:
(1) Use Skype in order to establish a video-call with ['name of the investigator']. The aim of this call will be to plan an appointment to test, in your apartment, the Object Locator App together with the investigator. (Not in the UK)
(2) Check your Agenda (Calendar): did you plan some activity for today? Add new activities if needed.
(3) Open the Medication App and consult your medication schedule. Please use the button 'take' in order to record your medication intakes in the system (when required, during the day).
(4) Add a new entry in your wellbeing journal.
(5) Add your health measurements for today: weight, blood pressure, glucose. You can record false data on the tablet.
(6) The article _____ is available in the 'Healthcare Articles' App. Please read it and pose a question to the author of the article.
(7) A new photo album was shared with you. Please access to the photos, and leave at least one comment in one photo.
(8) Access to the Nutrition App and look for the recipe _____ (any recipe in the UK). Imagine that you just eat this meal. Record this information on the tablet.

Third day
Tasks of the third day:
(1) Check your Agenda (Calendar): did you plan some activity for today? Add new activities if needed.
(2) Open the Medication App and consult your medication schedule. Please use the button 'take' in order to record your medication intakes in the system (when required, during the day).
(3) Add a new entry in your wellbeing journal.
(4) Add your health measurements for today: weight, blood pressure, glucose. You can record false data on the tablet.
(5) The article _____ is available in the 'Healthcare Articles' App. Please read it and pose a question to the author of the article.
(6) Use the internet navigator in order to access to the TPG website. Please consult the bus timetables of the bus number 3 (departure: Colladon). In the UK, using the internet browser

in order to access the Hillier gardens website. Please note how much money the gardening club has to spend?
(7) A new photo album was shared with you. Access to the photos, and leave at least one comment in one photo.
(8) Use Skype in order to establish a video-call with ['name of the investigator']. The aim of this call will be to plan an appointment for the final interview.

Interview

After the testing phase a short interview was performed in order to collect qualitative and spontaneous data. The questions were the following:

- What did you like about the system?
- What did you dislike about the system?
- Do you think that EDLAH is easy to use?
- Do you think that EDLAH is useful?
- Do you think that EDLAH is fun?
- Do you feel more confident in using technologies?
- Could EDLAH have an impact on the quality of life and health of the user?
- Could EDLAH have an impact on the social interaction of the user?

Post-test questionnaire

Immediately after the interview, a questionnaire composed of 5 parts was administrated to the participants. Firstly we measured for the second time, the individuals' attitude regarding technology aiming to compare these results with the data collected in the pre-test questionnaire. Note that this approach was already used in the first trial with success (see D4.2). Thereafter, we asked participants to complete the questionnaire "System Usability Scale" (SUS; Brooke, 1986; Brooke, 1996). In the third part of the questionnaire we assessed the jargon used in the EDLAH interface (C1 - C4) and the ease of learning (C5 - C8). The fourth part of the questionnaire focused on general satisfaction of the users. Finally, the fifth part of the questionnaire was designed in order to assess the potential impact of EDLAH on the quality of life, health and social interaction as perceived by the users.

2.1.3 Mapping between the method used and the success indicators

The following table shows the mapping between methods used through the project life and the success indicators of the project – as stated in the documentation of work.

Success Indicator	Method	Measured in the
(1) Increase usability of the system	Interview (qualitative): Do you think that EDLAH is easy to use?	Third trial
	Questionnaire post test (quantitative): System Usability Scale	First trial, Second trial, Third trial
	Questionnaire post test (quantitative): Terminology and learning	First trial, Second trial, Third trial
(2) Increase user overall satisfaction	Interview (qualitative): what did you like about the system?	Third trial
	Interview (qualitative): what did you dislike about the system?	Third trial
	Interview (qualitative): Do you think that EDLAH is useful?	Third trial
	Interview (qualitative): Do you	Third trial

	think that EDLAH is fun?	
	Questionnaire post test (quantitative): satisfaction	First trial, Second trial, Third trial
(3) Increase in personal confidence of users, participating in the project, due to the use of EDLAH. Reduce of the technological and psychological barriers for older people, in the use of computer technology	Interview (qualitative): Do you feel more confident in using technologies?	Third trial
	Questionnaire pre and post test (quantitative): Attitude toward technology	First trial, Third trial
(4) Positively impact on the quality of life, health and social interaction of end users	Interview (qualitative): Could EDLAH have an impact on the quality of life and health of the user?	Third trial
	Interview (qualitative): Could EDLAH have an impact on the social interaction of the user?	Third trial
	Questionnaire post test (quantitative): Potential impact of EDLAH	Second trial, Third trial

2.1.1 Participants

10 Elderly from MRPS and 11 elderly from KG&S participated to the demonstration phase – third trial. The following table describes the main characteristics of the sample.

Question	**MRPS seniors**	**KG&S seniors**
Amount of participants	N=10	N=11
A1. Gender	Female=7 Male=3	Female=7 Male=4
A2. Age	Mean=82.30 SD=4.06	Mean=80.73 SD=7.09

3 Results of the demonstration phase

3.1 Interview: MRPS data

After the testing phase a short interview was performed in order to collect qualitative and spontaneous data. The interview was composed by 8 questions. Below, the main results collected in MRPS.

1. What did you like about the system? The answers revealed that the most appreciated applications were, in order of importance:

1. The Object Locator App – mentioned by 6 users
2. The Agenda App – mentioned by 5 users
3. The Medication App – mentioned by 3 users
4. The Skype App – mentioned by 2 users
5. The Health Devices App – mentioned by 2 users
6. The Internet App – mentioned by 2 users

7. The Nutrition App – mentioned by 1 user
8. The Journal App – mentioned by 1 user
9. The Card Game – mentioned by 1 user

2. What did you dislike about the system? Results suggested that the less appreciated applications and features were, in order of importance:

1. The Nutrition App – mentioned by 6 users. It is worth emphasizing that MRPS residents normally don't prepare meals at home. Some of the participant also mentioned that in the Nutrition App, seniors should find general information related to his/her diet more than finding recipes.
2. The Medication App – mentioned by 5 users. Reasons: (1) the medication reminders are not sufficiently visible on the tablet, (2) sound are missing in the medication reminders, and (3) some seniors mentioned that they would like to be able to add/remove/modify the planning of medications.
3. The Calendar – mentioned by 4 users. Reasons: (1) this Application was perceived as being too complex, difficult to be used, (2) reminders are not sufficiently visible on the tablet, and (3) sound are missing in the appointments reminders.
4. The Health Device App – mentioned by 2 users. Reasons: (1) norms are missing. The user is not aware if his/her measurement is in the norms, (2) the data related to the past is missing.
5. The Object Localization – mentioned by 1 user. Reason: the beacons are too big. They cannot be applied to small objects like glasses.
6. The Photos App – mentioned by 1 user. Reason: people should communicate in the real life and not with a tablet, we need more face-to-face contact.
7. Skype – mentioned by 1 user. Reason: the App did not work properly. Probably it was a connection issue.
8. Finally, two users mentioned that it's difficult to manage the keyboard (make it appear, disappear, insert accents)

3. Do you think that EDLAH is easy to use? Results are more than positive. According to 8 MRPS users, the EDLAH solution is relatively easy to use: "EDLAH is clear and simple", "For me it's easy to use.", "Yes, very easy. EDLAH is really good designed", "Yes, it's quite easy to use but support is needed to learn how to use it". An MRPS participant think that the actual version of the prototype is "not really easy to use: improvements are needed". Finally, an MRPS participant point out that some applications are easy while others are less user-friendly.

4. Do you think that EDLAH is useful? Results are acceptable. According to six users EDLAH is useful: "Is a very useful program. But it still need improvements. I expect that in 5 years EDLAH will be a very nice product", "I think yes. EDLAH make my brain work", "Yes, but it should be improved", "I think yes. It could be useful in MRPS if seniors would have tablets", "Yes, especially the Medication application", "It's not essential, but it could be useful". According to 2 users, not all applications are useful: "I am not sure… depending on the application", "Different users, different needs, and different programs! For me, for example, Health and Nutrition is not useful". Two seniors were more skeptics: "I consider EDLAH as a game rather than a useful tool", "EDLAH is not useful for me, now. I am not sure I would need it".

5. Do you think that EDLAH is fun? Results are more than optimistic. Eight users think that the EDLAH solution is pretty fun: "EDLAH is pretty fun", "Yes but it could be funnier", "Yes, it was fun to participate to this test", "Yes, technologies are funny", "Yes, it's fun… but it should not be its purpose". In contrast, according to two end-users improvements could be made: "I am not sure if EDLAH is fun", "I don't think so. It could be nice to have something more ludic. You should find ways to encourage people to open this app".

6. Do you feel more confident in using technologies? Seven users tended to feel more confident in using technologies: “I am now confident that I can use a tablet”, “I learned how to use the EDLAH program during the trial”, “I feel like I learned how to use a tablet”. Two seniors were more skeptics: “I don’t think I am more efficient in using technology. The test was too short”, “I am not sure. A little bit, but not hugely”.

7. Could EDLAH have an impact on the quality of life and health of the user? The opinions of the users on this question were divided: six users think that EDLAH could potentially have a positive impact on the quality of life and health while four seniors were less enthusiasts. Critically, two seniors mentioned that EDLAH solution is probably more adapted for seniors who don’t live in an institution/organization like MRPS. Finally, according to a participant, the EDLAH solution could impact the quality of life of the next generation of seniors: “today, it’s too early”.

8. Could EDLAH have an impact on the social interaction of the user? Interestingly, participants tended to agree on this question. Six users mentioned that technologies could be used to cultivate social interactions: “Skype is an interesting program… the senior can see friends or member of his family”, “thanks to internet, I can communicate with people that live far away from Geneva”, “the agenda could be used to create social activities with others users, friends. I was also expecting to see also the planning of the MRPS animations in the agenda”, “Yes, EDLAH has a positive impact, but the email is missing there”. Three users were more critics: “Human interaction should be 'face-to-face' and not via technologies”, “the tablet should not replace the human contact”, “the physical presence is totally missing in EDLAH. Seniors need real contact”.

3.2 Interview: KG&S data

After the testing phase a short interview was performed in order to collect qualitative and spontaneous data. The interview was composed by 8 questions. Below, the main results collected in KG&S.

1. What did you like about the system? The answers revealed that the most appreciated applications were, in order of importance:

1. Skype – mentioned by 3 users
2. Photos – mentioned by 3 users
3. The games – mentioned by 2 users
4. The browser – mentioned by 2 users
5. Health devices – mentioned by 2 users
6. Calendar – mentioned by 2 users
7. Medication reminder – mentioned by 1 user
8. Recipes – mentioned by 1 user
9. Journal – mentioned by 1 user

2. What did you dislike about the system? Results suggested that the less appreciated applications and features were, in order of importance:

1. The smiley faces – mentioned by 4 users. Reasons: (1) the smiley faces are inappropriate, (2) the smiley faces are misleading, (3) the smiley faces are wrong
2. The buttons – mentioned by 3 users. Reasons: (1) weight buttons fiddly, (2) weight buttons sticks
3. The “come back” button – mentioned by 2 user. Reason: The user has to ‘go back’ all the time, (2) too much ‘come back’ actions in order to get to main menu
4. Medication App – mentioned by 2 users. Reasons: (1) alarm too quiet, (2) the App should state the day and not ‘today/tomorrow’

5. Calendar – mentioned by 1 user. Reason: this Application was perceived as being too complex, difficult to be used
6. Lack of human contact – mentioned by 1 user
7. The touchscreen – mentioned by 1 user. The touchscreen is difficult to be used. A user would prefer a stylus
8. The tablet – mentioned by 1 user. Reason: the tablet is too large to carry

3. Do you think that EDLAH is easy to use? Similarly to MRPS, results are more than positive. According to 9 KG&S users, the EDLAH solution is easy to use: "very clear and easier than expected", "simple and clear", "very simple", "it's quite easy to use with occasional reminders", "clear and straightforward", "it's quite easy to use". On the contrary, a KG&S participant think that the actual version of the prototype is "very frightening".

4. Do you think that EDLAH is useful? All the users think that EDLAH is useful: "Yes, it's good to record things so you can remember", "Yes, but alarms need more volume", "Yes, but I would like to have more games", "Yes, but alarms need to be louder", "Yes, especially Medication program", "Very useful for crisis management, saving health costs", "Yes useful for some people", "Yes, especially the recipes", "Yes especially the journal with people answering", "EDLAH is useful with good potential".

5. Do you think that EDLAH is fun? According to most KG&S participants, the EDLAH solution is not fun: "No", "Fun is a wrong word, EDLAH is very useful", "the games are funny, EDLAH is just useful, easy to use and helpful", "EDLAH is not fun, but it's a good tool", "It's not fun, but it's useful and interesting".

6. Do you feel more confident in using technologies? Five users tended to feel more confident in using technologies and were more motivated in using technologies: "Yes, I would like to use technologies more, now", Yes, a little", "Yes, I am confident now", "I was already fairly confident in using technologies, but all helps". Four users were more skeptics: "No, I don't feel more confident", "I was already confident… so no change"

7. Could EDLAH have an impact on the quality of life and health of the user? Nine users think that EDLAH could have an impact on the quality of life and health: "Yes, especially the journal and the medication alerts", "Yes, the photos and video are good for socializing and the journal for records on health", "Yes, EDLAH may avoid medication problems", "Yes, the journal is useful to give information", "Yes, potentially", "Yes, the elements are the sort to help.". Critically, a KG&S participant mentioned that the EDLAH solution is probably more adapted for seniors who don't live in an institution/organization: "Not if you live in a care home but would be good if living independently".

8. Could EDLAH have an impact on the social interaction of the user? Seven users felt that EDLAH could potentially help to cultivate social interactions: "Skype and the photos are especially good", "Yes, using the social element", "Yes, possibly", "Yes, I would use skype and the photo app with my gran children". On the contrary, three users were more skeptics.

3.3 Quantitative data

3.3.1 Attitude regarding technologies

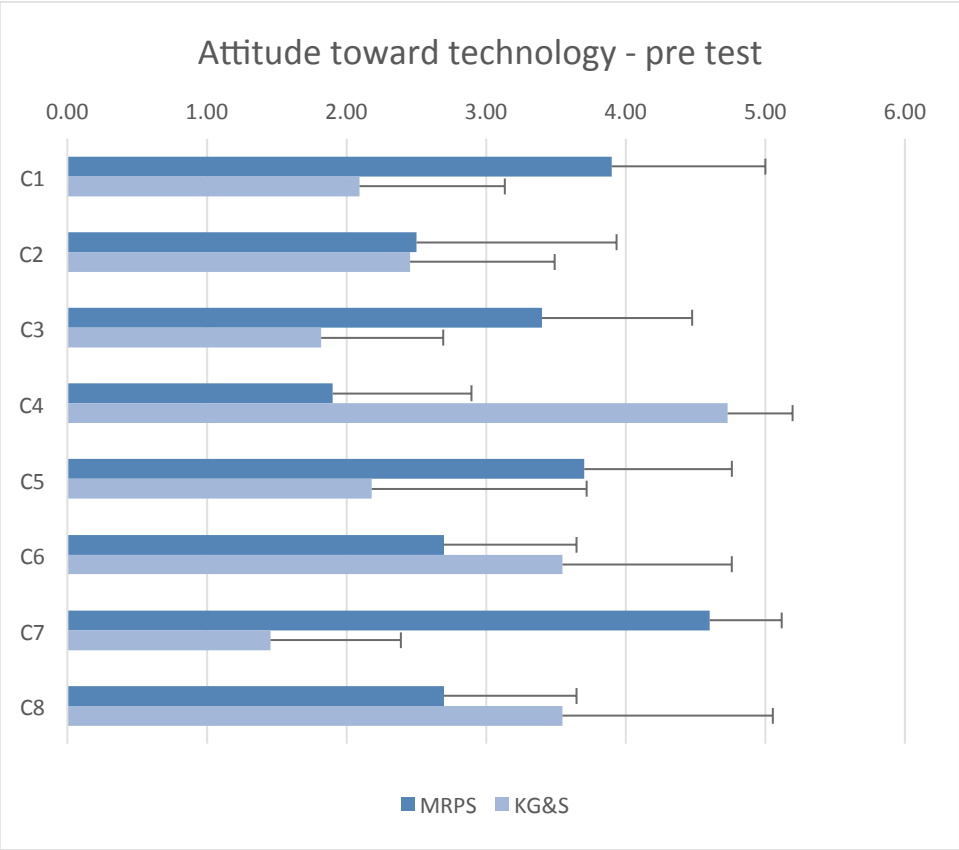
A questionnaire measuring individuals' attitude regarding technology was administered before and after the demonstration. The underlying assumption is that the users experience of EDLAH we hope is positive, thus leading to the older person being less anxious about

their use of technology. This approach was already used in the first trial with success (see D4.2). Note that participant answers on these questions were coded as following: 1=Don't agree, 2=Somewhat disagree, 3=Indifferent, 4=Tend to agree, 5=Strongly agree.

The following table resumes the results of the two samples on the first administration (pre-test):

Question	MRPS	KG&S	T-test (diff. MRPS-KG&S seniors)
C1. I am confident that I can learn new technologies.	Mean=3.90 SD=1.10	Mean=2.09 SD=1.04	t(19)=-3.86, p<0.01
C2. I feel apprehensive about using new technologies.	Mean=2.50 SD=1.43	Mean=2.45 SD=1.04	t(19)=-0.08, p=0.93
C3. Anyone can learn to use new technologies if they are patient and motivated.	Mean=3.40 SD=1.07	Mean=1.82 SD=0.87	t(19)=-3.72, p<0.01
C4. You have to be a genius to successfully use new technologies.	Mean=1.90 SD=0.99	Mean=4.73 SD=0.47	t(19)=8.47, p<0.01
C5. In the near future, I would use new technologies daily.	Mean=3.70 SD=1.06	Mean=2.18 SD=1.54	t(19)=-2.61, p=0.02
C6. New technologies scare me.	Mean=2.70 SD=0.95	Mean=3.55 SD=1.21	t(19)=1.77, p=0.09
C7. Learning to operate new technologies is like learning any new skill – the more you practice, the better you become.	Mean=4.60 SD=0.52	Mean=1.45 SD=0.93	t(19)=-9.41, p<0.01
C8. I am worried about the use of new technologies.	Mean=2.70 SD=0.95	Mean=3.55 SD=1.51	t(19)=1.52, p=0.15

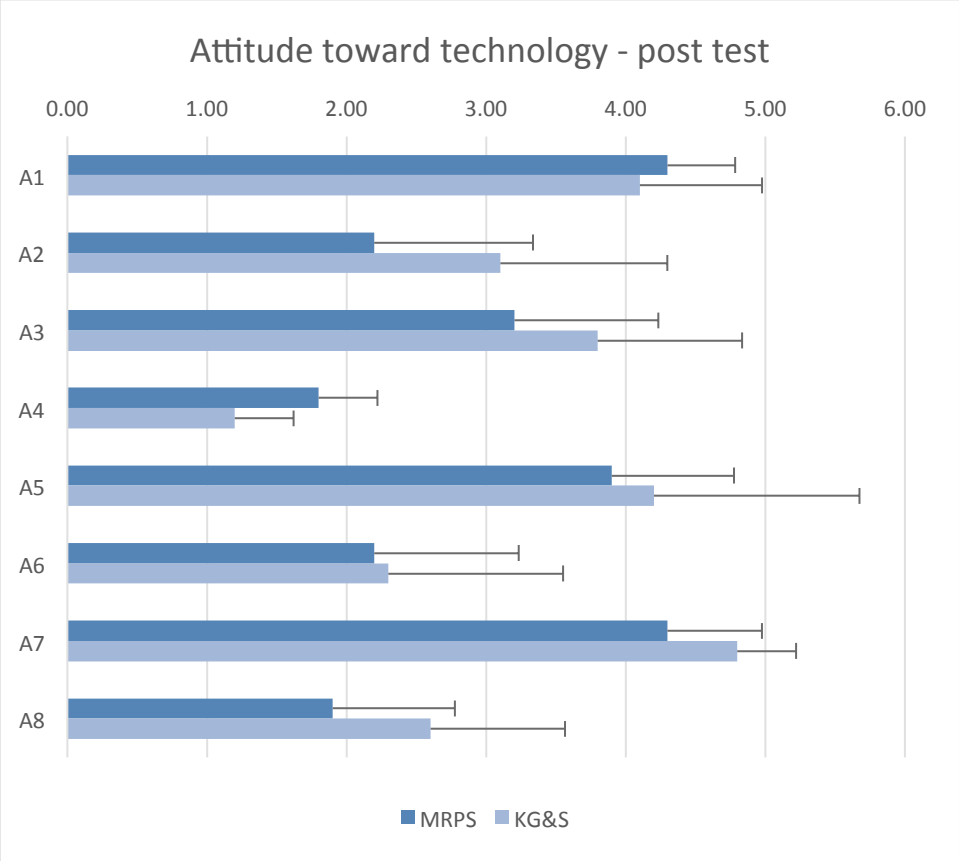
These results are also represented in the following figure:



Differences between the two groups of seniors were observed in the items A1, A3, A4, A5 and A7; suggesting that, on the pre-test, MRPS seniors were less anxious about their use of technology. The following table resumes the results of the two samples on the second administration (post-test):

Question	MRPS	KG&S	T-test (diff. MRPS-KG&S seniors)
A1. I am confident that I can learn new technologies.	Mean=4.30 SD=0.48	Mean=4.10 SD=0.88	t(18)=-0.63, p=0.54
A2. I feel apprehensive about using new technologies.	Mean=2.20 SD=1.14	Mean=3.10 SD=1.20	t(18)=1.72, p=0.10
A3. Anyone can learn to use new technologies if they are patient and motivated.	Mean=3.20 SD=1.03	Mean=3.80 SD=1.03	t(18)=1.30 , p=0.21
A4. You have to be a genius to successfully use new technologies.	Mean=1.80 SD=0.42	Mean=1.20 SD=0.42	t(18)=-3.18 , p<0.01
A5. In the near future, I would use new technologies daily.	Mean=3.90 SD=0.88	Mean=4.20 SD=1.48	t(18)=0.55, p=0.59
A6. New technologies scare me.	Mean=2.20 SD=1.03	Mean=2.30 SD=1.25	t(18)=0.19, p=0.85
A7. Learning to operate new technologies is like learning any new skill – the more you practice, the better you become.	Mean=4.30 SD=0.67	Mean=4.80 SD=0.42	t(18)=1.99, p=0.06
A8. I am worried about the use of new technologies.	Mean=1.90 SD=0.88	Mean=2.60 SD=0.97	t(18)=1.70, p=0.11

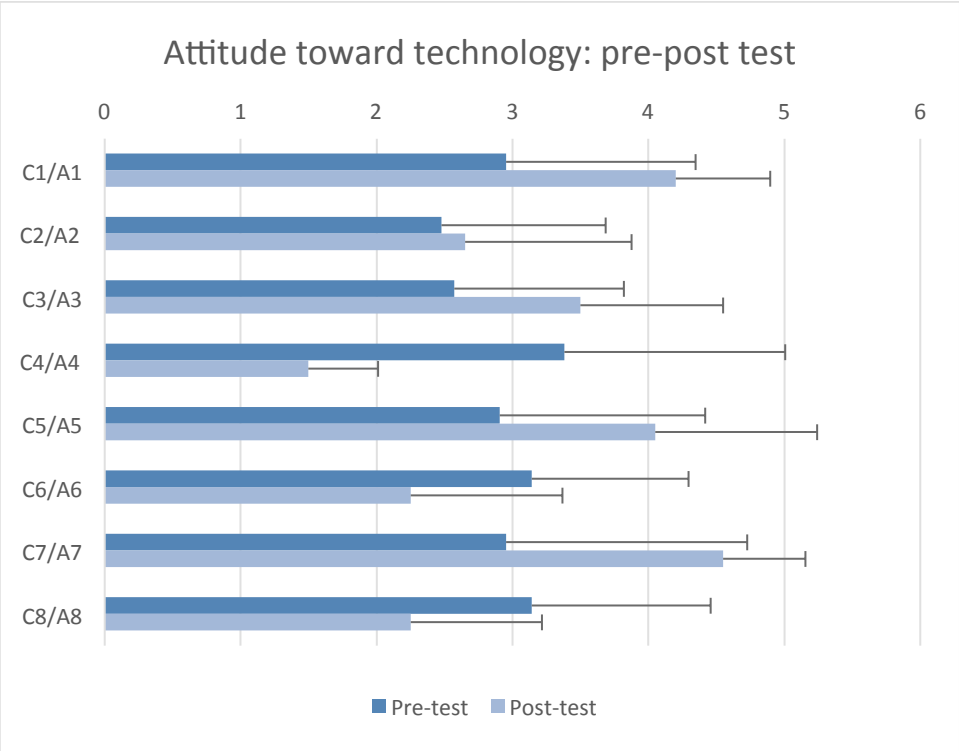
These results are also represented in the following figure:



A difference between the two groups was observed on the item A1 ($t(18)=-3.18$, $p<0.01$). Most importantly, the following table compare the results on this questionnaire before (pre-test) and after (post-test) the user testing, for MRPS and KG&S combined.

Question	Pre-test	Post-test	T-test
C1/A1. I am confident that I can learn new technologies.	Mean=3.00 SD=1.41	Mean=4.20 SD=0.70	t(19)=-3.21, p<0.01
C2/A2. I feel apprehensive about using new technologies.	Mean=2.50 SD=1.24	Mean=2.65 SD=1.23	t(19)=-0.36, p=0.72
C3/A3. Anyone can learn to use new technologies if they are patient and motivated.	Mean=2.65 SD=1.23	Mean=3.50 SD=1.05	t(19)=-2.09, p=0.05
C4/A4. You have to be a genius to successfully use new technologies.	Mean=3.30 SD=1.63	Mean=1.50 SD=0.51	t(19)=4.10, p<0.01
C5/A5. In the near future, I would use new technologies daily.	Mean=2.90 SD=1.55	Mean=4.05 SD=1.19	t(19)=-2.15, p=0.04
C6/A6. New technologies scare me.	Mean=3.10 SD=1.17	Mean=2.25 SD=1.12	t(19)=2.13, p =0.05
C7/A7. Learning to operate new technologies is like learning any new skill – the more you practice, the better you become.	Mean=3.05 SD=1.76	Mean=4.55 SD=0.60	t(19)=-3.25, p<0.01
C8/A8. I am worried about the use of new technologies.	Mean=3.10 SD=1.33	Mean=2.25 SD=0.97	t(19)=2.24, p=0.04

These results are also represented in the following figure:



Interestingly, significant differences were observed in A1, A3, A4, A5, A6, A7 and A8. The score on the first, third, fifth and seventh item increased significantly; while the score on the fourth, sixth, eighth item decrease. Taken together, these results suggest that the use of the EDLAH system leaded to the older person being less anxious about their use of technology; confirming thus the results observed on the first trial. We reached thus two big challenges of the EDLAH project: (1) increase in personal confidence of users, participating in the project, due to the use of EDLAH, (2) reduction of the technological and psychological barriers for older people, in the use of computer technology.

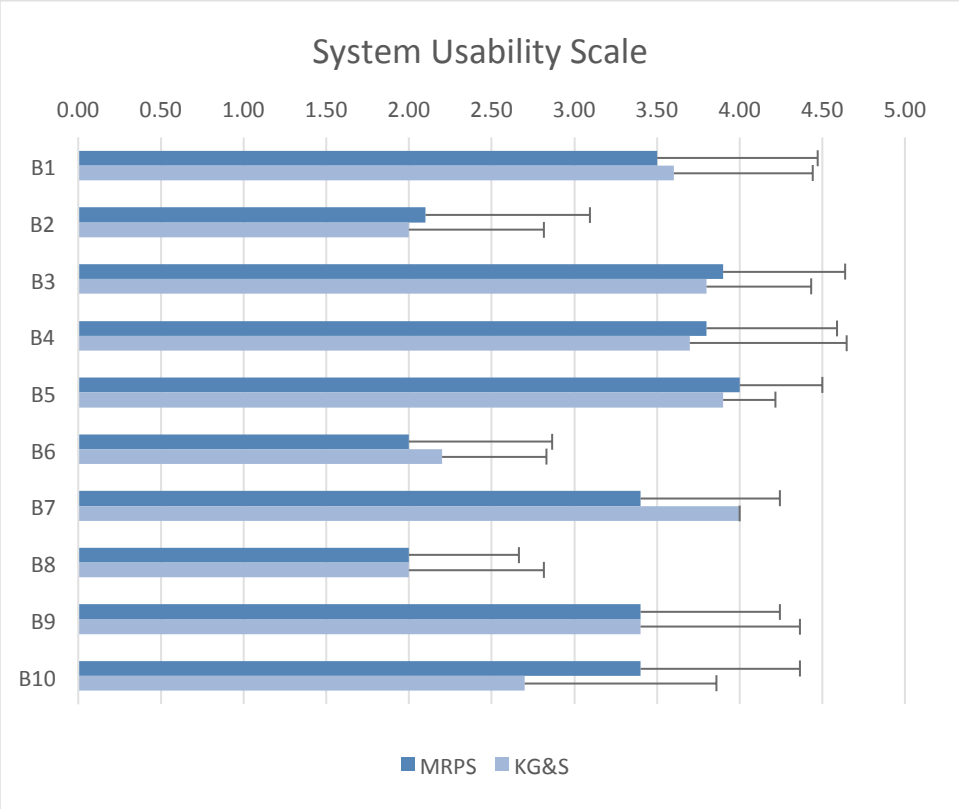
3.3.2 System Usability Scale

Similarly to the first and second trial, the System Usability Scale was administrated with the aim to evaluate the degree of usability perceived by the end-users after having used the prototype during the demonstration phase. The following table resumes the seniors' results on this questionnaire. Note that participant answers on these questions were coded as following: 1=Don't agree, 2=Somewhat disagree, 3=Indifferent, 4=Tend to agree, 5=Strongly agree.

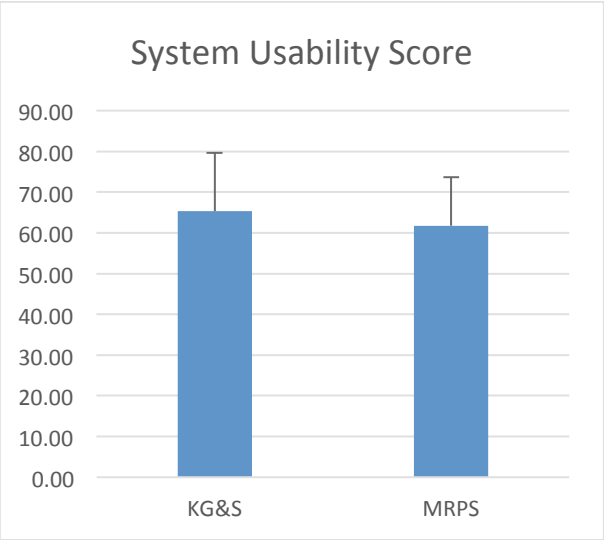
Question	MRPS Seniors	KG&S Seniors	T-test (diff. MRPS-KG&S seniors)
B1. I think that I would like to use this system frequently.	Mean=3.50 SD=0.97	Mean=3.60 SD=0.84	t(18)=0.25, p=0.81
B2. I found the system unnecessarily complex.	Mean=2.10 SD=0.99	Mean=2.00 SD=0.82	t(18)=-0.25, p=0.81
B3. I thought the system was easy to use.	Mean=3.90 SD=0.74	Mean=3.80 SD=0.63	t(18)=-0.33, p=0.75
B4. I think that I would need the support of a technical person to be able to use this system.	Mean=3.80 SD=0.79	Mean=3.70 SD=0.95	t(18)=-0.26, p=0.80
B5. I found the various	Mean=4.00	Mean=3.90	t(17)=-0.53, p=0.61

functions in this system were well integrated.	SD=0.50	SD=0.32	
B6. I thought there was too much inconsistency in this system.	Mean=2.00 SD=0.87	Mean=2.20 SD=0.63	t(17)=0.58, p=0.57
B7. I would imagine that most people would learn to use this system very quickly.	Mean=3.40 SD=0.84	Mean=4.00 SD=0.00	t(18)=2.25, p=0.04
B8. I found the system very cumbersome to use.	Mean=2.00 SD=0.67	Mean=2.00 SD=0.82	t(18)=0.00, p=1.00
B9. I felt very confident using the system.	Mean=3.40 SD=0.84	Mean=3.40 SD=0.97	t(18)=0.00, p=1.00
B10. I needed to learn a lot of things before I could get going with this system.	Mean=3.40 SD=0.97	Mean=2.70 SD=1.16	t(18)=-1.47, p=0.16

These results are also represented in the following figure:



A significant difference between MRPS and KG&S seniors was found in B7 (t(18)=2.25, p=0.04). The average SUS score from KG&S was 65.25 with a standard deviation of 14.36; while the average SUS score from MRPS was 61.75 with a standard deviation of 11.96. No significant difference on the SUS score was observed between the two populations (t(19)=0.59, p 0.56).



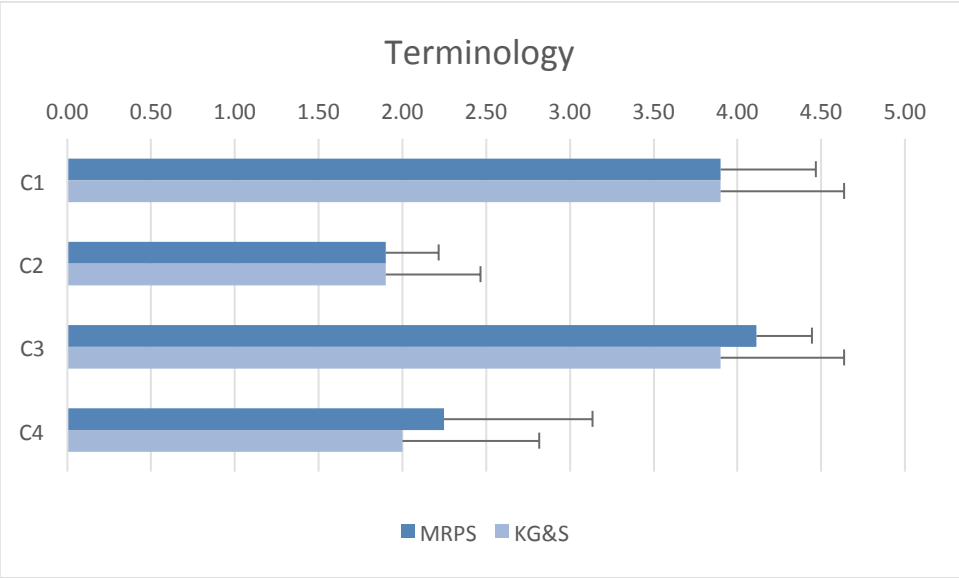
Note that the average SUS score from all 500 studies is a 68. A SUS score above a 68 should be considered above average and anything below 68 is below average. Finally, the degree of usability of the EDLAH system – as perceived by end-users – could be considered as being acceptable for both MRPS and KG&S seniors.

3.3.3 Terminology and learnability

In addition to the System Usability Scale, four questions were asked to assess the terminology used in the EDLAH system. The following table resumes the results on these questions. Note that participant answers on these questions were coded as following: 1=Don't agree, 2=Somewhat disagree, 3=Indifferent, 4=Tend to agree, 5=Strongly agree.

Question	MRPS Seniors	KG&S Seniors	T-test (diff. MRPS-KG&S seniors)
C1. The EDLAH tablet makes sense to me.	Mean=3.90 SD=0.57	Mean=3.90 SD=0.74	t(18)=0, p=1
C2. The terminology used in EDLAH is inconsistent.	Mean=1.90 SD=0.32	Mean=1.90 SD=0.57	t(18)=0, p=1
C3. I believe the EDLAH tablet is clear and understandable.	Mean=4.11 SD=0.33	Mean=3.90 SD=0.74	t(17)=-0.79, p=0.44
C4. I feel that the terminology is hard to understand.	Mean=2.25 SD=0.89	Mean=2.00 SD=0.82	t(16)=-0.62, p=0.54

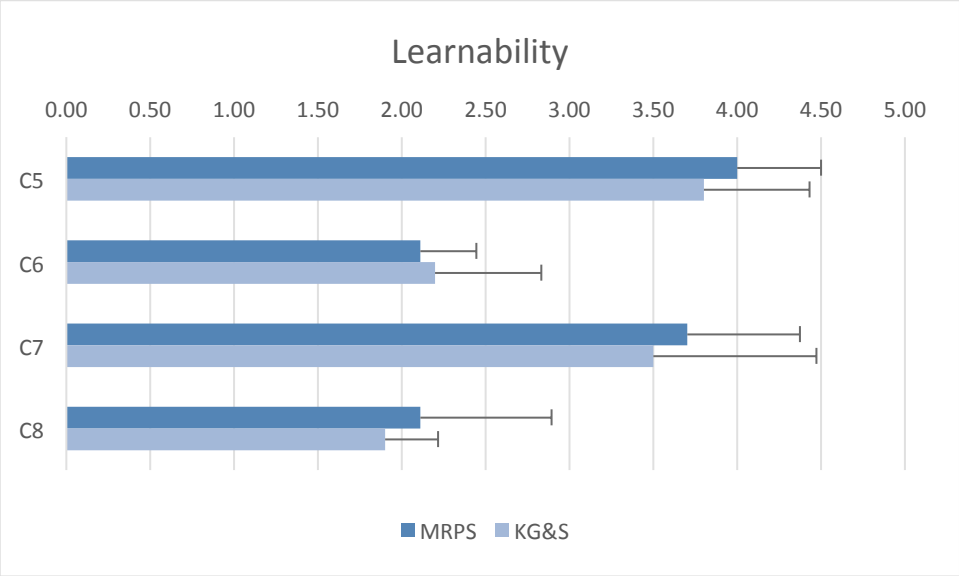
These results are also represented in the following figure:



Taken together, these results suggest that the terminology used in the EDLAH solution is clear, consistent and not hard to understand. The EDLAH tablet "makes sense" to both groups of users. No significant differences were observed on these items between the two groups.

Question	MRPS Seniors	KG&S Seniors	T-test (diff. MRPS-KG&S seniors)
C5. I think it is easy to learn to use the EDLAH system.	Mean=4.00 SD=0.50	Mean=3.80 SD=0.63	t(17)=-0.76, p=0.46
C6. It is difficult to remember how to use the EDLAH system.	Mean=2.11 SD=0.33	Mean=2.20 SD=0.63	t(17)=0.38, p=0.71
C7. I quickly became skillful at using the EDLAH system.	Mean=3.70 SD=0.67	Mean=3.50 SD=0.97	t(18)=-0.53, p=0.60
C8. I put in a lot of time to learn how the EDLAH system works.	Mean=2.11 SD=0.78	Mean=1.90 SD=0.32	t(17)=-0.79, p=0.44

These results are also represented in the following figure:



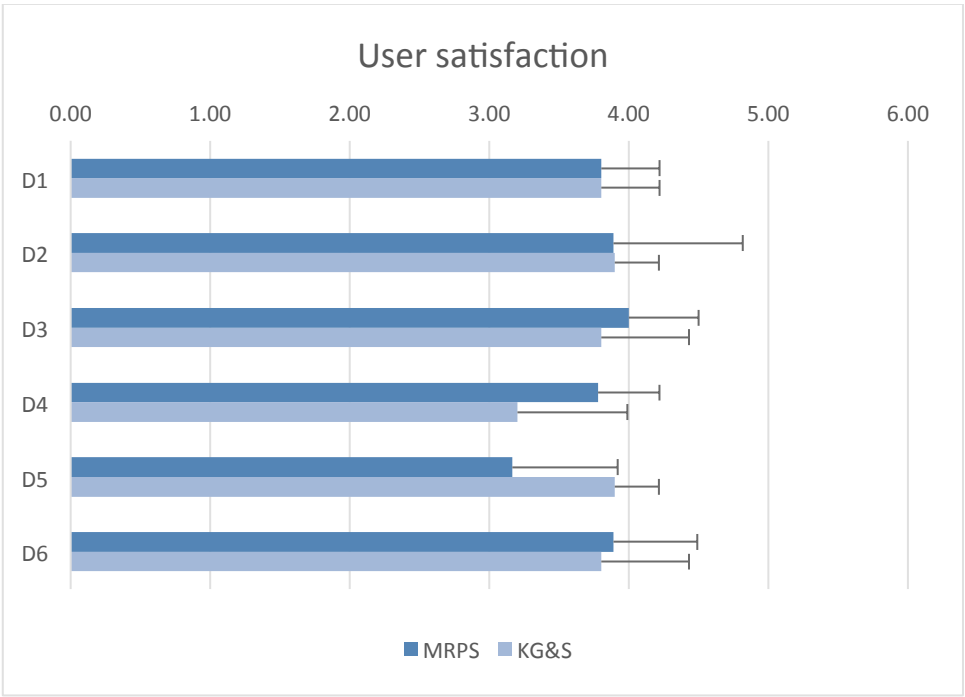
Overall, the users felt that the EDLAH solution is easy to learn. No significant differences were observed on these items between the two users groups.

3.3.4 Users' satisfaction

Seven questions were asked to evaluate end-users satisfaction after the demonstration phase. The following table resumes the results. Note that participant answers on these questions were coded as following: 1=Don't agree, 2=Somewhat disagree, 3=Indifferent, 4=Tend to agree, 5=Strongly agree.

Question	MRPS Seniors	KG&S Seniors	T-test (diff. MRPS-KG&S seniors)
D1. I am satisfied with the EDLAH system.	Mean=3.80 SD=0.42	Mean=3.80 SD=0.42	t(18)=0, p=1
D2. I would recommend the EDLAH system to a friend.	Mean=3.89 SD=0.93	Mean=3.90 SD=0.32	t(17)=0.04, p=0.97
D3. The EDLAH system is nice to use.	Mean=4.00 SD=0.50	Mean=3.80 SD=0.63	t(17)=-0.76, p=0.46
D4. The EDLAH system works well.	Mean=3.78 SD=0.44	Mean=3.20 SD=0.79	t(17)=-1.94, p=0.07
D5. The EDLAH system is good.	Mean=3.17 SD=0.75	Mean=3.90 SD=0.32	t(14)=2.75, p=0.02
D6. I would like to use the EDLAH system.	Mean=3.89 SD=0.60	Mean=3.80 SD=0.63	t(17)=-0.31, p=0.76

These results are also represented in the following figure:



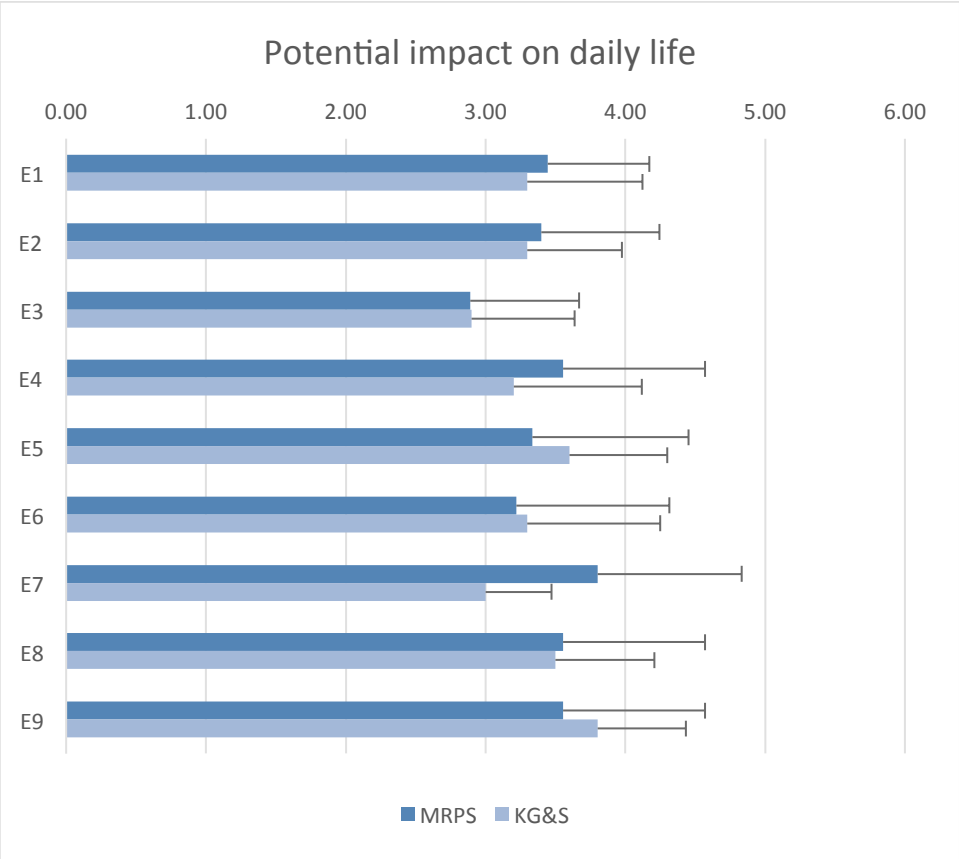
Overall, both populations appeared to be satisfied with the EDLAH solution. A significant difference between the two groups of seniors was observed in D5 (t(14)=2.75, p=0.02).

3.3.5 Potential impact of the EDLAH solution

Similarly to the second trial, a questionnaire measuring the potential impact of the EDLAH on end-users' daily life was administered. The following table resumes the results. Note that participant answers on these questions were coded as following: 1=Don't agree, 2=Somewhat disagree, 3=Indifferent, 4=Tend to agree, 5=Strongly agree.

Question	MRPS Seniors	KG&S Seniors	T-test (diff. MRPS-KG&S seniors)
E1. I think that the EDLAH system could help the seniors to complete their daily tasks.	Mean=3.44 SD=0.73	Mean=3.30 SD=0.82	t(17)=-0.40, p=0.69
E2. I think that the EDLAH system could make the seniors feel more motivated to carry out their daily tasks.	Mean=3.40 SD=0.84	Mean=3.30 SD=0.67	t(18)=-0.29, p=0.77
E3. Using the EDLAH system could help the seniors feel less stressed.	Mean=2.89 SD=0.78	Mean=2.90 SD=0.74	t(17)=0.03, p=0.97
E4. I think that the EDLAH system could help the seniors to become more independent/autonomous.	Mean=3.56 SD=1.01	Mean=3.20 SD=0.92	t(17)=-0.80, p=0.43
E5. I think that the EDLAH system could help to reduce the seniors' need for care.	Mean=3.33 SD=1.12	Mean=3.60 SD=0.70	t(17)=0.63, p=0.54
E6. I think that the EDLAH system could save seniors' time when they use it.	Mean=3.22 SD=1.09	Mean=3.30 SD=0.95	t(17)=0.17, p=0.87
E7. I think that the EDLAH system could help the seniors keep and increase their social relationships.	Mean=3.80 SD=1.03	Mean=3.00 SD=0.47	t(18)=-2.23, p=0.04
E8. I think that the EDLAH system could makes the seniors feel safer.	Mean=3.56 SD=1.01	Mean=3.50 SD=0.71	t(17)=-0.14, p=0.89
E9. I think that the EDLAH system could help the seniors to stay healthy.	Mean=3.56 SD=1.01	Mean=3.80 SD=0.63	t(17)=0.64, p=0.53

These results are also represented in the following figure:



Significant differences between MRPS and KG&S seniors were found in E7. Overall, after the demonstration phase both group of end-users appeared to be skeptic about the potential impact of the EDLAH solution in their daily life.

4 Comparative approach

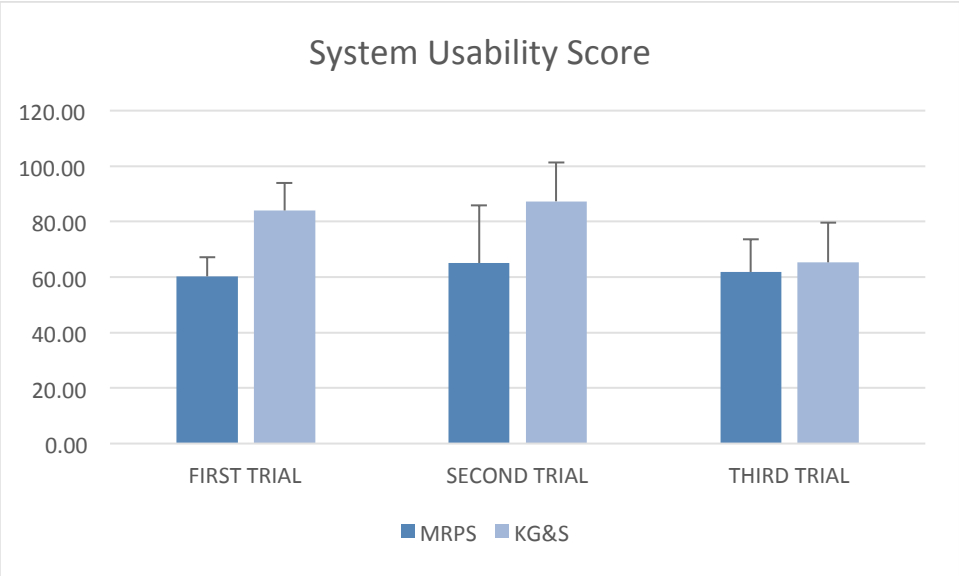
In this chapter, the overall results of the EDLAH project will be discussed, by comparing the seniors' results collected in the different trials.

4.1.1 System Usability Scale

The System Usability Scale was administered on the first, second trial and also at the end of the demonstration phase. The following table resumes the results observed throughout the project' live:

SUS score	MRPS Seniors	KG&S Seniors
First trial	Mean=60.28 SD=6.95	Mean=83.96 SD=9.88
Second trial	Mean=65.00 SD=20.94	Mean=87.32 SD=13.99
Demonstration phase	Mean=61.75 SD=11.96	Mean=65.25 SD=14.36

Seniors' results are also represented in the following figure:



A factorial ANOVA 3x2 was performed in order to assess the effect of the trial (first, second, third trial) and the effect of the end-user organization (KG&S, MRPS) on the seniors SUS score. The interaction between the 'trial' and the 'user organization' factor was marginally significant ($F(2)=2.93$, $p=0.06$). Fisher LSD post hoc tests suggests that:

- On the first and on the second trial, the SUS score was higher in KG&S seniors than in MRPS seniors. No difference between the two groups was observed on the third trial.
- The SUS score in the KG&S group was significantly lower in the third trial than in the second ($p<0.01$) and first trial ($p<0.01$).

4.1.2 Terminology and learnability

The Terminology and learnability questionnaire was administered on the first, second trial and also at the end of the demonstration phase. Note that:

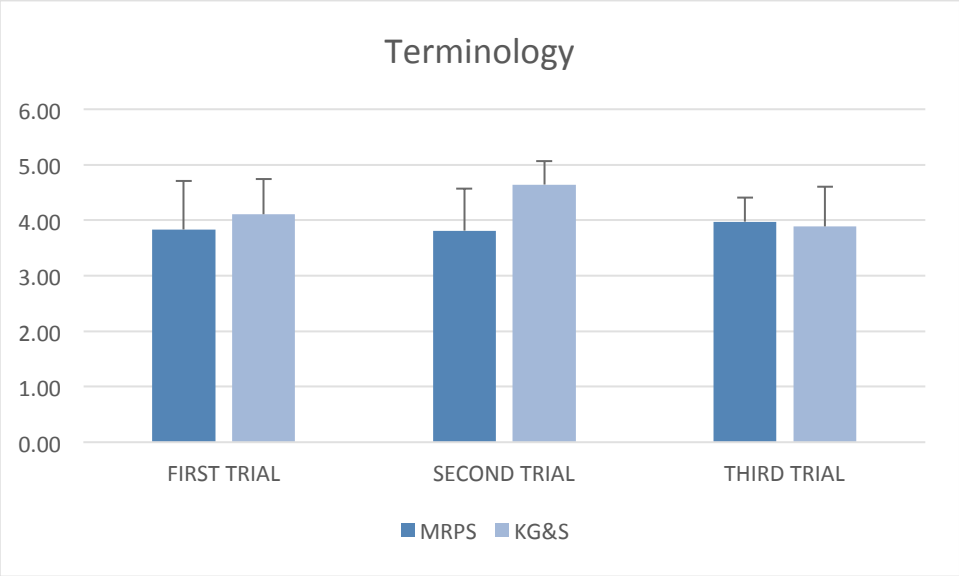
- Some of the items proposed on the first trial questionnaire have been subsequently revised
- Half of the questions of this questionnaire were worded positively (the first, third, fifth and seventh item), half negatively (the second, fourth, sixth and eight item). The scores were reversed when assessing the negatively worded questions.
- In the first trial questionnaire we used a 7-Likert scale; while in the second and third trial we used a 5-Likert scale. The data collected in the first trial were thus normalized to a 5-Likert scale by using the formula: (5 - 1) * (score - 1) / (7 - 1) + 1

Comparisons between the first trial and the second/third trial should thus be made with caution. Mean and standard deviation on this questionnaire were computed for each trial. The following table resumes the results observed on the **terminology** questionnaire throughout the project' live:

Terminology	**MRPS Seniors**	**KG&S Seniors**
First trial	Mean=3.83 SD=0.88	Mean=4.10 SD=0.64
Second trial	Mean=3.81 SD=0.76	Mean=4.64 SD=0.42
Demonstration phase	Mean=3.98	Mean=3.89

	SD=0.43	SD=0.72

Seniors' results are also represented in the following figure:



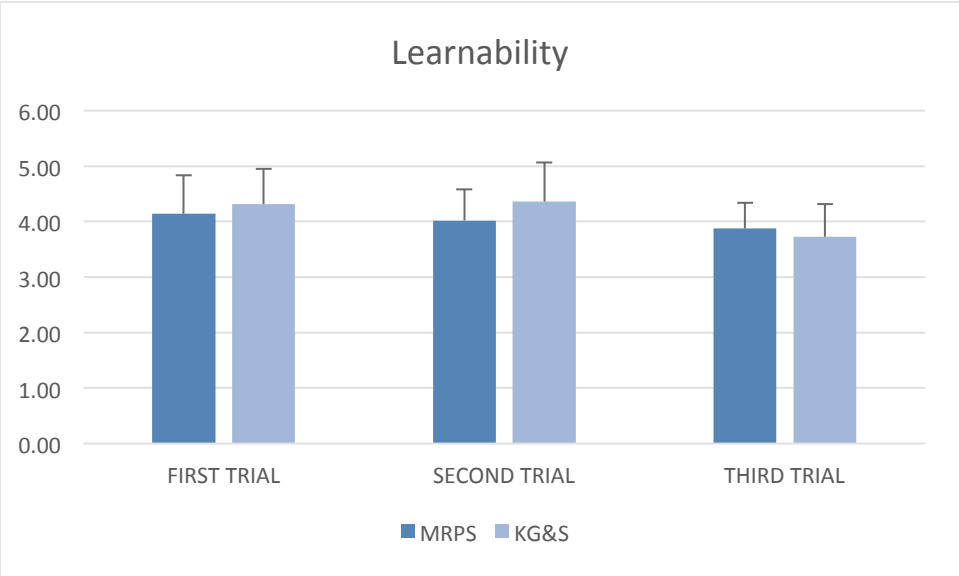
A factorial ANOVA 3x2 was performed in order to assess the effect of the trial (first, second, third trial) and the effect of the end-user organization (KG&S, MRPS) on the terminology questionnaire. The interaction between the 'trial' and the 'user organization' factor was significant ($F(2)=3.08$, $p=0.05$). Fisher LSD post hoc tests suggests that:

- On the second trial, the terminology score was higher in KG&S seniors than in MRPS seniors ($p<0.01$). No difference between the groups of users was observed in the first and third trial.
- The terminology score in the KG&S group was significantly lower in the third trial than in the second trial ($p<0.01$).

The following table resumes the results observed on the **learnability** questionnaire throughout the project' live:

Learnability	**MRPS Seniors**	**KG&S Seniors**
First trial	Mean=4.14 SD=0.69	Mean=4.31 SD=0.63
Second trial	Mean=4.02 SD=0.56	Mean=4.36 SD=0.71
Demonstration phase	Mean=3.88 SD=0.46	Mean=3.73 SD=0.59

Seniors' results are also represented in the following figure:



A factorial ANOVA 3x2 was performed in order to assess the effect of the trial (first, second, third trial) and the effect of the end-user organization (KG&S, MRPS) on the learnability questionnaire. The interaction effect ($F(2)=0.92$, $p=0.41$) and the end-user organization effect were not significant ($F(1)=0.55$, $p= 0.46$). On the contrary, the trial effect was marginally significant ($F(2)=2.95$, $p=0.06$). Fisher LSD post hoc tests suggests that the learnability score on the third trial is significantly lower than the score observed on the first ($p=0.04$) and second ($p=0.03$) trial.

4.1.3 Users satisfaction

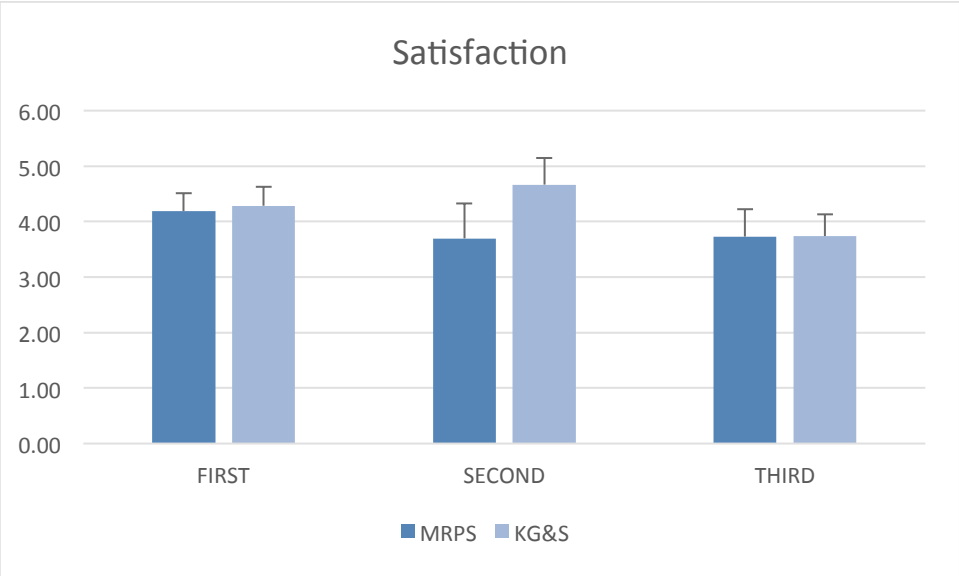
The user's satisfaction questionnaire was administered on the first, second trial and also at the end of the demonstration phase. Note that:

- Some of the items proposed on the first trial questionnaire have been subsequently revised
- In the first trial questionnaire we used a 7-Likert scale; while in the second and third trial we used a 5-Likert scale. The data collected in the first trial were thus normalized to a 5-Likert scale by using the formula: (5 - 1) * (score - 1) / (7 - 1) + 1

Mean and standard deviation on this questionnaire were computed for each trial. The following table resumes the results observed throughout the project' live:

User's satisfaction	MRPS Seniors	KG&S Seniors
First trial	Mean=4.19 SD=0.32	Mean=4.29 SD=0.35
Second trial	Mean=3.70 SD=0.63	Mean=4.67 SD=0.48
Demonstration phase	Mean=3.73 SD=0.50	Mean=3.73 SD=0.40

Seniors' results are also represented in the following figure:



A factorial ANOVA 3x2 was performed in order to assess the effect of the trial (first, second, third trial) and the effect of the end-user organization (KG&S, MRPS) on the satisfaction questionnaire. The interaction between the 'trial' and the 'user organization' factor was significant ($F(2)=6.95$, $p<0.01$). Fisher LSD post hoc tests suggests that:

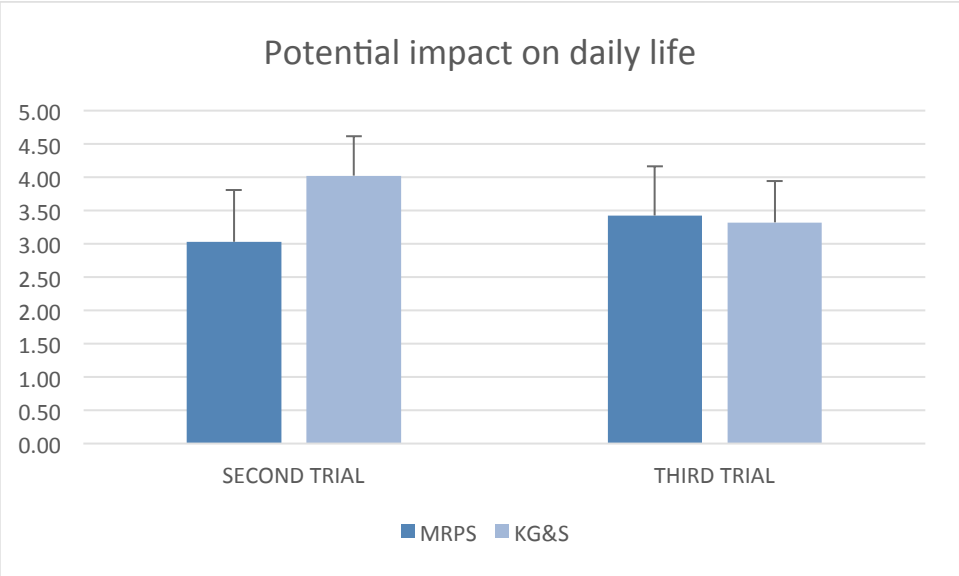
- MRPS satisfaction score decreased between the first and the second trial ($p=0.04$). No significant difference was observed between the satisfaction score measured on first and the third trial ($p=0.06$) and between the second and the third trial ($p=0.87$).
- KG&S satisfaction score decreased between the second and the third trial ($p<0.01$). In addition the satisfaction score observed on the third trial was also significantly lower than the score observed on the first trial ($p=0.02$). No significant difference was observed between the satisfaction score measured on first and the second trial ($p=0.08$); even if a tendency is observed.
- Finally, a difference between the two groups of users was observed in the second trial: KG&S score was higher than MRPS score ($p<0.01$). No difference between the two groups of users was observed in the first ($p=0.71$) and third trial ($p=0.98$).

4.1.4 Potential impact of the EDLAH solution

The questionnaire measuring the potential impact of the EDLAH system was administered on the second trial and at the end of the demonstration phase. Mean and standard deviation on this questionnaire were computed for each trial. The following table resumes the results observed throughout the project live:

User's satisfaction	MRPS Seniors	KG&S Seniors
Second trial	Mean=3.03 SD=0.77	Mean=4.02 SD=0.59
Demonstration phase	Mean=3.43 SD=0.74	Mean=3.32 SD=0.62

Seniors' results are also represented in the following figure:



A factorial ANOVA 2x2 was performed in order to evaluate the effect of the trial (second, third trial) and the effect of the end-user organization (KG&S, MRPS) on this questionnaire. The interaction between the 'trial' and the 'user organization' factor was significant ($F(1)=7.21$, $p=0.01$). Fisher LSD post hoc tests suggests that:

- KG&S score on the second trial was higher than MRPS score. No difference between the two groups was observed on the third trial.
- The score in the KG&S group was significantly lower in the third trial than in the second trial ($p=0.02$). No difference between the two trials was observed in MRPS group.

5 Discussion and conclusion

Overall, the data gathered during the demonstration phase could be considered as being positive; suggesting that EDLAH solution has a potential as a business product.

Demonstration phase: qualitative data. Note that the apps more appreciated by MRPS participants were: the Object Locator App, the agenda App, and the Medication App; while the apps more appreciated by KG&S participants were Skype, the Photo Album App and the games installed on the tablet. During the interview, both populations described the system as being useful and easy to be used. Contrary to KG&S participants, MRPS seniors' perceived the EDLAH system as being funny. Gamification could be potentially integrated in the EDLAH services, in order to make the system more appealing, attractive and rewarding. This motivational surplus would potentially provide for better personal mental health, personal physical health, social integration, self-esteem. Critically, part of the users feel more confident in using technologies after the demonstration phase, and think that the EDLAH system could potentially have an impact on the quality of life, on the health and on the social interaction of the user.

Demonstration phase: quantitative data. In general, qualitative data is consistent with the quantitative data. The analysis pretest / posttest on the questionnaire "Attitude toward technology" suggested that the use of the EDLAH system leaded to the older person being less anxious about their use of technology; confirming also the results observed on the first trial. We reached thus two big challenges of the EDLAH project: (1) increase in personal confidence of users, participating in the project, (2) reduction of the technological and

psychological barriers for older people, in the use of computer technology, due to the use of EDLAH. The average SUS score from KG&S was 65.25 with a standard deviation of 14.36; while the average SUS score from MRPS was 61.75 with a standard deviation of 11.96. These results should be considered as being satisfactory, at this stage of the EDLAH development. Indeed, we strongly suggest to perform a usability inspection – with external experts – before introducing the EDLAH solution in the market. Globally, the results on the "terminology and learnability" and on the "user satisfaction" questionnaire appeared to be more than acceptable. By contrast, lower results were observed on the questionnaire measuring the potential impact of the EDLAH system. Note that the results observed on this questionnaire are not in line with the answers gathered on the interview – see qualitative data results; further complicating the interpretation of this data.

Comparative approach and success parameters of the project. Let us recall here that the methods – questionnaires, prototypes, protocols – used in the different trials changed. In addition, due to illness of the main KG&S researcher, the third trial in KG&S was carried out by another investigator. Therefore there may have been a slightly different user responses between the second and the third trial (experimenter bias). Caution should thus be exercised in the interpretation of the comparative analysis. One of the success parameters of the project was to *increase the usability of the system*. Based on the results obtained on the questionnaires throughout the project live, this objective was not reached. In the KG&S group, the system usability score and the average score on the terminology questionnaire decreased between the second and the third trial. The average score on the learnability questionnaire decreased also in both groups of seniors between the second and the third trial. Taken together, these results suggest that the EDLAH solution tested on the demonstration phase, is perceived as being less user-friendly than the previous prototypes. Different hypothesis could be advanced:

1. In the first and second trial, we tested a system composed by 4 petals, while in the third trial we tested a solution composed by 8 petals. The prototype presented on the trial phase included more applications and was thus more complex. For the business product, the consumer should be initially introduced to a smaller number of their most likely useful apps and then, once they get used to using them, more applications should be available, add more that might also be of use.
2. Contrary to the first and second trial, participants tested the EDLAH prototype at home (and not in a controlled environment) without the physical presence of the researchers and caregivers. Participants were less guided, even if support was provided remotely, when needed. Interestingly, on the fourth item of the System Usability Scale ("I think that I would need the support of a technical person to be able to use this system"), KG&S participants scored very low on the first and second trial (Mean=1.67, SD=0.94 and respectively Mean=1.93, SD=1.27) while they scored relatively high on the third trial (Mean=3.70, SD=0.95); validating to some extent this hypothesis.
3. Part of the sample of the third trial was composed by new users; who didn't participate on the previous trials (2 from MRPS, and 4 from KG&S).

The second and the fourth success parameters of the project were to *increase user overall satisfaction* and *positively impact on the quality of life, health and social interaction of the end-users*. Based on the results obtained on the questionnaires, these objectives were also not reached: satisfaction score decreased for both MRPS and KG&S seniors throughout the project live. Two hypothesis could be advanced:

1. Not all the applications were perceived as being useful for all users: "Different users, different needs, and different programs! For me, for example, Health and Nutrition is not useful" (MRPS senior). Testing an important number of applications could potentially have a negative effect on both satisfaction and perceived degree of

usefulness (as measured by the questionnaire 'potential impact of the EDLAH system').
2. In the third trial, participants tested the EDLAH solution for only 3-5 days – due to time constraint. This may be insufficient to assess in a proper way the satisfaction and the usefulness of the system.
3. In the third trial, third party applications were installed (Calendar and Solitaire (Patience) card game). These two applications caused significant dissatisfaction and reduced usability due to small text in the calendar and advertising in the game.

The third objective was to *increase in personal confidence of users, participating in the project, due to the use of EDLAH and reduce of the technological and psychological barriers for older people, in the use of computer technology*. Based on the results of the questionnaire measuring the attitude toward using technology, this objective has totally been reached: after having used the EDLAH solution, users tended to feel less anxious about the use of technology.

6 Appendixes

6.1 Appendix 1: Demonstration, pretest questionnaire

A. Personal Information

A0. Participant's name: _____

A1. Gender

□ Male □ Female

A2. Age: _____

A3. Do you have a Skype account?

□ Yes □ No

A4. Do you have a Google account?

□ Yes □ No

B. Knowledge and experience of computing

B1. Do you have a computer?

□ Yes □ No

B2. Do you have a tablet?

□ Yes □ No

B3. Do you have a smart phone?

□ Yes □ No

B4. Do you have an internet connection?

□ Yes □ No

B5. Level of experience with the use of the computer:

- No experience
- A little
- Average
- Advanced
- Expert

B6. Level of experience with the use of a tablet:

- No experience
- A little
- Average
- Advanced
- Expert

B7. Level of experience with the use of a smart phone:

- No experience
- A little
- Average
- Advanced
- Expert

B8. Level of experience with the use of internet:

- No experience
- A little
- Average
- Advanced
- Expert

C. Attitude toward technology

C1. I am confident that I can learn new technologies.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don’t agree

C2. I feel apprehensive about using new technologies.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don’t agree

C3. Anyone can learn to use new technologies if they are patient and motivated.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don’t agree

C4. You have to be a genius to successfully use new technologies.

- Strongly agree

- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

C5. In the near future, I would use new technologies daily.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

C6. New technologies scare me.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

C7. Learning to operate new technologies is like learning any new skill – the more you practice, the better you become.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

C8. I am worried about the use of new technologies.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

6.2 Appendix 2: Demonstration, post-test interview

A0. Participant's name: _____

1. What did you like about the system?

_____
_____
_____
_____
_____

2. What did you dislike about the system?

_____
_____
_____
_____
_____

3. Do you think that EDLAH is easy to use?

_____
_____
_____
_____
_____

4. Do you think that EDLAH is useful?

_____
_____
_____
_____
_____

5. Do you think that EDLAH is fun?

_____
_____
_____
_____
_____

6. Do you feel more confident in using technologies?

_____
_____
_____
_____
_____

7. Could EDLAH have an impact on the quality of life and health of the user?

8. Could EDLAH have an impact on the social interaction of the user?

6.1 Appendix 3: Demonstration, post-test questionnaire

A0. Participant's name: _____

A. Attitude toward technology

A1. I am confident that I can learn new technologies.
- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

A2. I feel apprehensive about using new technologies.
- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

A3. Anyone can learn to use new technologies if they are patient and motivated.
- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

A4. You have to be a genius to successfully use new technologies.
- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

A5. In the near future, I would use new technologies daily.
- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

A6. New technologies scare me.
- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

A7. Learning to operate new technologies is like learning any new skill – the more you practice, the better you become.
- □ Strongly agree
- □ Tend to agree
- □ Indifferent

- □ Somewhat disagree
- □ Don't agree

A8. I am worried about the use of new technologies.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

B. System Usability Scale

B1. I think that I would like to use this system frequently.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

B2. I found the system unnecessarily complex.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

B3. I thought the system was easy to use.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

B4. I think that I would need the support of a technical person to be able to use this system.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

B5. I found the various functions in this system were well integrated.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

B6. I thought there was too much inconsistency in this system.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

B7. I would imagine that most people would learn to use this system very quickly.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

B8. I found the system very cumbersome to use.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

B9. I felt very confident using the system.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

B10. I needed to learn a lot of things before I could get going with this system.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

C. Terminology and learning

C1. The EDLAH tablet makes sense to me"

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

C2. The terminology used in EDLAH is inconsistent.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

C3. I believe the EDLAH tablet is clear and understandable.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

C4. I feel that the terminology is hard to understand.

- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree

□ Don't agree

C5. I think it is easy to learn to use the EDLAH system.
□ Strongly agree
□ Tend to agree
□ Indifferent
□ Somewhat disagree
□ Don't agree

C6. It is difficult to remember how to use the EDLAH system.
□ Strongly agree
□ Tend to agree
□ Indifferent
□ Somewhat disagree
□ Don't agree

C7. I quickly became skillful at using the EDLAH system.
□ Strongly agree
□ Tend to agree
□ Indifferent
□ Somewhat disagree
□ Don't agree

C8. I put in a lot of time to learn how the EDLAH system works.
□ Strongly agree
□ Tend to agree
□ Indifferent
□ Somewhat disagree
□ Don't agree

D. Satisfaction

D1. I am satisfied with the EDLAH system.
□ Strongly agree
□ Tend to agree
□ Indifferent
□ Somewhat disagree
□ Don't agree

D2. I would recommend the EDLAH system to a friend.
□ Strongly agree
□ Tend to agree
□ Indifferent
□ Somewhat disagree
□ Don't agree

D3. The EDLAH system is nice to use.
□ Strongly agree
□ Tend to agree
□ Indifferent
□ Somewhat disagree
□ Don't agree

D4. The EDLAH system works well.
□ Strongly agree

- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

D5. The EDLAH system is good.
- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

D6. I would like to use the EDLAH system.
- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

E. Potential impact of EDLAH

E1. I think that the EDLAH system could help me to complete my daily tasks.
- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

E2. I think that the EDLAH system could make me feel more motivated to carry out my daily tasks.
- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

E3. I think that the EDLAH system could make me feel less stress.
- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

E4. I think that the EDLAH system could help me to be more independent/autonomous.
- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree
- Don't agree

E5. I think that the EDLAH system could help to reduce my need for care.
- Strongly agree
- Tend to agree
- Indifferent
- Somewhat disagree

- □ Don't agree

E6. I think that the EDLAH system could save me time when I use it.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

E7. I think that the EDLAH system could help me keep and increase my social relationships.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

E8. I think that the EDLAH system would make me feel more independent.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree

E9. I think that the EDLAH system could help me to stay healthy.

- □ Strongly agree
- □ Tend to agree
- □ Indifferent
- □ Somewhat disagree
- □ Don't agree