

# Solutions for isolation among seniors during covid

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## 1. Introduction

### 1.1 Cause

With the world population getting older<sup>1</sup> over time and IT systems getting more prevalent than ever<sup>2</sup>. A few problems arise one of which has been named the 'digital divide'<sup>3</sup> this is where people that are not capable of using digital systems get more and more detached from those who are able to use these systems. This only becomes more noticeable when you consider that many things require you to make use of digital means, this can be simple things that suddenly become a problem. Things like making an appointment to go to the barber or doing your banking. These are all examples of the digital divide, this is the split between people being able to understand and use digital means and those who do not. Also, communication gets evermore digital meaning the digital divide is driving loneliness especially with seniors<sup>4</sup>. In 2020 a large pandemic hit which forced people to stay inside their homes. During this lockdown, it is becoming more and more apparent how important these systems can be to keep seniors engaged with their friends and families<sup>5</sup>. The goal of the research is to show the need and willingness of seniors to overcome the digital divide that has only become more visible during the Covid lockdown. Using E-Learning<sup>6</sup> to gain the abilities to overcome this gap.

The goal of this research is to show ways to help senior citizens overcome this gap with the use of online learning. This will help these people overcome big and growing issues that often lead to large personal problems and isolation. To reach this goal we have interviewed many seniors about issues they run into during this period to see what the main challenges would be. In addition to this we showed the seniors videos teaching them potential solutions to these issues as well as being able to show us if they learn from these videos. Using this information, we conclude whether seniors learn from these online learning methods.

### Main Question

How can digital services help seniors during the Covid lockdown

### Sub questions:

1. What challenges do seniors experience during Covid lockdown
2. What digital services can help seniors
3. Do seniors learn from online learning sources

## 2. Background research

The research started off with a background research done in two ways. One being a literature review where the other was a research conducted by IT4Senioren, which is a company specialised in teaching seniors how they can use digital means to overcome challenges. During the literature research we investigated how well seniors could learn from e-learning sources as well as other ways to bridge the digital divide. During our research IT4senioren provided us with data about seniors they were working with as well as allowing us to contact these seniors for interviews or other questions.

### 2.1. IT4Senioren background research

IT4Senioren has done their own research detailing the digital services used by seniors before covid as well as the different systems they were interested in. We based part of our survey on the data from this research.

### 2.2. Background about E-learning for seniors

At the start of our research we have looked at literature discussing two major subjects, the first being internet use by senior citizens and the digital divide, and the second being E-learning.

- A. **Internet use/digital divide:** from the research in this part it is clear that the overall impact of the internet as a communication/information gathering tool is very positive and helps seniors stay more active both mentally and physically<sup>78</sup>. this is however only possible when they reach all the pillars of the digital divide, mainly the motivational and skills access are an issue with a lot of senior citizens<sup>9</sup>. Another big issue that keeps people away from getting full access to digital means is the price of many digital devices leading people that don't see the full use of technological means<sup>10</sup>.
- B. **E-learning:** There are many possible ways to reach seniors with online learning, one of these being gaming. This is an option that is still very rarely used when considering seniors. However, there is an interest from the seniors, but most games are developed for younger people and for this reason do not take their interests, needs, and abilities in mind<sup>11</sup>. When it comes to E-learning focused on seniors it is important to note that they have different motivations and needs than the students that are often referenced in E-learning research. Such being the need for personal help when needed both in the use of the digital platform as well as the subject itself <sup>12</sup><sup>13</sup>. From the research done for E-learning done in japan<sup>14</sup>, a few things stand out. The seniors have a desire for a different reward system due to the reward having to come from the study itself rather than after the study. From the seniors that did not complete the course most actually noted that they simply didn't have enough time.

### 3. Challenges seniors experience during covid lockdown

#### 3.1. Methodology

As covid started to cause a lockdown we reached out to seniors to figure out the issues they were experiencing to be better capable of focussing these issues in the rest of the research. The interviews were structured around the data collected by IT4Senioren in their past research which allowed us to focus the interviews on shopping and contact with relatives as well as asking about other challenges. From this data collected it was clear that the main issues were the shopping and contact with relatives. For this question we interviewed 23 seniors, we asked them largely closed questions with an open question at the end so they could voice their other concerns.

#### 3.2. Shopping

The first issue we questioned the seniors about, out of the 23 seniors we interviewed, 16 did their own shopping before the start of the Covid lockdown. This clearly shows that most of the seniors can do the shopping by themselves. Another little yet surprising detail that can be found with one of the seniors already doing their shopping online.

However, when looking at the data in Figure 1 from during the Covid lockdown only 7 of the seniors said they did their own shopping. A lot of these being taken over by people getting helped by family or friends, with this statistic shooting up to 10 from the 3 it was at before the lockdown. In addition, the amount of seniors using online options went up to 3 from 1 before. From this data we can conclude that where the seniors are still physically able to do the shopping they no longer do, most likely out of fear for the virus which of course is most lethal to seniors.

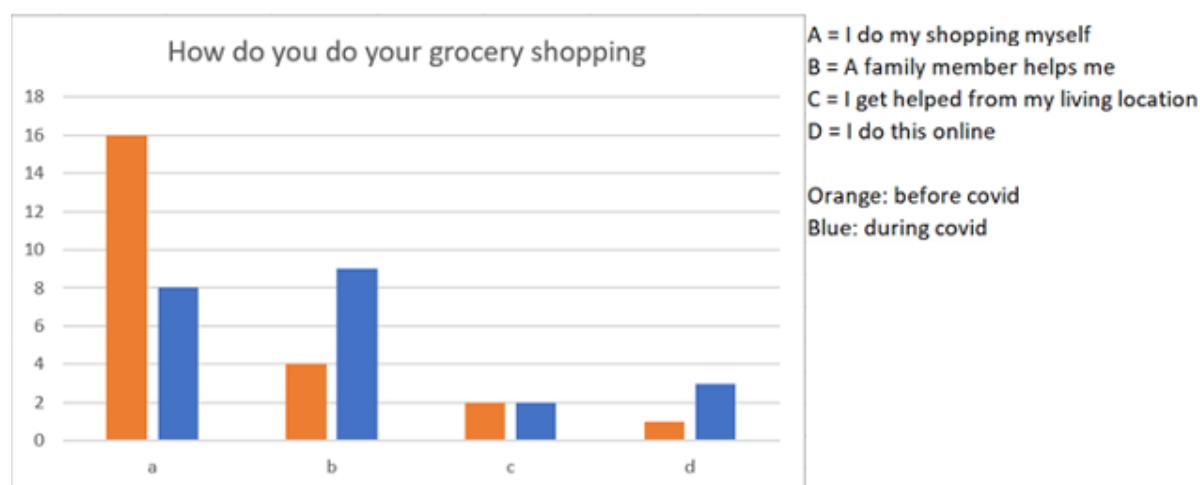


Figure 1 – Change in grocery shopping behaviour amongst seniors

### 3.3. Contact with family members

Another issue that was clear from the start of the research was the contact with family members, this being made difficult by the lack of personal interaction. This being instated to protect the health of these seniors, to verify if this were an issue the seniors experienced and not just one, we thought they would we asked them in the questionnaire. Out of 23 people interviewed, 5 stated they did have a lot of trouble staying in contact with family. Another 11 seniors also indicated they had some trouble maintaining this contact. Meaning that in total 17 seniors had some kind of difficulties.

Another thing that stood out clearly was that none of the interviewed seniors for whom their family did shopping noted to have much trouble regarding loneliness. This could be something to remember even after the lockdown is over as loneliness amongst seniors is a prevalent issue in the world in general.

After this question we asked whether they were making increased use of digital devices during this crisis, to see if we could find a connection between those who did and those who didn't and their ability to stay in contact with relatives. What was instantly clear looking at these results is that all but one of the seniors that had a lot of trouble maintaining contact did not make more use of digital means. Where the far majority of those who did increase their digital device usage had little to no issue maintaining contact. This very shows how the usage of digital devices allows seniors to feel connected even when physical interaction is not possible.

From doing this survey we were able to conclude that indeed shopping was the main issue closely followed by contact with family and relatives. With these being such large issues it is very important to find a solution to these as soon as possible.

## 4. Potential solutions

### 4.1. Methodology

Now that we have identified what major issues seniors are experiencing during this lockdown it is important to have a look at what digital services are already available to solve these issues. To do this we had a brainstorm session with three experts in the fields of IT and Seniors. During this session many potential solutions have been discussed and here are the primary ones that were applicable to the article.

### 4.2. Shopping

For shopping, a lot of options are available with these days almost every grocery store in the Netherlands having an online shop. However, being able to use these platforms is the hard part. Luckily, there are learning resources available to teach about the options. Such as SeniorWeb<sup>15</sup> however this is also something that would be teachable in an E-learning course or by being shown how-to by a family member.

### 4.3. Contact with family members

As reflected in the results from the questionnaire digital means can help seniors stay in contact with their family members. This can be done with either a mobile device or personal computer, on mobile devices apps such as Whatsapp can allow for basic communication. However, over these extended periods of time people might want to have more direct or personal contact. A good option for this is video calling, however video calling is a skill that is not very often mastered by seniors. There are E learning resources available for this, these are in the form of written guides<sup>16</sup>, or E-learning videos such like those provided by IT4Senioren.

### 4.4. Social media and online entertainment

To combat boredom there are many applications that can help, such as digital games described in the article Investigating narrative in mobile games for seniors<sup>17</sup> Another option are social media, there are many of these: Facebook, Instagram, and Twitter, all having a different audience. By looking at the demographics on each of the platforms it quickly becomes visible that Facebook is the most popular platform for senior citizens. Facebook however is known for something else then being a social medium, which is the amount of fake news. To push this back Facebook introduced the verification mark which is a blue V next to certified accounts. This is not a fail proof system however it will give a solid indication of whether an account real and information shared by it is to be believed. This mark however is not worth anything unless the seniors are informed about the existence and meaning of this mark.

From these discussions we have concluded that there are many possible solutions however the main challenge is reaching the seniors themselves with these. As we must maintain a safe distance from these seniors the only way we see fit is online learning, in the next chapter we will be looking at how realistic online learning for seniors is.

## 5. Do seniors learn from online learning source?

### 5.1. Methodology

For the main part of our research, we made videos aimed at teaching seniors to complete tasks needed to overcome current issues and bridge the digital divide. To test how well these worked we made use of a 2-part survey. When seniors participated in the research, they would fill in the first part of the survey after which we would give them time to watch IT4Senioren E-Learning content. After this we would ask them to fill in the second part of the survey in which they would describe their experiences with the course as well as if they used the information given in the course.

### 5.2. Before the videos

From the interviews before showing the videos it became clear that many of the seniors had not, yet video called with only 4 of the 17 seniors having video called before. All the ones that had already used video calls had done this using Skype, with one also being experienced using WhatsApp.

A surprising number of seniors had done online grocery shopping before. With one third of the seniors having done this before. Most of them having done this with Albert, this makes sense as this is the most well-known service created by a popular household name being Albert Heijn.

### 5.3. After the videos

After watching the video's we asked the participants whether they learned from the videos these results allowed us too see if this was an effective strategy to reach seniors.

When asking the seniors whether the videos were clear and understandable a very decisive 77% said this was the case as seen in Figure 3. However, the real question was whether they would be able to implement the knowledge they learned. So, when interviewed a week later as seen in Figure 2 when asked 65% of the seniors had either video called or done online shopping. With the majority of these noting they could do so with ease. This is a clear indication that when shown the right content senior can learn from E-learning resources. The tricky part however is getting the right content to the right people.

From the ones that did not use the information, four said they did not understand the video's. This was already visible in the first question. However, what was also visible was that one of the seniors simply did not have the resources necessary to do either video calling or online shopping. The average on this might be higher due to a lot of the questionnaires being done over WhatsApp, which means the seniors had to have access to a mobile phone.

Seniors that used the information from the videos within a week

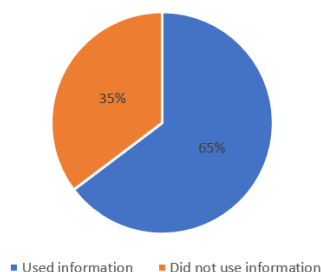


Figure 2 – Seniors that used the information

Seniors that found the information provided clear and understandable

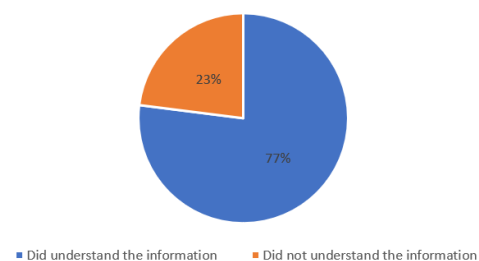


Figure 3 – Seniors that understood the video's

## 6. Conclusion and future directions

### 6.1. What are challenges seniors experience during Covid lockdown

From the interviews we had done it was clear there were two primary challenges experienced during the covid lockdown.

1. Shopping
2. Contact with family members

To solve this, big steps can also be taken as only one of the interviewed seniors made use of online shopping. This is the reason why the research proceeds to focus primarily on increasing this group to solve this issue. The arguably more challenging of the two issues, however, is the contact with family members. Where people can no longer have events with much of the family it is clear that many struggle with this.

### 6.2. What are digital services that can help seniors

To help seniors solve these before mentioned challenges we have noted multiple services that are able to help. Most grocery stores have an online shopping service which with some practice many seniors can use. This would largely solve the issue of shopping however, a big challenge is getting this information to the seniors. Contact with family is trickier as services such as whatsapp and social media are able to help this will never fully be able to replace in person contact. Which is why we conclude that the best option for this are video calling services. These allow seniors to stay in contact with family in a much more personal way than messaging or normal calling.

### 6.3. Do seniors learn from online learning sources

From the results of chapter three it becomes apparent that seniors can learn from online video resources when given a reason to do so. However, the hardest part is getting the content to the seniors, due to them having a small online presence. Another thing these results show is the motivation which most seniors to test what they had just learned with only one of the seniors saying that they had just not gotten to using the information a week after being shown the video's.

### 6.4. How can digital services help seniors during the Covid lockdown

After looking at the results of the questionnaires we are able to define a couple issues that seniors struggle with during this Covid crisis. With the most prevalent of these being loneliness and not being able to be with family/friends. Followed by grocery shopping and boredom.

There are services that can help these seniors however, the hardest part is teaching them how to use these. Which is what E-Learning videos such as those made by IT4Senioren are especially useful for. From the research we were able to see almost 65% of seniors using the learned information within a week of learning this.

# References

- <sup>1</sup> UN. (z.d.). Ageing. United Nations. Geraadpleegd 2 augustus 2020, van [https://www.un.org/en/sections/issues-depth/ageing/#:~:text=Globally%2C%20the%20population%20aged%2065,11%20in%202019%20\(9%25\).](https://www.un.org/en/sections/issues-depth/ageing/#:~:text=Globally%2C%20the%20population%20aged%2065,11%20in%202019%20(9%25).)
- <sup>2</sup> United Nations. (z.d.). The Impact of Digital Technologies. Geraadpleegd 2 augustus 2020, van <https://www.un.org/en/un75/impact-digital-technologies>
- <sup>3</sup> van Dijk, J. A. G. M. (2006). Digital divide research, achievements and shortcomings. *Poetics*, 34(4–5), 221–235. <https://doi.org/10.1016/j.poetic.2006.05.004>
- <sup>4</sup> Digital Divide ‘a Matter of Life and Death’ amid COVID-19 Crisis. (2020, 11 juni). United Nations. <https://www.un.org/press/en/2020/sgsm20118.doc.htm>
- <sup>5</sup> Li, H. O.-Y., & Huynh, D. (2020). Long-term social distancing during COVID-19: A social isolation crisis among seniors? *Canadian Medical Association Journal*, 192(21), E588. <https://doi.org/10.1503/cmaj.75428>
- <sup>6</sup> Hetzner, S. (2014). Personalisation and Tutoring in e-Learning – The Key for Success in Learning in Later Life. *eurodl*. <https://eurodl.org/index.php?p=special&sp=articles&inum=5&article=626>
- <sup>7</sup> Farkiya, R., Tiwari, D., & Modi, N. C. (2018). A Study on Impact of Internet Usage on Quality of Life of Senior Citizens. *Jaipuria International Journal of Management Research*, 4(2), 52. <https://doi.org/10.22552/jijmr/2018/v4/i2/177076>
- <sup>8</sup> Czaja, S. J., Charness, N., Fisk, A. D., Hertzog, C., Nair, S. N., Rogers, W. A., & Sharit, J. (2006). Factors predicting the use of technology: Findings from the center for research and education on aging and technology enhancement (create). *Psychology and Aging*, 21(2), 333–352. <https://doi.org/10.1037/0882-7974.21.2.333>
- <sup>9</sup> van Dijk, J. A. G. M. (2006a). Digital divide research, achievements and shortcomings. *Poetics*, 34(4–5), 221–235. <https://doi.org/10.1016/j.poetic.2006.05.004>
- <sup>10</sup> van Deursen, A. J. A. M., & van Dijk, J. A. G. M. (2018). The first-level digital divide shifts from inequalities in physical access to inequalities in material access. *New Media & Society*, 21(2), 354–375. <https://doi.org/10.1177/1461444818797082>
- <sup>11</sup> Hyunjeong Kim. (2015). Content Needs and Suitability Research of Elderly Users on Smart TV - Focusing on Interviewing Elderly Users regarding contents and tasks on smart TV -. *Journal of Digital Design*, 15(1), 97–108. <https://doi.org/10.17280/jdd.2015.15.1.010>
- <sup>12</sup> Bakaev, M., Ponomarev, V., & Prokhorova, L. (2008, July). E-learning and elder people: Barriers and benefits. In 2008 IEEE Region 8 International Conference on Computational Technologies in Electrical and Electronics Engineering (pp. 110-113). IEEE.
- <sup>13</sup> Hetzner, S., & Leen, E. A. (2013). Personalisation and tutoring in e-Learning–The key for success in learning in later life. *European Journal of Open, Distance and E-learning*, 16(2).
- <sup>14</sup> Githens, R. P. (2007). Older adults and e-learning: Opportunities and barriers. *Quarterly Review of Distance Education*, 8(4), 329.
- <sup>15</sup> SeniorWeb. (2020, 22 april). Boodschappen doen via internet. Geraadpleegd op 4 juli 2020, van <https://www.seniorweb.nl/artikel/boodschappen-doen-via-internet>
- <sup>16</sup> Videobellen met whatsapp . (2019). Geraadpleegd op 6 juli 2020, van <https://www.hoewerktdeapp.nl/whatsapp/hoe-werkt-het/kun-je-videobellen-met-whatsapp/#:~:text=Om%20een%20WhatsApp%2Dvideo%2Doproep,inkomende%20WhatsApp%2Dvideo%2Doproep.>



<sup>17</sup> Chu Yew Yee, S. L., Duh, H. B.-L., & Quek, F. (2010). Investigating narrative in mobile games for seniors. Proceedings of the 28th international conference on Human factors in computing systems - CHI '10, 1. <https://doi.org/10.1145/1753326.1753424>

<https://goodtechs.eai-conferences.org/2021/call-for-papers/>