

A Study on the Experience of Older Adults Participating in Online Learning during the COVID-19 Pandemic

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Abstract

The qualitative study explored the online learning experiences of older adults during the Covid-19 pandemic, including their feelings, learning difficulties, and coping strategies. This study collected the experiences of 7 older adults who participated in online learning courses at the Active Aging Learning Demonstrating Centers in Taiwan through semi-structured interviews. The findings were as followings: 1. Initially, older adults felt nervous and somewhat resistant when they participated in online learning. However, to ensure uninterrupted learning during the Covid-19 pandemic and with encouragement from family members and institutional staff, they were willing to try to learn new things. 2. Problems concerning the use of digital equipment, problems with interface control, memory or vision problems, distraction caused by external environmental factors during class and challenges regarding teacher and student interaction were the main difficulties for older adults to participate in online learning. 3. Older adults tried to solve their online learning difficulties by participating in the organization's online course operational training in advance, looking for friends or classmates to guide and share learning information, taking notes and pictures of themselves, and asking teachers for instant feedback and suggestions. Finally, the results of this study can provide government and education-related institutes to develop online learning courses as a reference.

Keywords: Older Adults, Learning Difficulties, Coping Strategies, Online Learning, Lifelong Learning

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Introduction

In the Information Age, information technologies and networks have become an integral part of human life, and the ability to use technology is a basic skill that every person must possess. Networks enable people to engage in interpersonal interaction and use various services, including shopping, medical appointment scheduling, learning, and health management, which can enhance lifestyles [1, 2]. During the COVID-19 pandemic, technology and networks became even more pervasive as a result of efforts to prevent the spread of the disease through human contact. Online learning rapidly became widespread, and institutions of higher education, businesses, and senior learning programs began to view it as a tool to improve modern learning models and lifelong learning because it offers a wide range of educational opportunities that drive personal growth [3, 4, 5].

The outbreak of COVID-19 in 2020 posed a massive challenge to traditional in-person teaching in senior education worldwide. When Taiwan announced a Level 3 alert in May 2021, senior education agencies in Taiwan, such as active aging learning centers, universities and colleges that offer senior citizen learning camps, and community colleges, were forced to adhere to disease-prevention policies, and they suspended in-person classes and activities; consequently, older adults could not continue their education [6]. The loss of opportunities for interpersonal interaction and community involvement also forced older adults to become less active, which compromised their physical and mental health [7, 8]. Institutions of senior education worldwide began to develop online learning curricula and models to encourage older adults to engage in online learning, which enables them to maintain their physical and mental health, socialize, and continue learning [4, 6, 7]. In Taiwan, to overcome the challenges created by the pandemic, the Ministry of Education [4] encouraged active aging learning centers to develop remote learning programs that enabled older adults to continue their lifelong learning during the pandemic. These programs involved active aging learning centers offering either livestreamed or prerecorded online courses about music, exercise, or photography; older adults were able to interact with teachers and classmates through the programs and remain physically and mentally healthy.

Despite their convenience, new technological applications and online learning can create considerable challenges, particularly for older adults. Prior to the COVID-19 pandemic, network usage and online learning were not prevalent among older adults, resulting in digital exclusion [4, 7, 9]. Age UK [10] reported that more than 75% of UK adults aged 50–74 years are online but that only 46% of those aged 75 years and older use the Internet regularly. A report on digital opportunities in individual households by National Development Council of Taiwan [11] stated that only 43.5% of Taiwanese adults aged 65 years and older use the Internet

and that fewer than 10% of adults aged 60 years and older participate in online learning classes. Major obstacles include a lack of knowledge of computers and technology, hesitancy to try new technology, unaccommodating learning environments, and deteriorating eyesight and memory, which would weaken their ability to remember how to use certain technologies. Feelings of anxiety and helplessness can discourage older adults from learning, exacerbating digital exclusion[12, 13, 14].

Although the number of older adults willing to use the Internet has increased because of the pandemic, some may not have the ability or confidence to use the Internet to shop or learn. In addition, older adults are often accustomed to in-person classes and are less likely to take online classes[7, 15]. Most older adults do not know how to use smartphones and have never participated in online learning, and a lack of skills and trust in the Internet may lead to anxiety and an unwillingness to participate in online learning. Some older adults face challenges such as blurred vision, trouble using smartphones, and an inability to keep up in class[12, 16, 17]. Older adults require peer support and assistance from others while learning. This support may include teachers removing obstacles and encouraging participation by providing instructions on how to navigate online learning platforms, progressing through the course at a leisurely pace, and responding immediately to questions[4, 18, 19, 20].

The COVID-19 pandemic altered senior education worldwide and forced institutions and teachers to change their curricula and teaching methods. Online learning has created new opportunities and challenges in lifelong learning. Such challenges are particularly notable in older adults who wish to continue their learning. Whether older adults can adapt from traditional in-person learning to online learning warrants investigation. A further insight into the experiences of older adults with regard to their challenges and coping strategies in online courses can help teachers improve and promote online courses in the future. Therefore, the objective of this study was to examine the experiences of older adults participating in online courses offered by active aging learning centers, including their initial feelings toward online learning, challenges concerning learning difficulty, and coping strategies adopted to address these challenges. The study results may serve as referential information to help teachers and educational institutions develop online classes in the future.

Materials And Methods

Study design

Data were collected through qualitative, semi-structured, one-on-one interviews to ensure that the participants felt comfortable expressing their thoughts freely and that the researcher could adjust the questions on the basis of participants' responses (Hesse-Biber & Leavy, 2011). The participants were asked about their reasons for taking online classes,

challenges they encountered, solutions they found, and assistance they received.

Participants

Purposive sampling was used to recruit participants meeting the following inclusion criteria: (a) older adults in active aging learning centers listed on the Ministry of Education's web portal for senior education in Taiwan and (b) older adults who had attended and completed at least one online class offered by the aforesaid active aging learning centers during the COVID-19 pandemic. Seven older adults were recruited: one man and six women between the ages of 59 and 77 year; the mean age was 64.4 years. The participants had been involved with the active aging learning centers for 3 to 14 years.

Procedures

Between September and November 2022, the researcher contacted the participants to notify them of the purpose of the study and obtain their informed consent. Each interview was approximately 40 to 60 minutes, and the researcher ensured that they were flexible and open to enable the participants to describe their experience in detail. Interview questions included "Why did you enroll in the online classes?", "What challenges have you encountered?", and "Did you receive in any help during the process?"

Data Analysis

Audio recordings of the interviews were transcribed and annotated to ensure the integrity of the data. The participants were labeled using codes to protect their privacy; the first digit indicates their gender, the second their age, and the third their experience with online learning years. For example, M-68-3 indicates a male participant aged 68 years with 3 years of experience. The researcher read the transcripts and extracted keywords to develop themes, which were then subdivided (Miles et al., 2014).

Ethical considerations

This study was approved by the China Medical University and Hospital Research Ethics Center, and all participants provided informed consent.

Results

Three main themes were identified in this study: reasons and feelings of older adults participating in online courses, challenges they faced during online courses, and solutions they adopted to cope with these challenges.

Reason and feeling of older adults participating in online courses

Initial feeling: Somewhat anxious and reluctant to attend online courses

Anxiety and Hesitance

Some participants were hesitant to participate in the online classes because they did not understand how to use the required technology:

We were nervous because we didn't have a lot of experience with technology (M-68-3).

At first, I was opposed the course because I didn't have experience with technology. I found the transition difficult because learning how to use technology at our age is very difficult (F-65-11).

Sense of Anxiety Associated with Unfamiliarity with Digital Technology

Some participants were unfamiliar with technology, which made them apprehensive:

We didn't have a lot of experience with technology, especially information technology (M-68-3).

It was hard at the beginning because I wasn't familiar with some of the features on my phone, which made me nervous (F6-64-10).

Willingness to Try and Continue Learning Amid Support from Family Members and Relevant Staff Members

Willingness to Try and Learning New Information

Despite the challenges, the participants indicated that online learning offered a new experience and that they were willing to engage to expand their horizons:

Online classes are new to me, but I'm willing to try (M-68-3).

Learning a new skill always takes time, but that's a good thing, because there's a reward (F-77-4).

Continual Learning Bolstered by Support from Family and Staff

Some participants stated that they had not used a computer for 10 years but were willing to try to participate in online learning. One participant was supported by a supervisor at a learning center who described himself as both a teacher and learner; he had learned about online classes to help the older adults at his center.

Actually, I hadn't used computer for almost 10 years, but I decided I had to for the sake of my learning (F-77-4).

One of the supervisors said to me, "As a teacher, I have a responsibility to guide my students. If I don't know how to do something, how can I expect my students to? I realized I had more to learn" (F-65-11).

Challenges for Older Adults Participating in Online Courses

Problems Concerning the Use of Digital Equipment

Unfamiliarity with the Operation of Relevant Technology

The participants' unfamiliarity with computers was the main challenge:

At this age, we don't use computers, so it's difficult for us (F-60-14).

We would probably consider computer skills to be a weakness for us (F-65-11).

Connectivity and Equipment Specification Issues

Some participants experienced interruptions due to poor connectivity and other technical difficulties:

My slow Internet definitely affected my experience (F-60-14).

My Internet goes out a lot, and my computer has problems to. I also don't know how to record class, and my computer runs out of power all the time. All of these things interrupted class (F-65-11).

Problems with Interface Control

Unfamiliarity with Interface Control and Videoconferencing

Some participants noted that they were unfamiliar with videoconferencing and were worried they would press wrong buttons and interrupt class. This led them to focus only on the teacher speaking:

In the beginning, we just listened because we didn't know how to use the app and were worried about pressing the wrong button (F-60-14).

The app can be frustrating because all of its features are hard to understand (F-65-11).

Slow Typing Speeds Due to Low Dexterity

Some participants struggled to type on the computer quickly because of their low dexterity; this affected their progress in class because they were more used to answering questions verbally:

We're slow typers, which may have affected our performance. Answering questions verbally would be faster (F-60-14).

Sometimes we had to type, and I don't type very quickly, so sometimes, I wouldn't finish in time (F-64-10).

Memory or Vision Problems

Inability to Memorize Interface Control Procedures or Course Content

Participants stated the memory problems were a common problem because they often forgot how to use the programs and what they had learned:

Many older adults have problems with online learning because they're forgetful (F-65-11).

Our memory is not as strong as a young person's, so we can't remember as much. Our capacity to remember decreases with age (F-64-10).

Small Fonts Presented in Online Learning Materials or Videos

Some participants access online classes on their phones, and because they may have poorer vision, they have trouble viewing materials with small text:

For me, a big issue is that sometimes, the font is too small (M-68-3).

With online classes on the phone, the font being too small makes a difference. Vision problems play a role (F-60-14).

Eye Strain Due to Small Screens

For those using their phones, the small screen may cause presbyopia, and those with age-related macular degeneration may experience eye strain, which may affect the learning process:

We are sometimes affected by presbyopia when we use our phones. Sometimes we accidentally press the wrong button (F-59-12).

We have poor vision. Some have macular degeneration, others have presbyopia. Our eyes can get really sore after class (F-60-14).

Distraction Caused by External Environmental Factors During Class

Some participants stated that during online classes, they are sometimes distracted by elements in their environment such as family members or friends. Other sources of distraction include classmates forgetting to mute their microphones, which can prevent them from hearing clearly.

For example, if my grandson is here, if someone is home, or if a friend is over, it's distracting (F-60-14).

Only one person can have their microphone on during class, if someone else turns their microphone on, that causes interference, and we can't hear clearly (F-59-12).

Challenges Regarding Teacher and Student Interaction

No Immediate Feedback from Teachers

The lack of opportunities to interact with teachers was another challenge. In in-person classes, students can ask the teacher questions at any time and receive an answer immediately. In online classes, students spend most of their time watching; if they have any questions, teachers may not be able to respond immediately.

In an in-person class, the teacher can help you at any time. In an online class, you can only listen and watch. That's how they differ (F-60-14).

In an in-person class, the teacher is right there. You can ask questions at any time. In an online class, if everyone has a question, it's hard to ask them all (F-58-12).

Few Opportunities for Interaction with Teachers and Peers

The participants stated that online learning entails fewer opportunities to interact with peers and teachers:

With in-person classes, you interact with each other before and after class. Online, you can only interact with the teacher (F-60-14).

During [the pandemic], everyone was at home, and [interaction] with peers was impossible (F-77-4).

Difficulties with Understanding Procedures in Practical Classes

Some participants described difficulties in practical classes because of the remote nature. For example, in an online class on aromatherapy, the students watched demonstrations but could not practice the skills themselves:

Online classes are not like in-person classes, where we can touch and understand the materials (M-68-3).

In aromatherapy class, how much strength you apply is crucial. We can figure this out in in-person classes, but online, we may not understand (F-64-10).

Coping Strategies and Assistance Required for Resolving Challenges in Online Courses

Coping Strategies for Addressing Challenges Regarding Unfamiliarity with Computer Operation

To overcome challenges with technology, the participants used group chats created by the active aging learning center to ask questions to each other or administrators; they also asked family members. Some participants practiced using their to familiarize themselves.

Assistance from Chat Groups Created by the Active Aging Learning Center and Class Helpers

In the group chats, administrative staff from the center would taught the participants about using the classes' platforms. Sometimes these staff members joined classes to provide help and troubleshoot.

The center assigns someone to be online with us. When we encounter any issues, that person helps us solve the problem (F-77-4).

Every class has a group chat, and if we have any questions, we can ask the group. The staff at the center teaches everyone how to use [the platform] in the group chat (F-58-12).

Support from Family and Classmates

Some participants asked their classmates or families for help using the computer:

My daughter works next door, so I would ask her to come over and help me figure out how to use the computer when I didn't know what to do (F-65-11).

My tech-savvy classmates offer advice and teach us how to use the computer (F-59-12).

Self-Directed Practice to Ensure Familiarity with Software Operation

To familiarize themselves with the online learning software, the participants practiced using the software on their own:

I practiced opening this software on my own, and after messing around with it a few times, I figured out how to use it (F-77-4).

I think everyone encountered this problem, and you really need to go through several practices to get the hang of it (F-65-11).

Countermeasures for memory or vision issues

Most of the participants had memory or vision issues that affected their learning. They stated that their teachers would increase the font size of the teaching materials, provide reference links, or upload images, as well as provide longer breaks during class. Participants with poor memory would also take notes or take pictures of the lesson.

Teachers Enlarging Fonts, Providing Reference Links, and Uploading Images

According to the participants, the teachers used larger fonts for the teaching materials, provided links to external websites as reference, and upload images of the lessons to clarify key points:

The teacher would show an outline in a larger font and give us a link or tell us where to find more information (M-68-3).

After class, the teacher would upload pictures of the figures from the lessons (F-77-4).

Extending Breaks to Relax the Eyes

The participants indicated that the teachers provided breaks during class for the students to stretch their legs. Some participants expressed that they wanted the breaks to be longer to alleviate eye strain caused by staring at the screen for too long:

The teacher gives us a 10-minute break every hour so we can stand up and move around (F-77-4).

Staring at a screen for a long time makes your eyes tired. Breaks should be longer to help our eyes relax (F-64-10).

Notes and Pictures of the Lessons

Some participants indicated that they took notes and pictures during lessons to review, thereby providing a solution to memory problems:

The students take notes as the teacher goes through a demonstration or explains something (F-77-4).

Most of the time, I take notes and then review and practice afterwards (F-64-10).

Strategies for improving interactions between teachers and students

Strategies for improving interactions between teachers and students involve increasing teacher interactions and peer interactions. These may be accomplished by the teacher providing immediate feedback during class, giving feedback in the class chat group, and enabling student interactions through group discussions.

Immediate Feedback Provided by Teachers During Class or Subsequent Feedback Provided in Group Chats

The participants expressed that although the teacher could not answer all their questions online, the students could upload images of their assignments to the group chat, where the teacher could provide feedback:

After we complete a drawing, we can take a picture and upload it to the group chat so that the teacher can critique it (M-68-3).

After a drawing is done, it's photographed and sent to the teacher in the group chat. Then, the teacher gives us some comments (F-77-4).

Group Assignments Arranged by Teachers for Older Adults to Engage in More Online Interaction

According to the participants, the teachers used group discussion to create opportunities for interaction. Each group had a leader who selected a representative to share conclusions or coordinate presentations.

During the online classes, the teacher would break us up into groups, and each group had a leader. A representative from each group would share what they had learned that day (M-68-3).

The teacher told us to choose seven classmates and that each would be in charge of a topic. We gave an online presentation after practicing and polishing it (F-77-4).

Discussion

COVID-19 forced institutions of senior education worldwide to suspend traditional in-person classes and encourage older adults to transition to online learning [4, 5]. To maintain the physical and mental health of Taiwan's older adults and continue their social engagement through uninterrupted learning, the Ministry of Education has encouraged active

aging learning centers to develop remote learning programs that allow older adults to continue their lifelong learning at home during the pandemic [6]. However, transitioning from traditional face-to-face learning models to online learning models was a new challenge for older adults [4, 7], and most older adults in active aging learning centers felt apprehensive and even averse to online learning[12, 16]. To prevent interruption to their learning, with encouragement from family and center staff, older adults were willing to attempt online learning[4, 20].

One challenges during this process was technological illiteracy, which caused the older adults to worry about pressing the wrong button and causing a problem[7,12]. Vision problems were another obstacle; the small font sizes and looking at the screen for a long time caused eye strain [10, 13]. Older adults often have poor memory, which may have prevented them from remembering how to use the technology or remember what they learned, which decreased learning efficacy [14, 17]. The older adults were easily distracted by elements in their environment such as family members or friends, which caused interruption. In addition, the older adults indicated that the little time available for interaction with teachers and classmates, unclear instructions, and inability to receive immediate feedback from teachers negatively affected their experience.

To overcome these challenges, the older adults used chat groups created by the active aging learning centers or were assisted by classroom helpers. They also asked their family members or classmates for guidance. Some students practiced using the programs to make the process smoother [4, 16]. The students' vision and memory issues can be resolved by increasing the font sizes, providing reference links, or increasing breaktime to alleviate eye strain [20]. This study also observed that older adults take notes or photos of learning materials to review lessons, which increased learning efficacy. Notably, the older adults indicated that immediate feedback from teachers during class and in group chats were helpful, as were in-class group activities that provided opportunities for peer discussion, interaction, and sharing of knowledge acquired through learning. Such class arrangement can help older adult students understand their learning performance, thereby strengthening their motivation to continue learning [4, 18, 19].

Older adults still face many challenges during the transitioning from traditional in-person learning to online learning. Active aging learning centers and teachers are crucial drivers who facilitate the success of online learning in older adults. Practice sessions that enable older adults to familiarize themselves with the operation of online learning platforms in advance and the arrangement of teaching assistants can reduce anxiety among older adults and the barriers they might encounter while learning. Immediate feedback, flexibility in the lessons, and peer discussion, can also give older adults the confidence to participate in online learning and increase its efficacy. Regarding suggestions for the future development

and design of online courses, senior education institutions and teachers are recommended to organize training that helps older adult students become familiar with using online learning platforms before classes begin. This in turn enhances their capacity to engage in online learning. The design of course content should be adjusted punctually to account for older adult students' vision and memory problems. In addition, sufficient time should be allocated in class for interaction among older adult students and immediate feedback from teachers, thereby enhancing the student learning outcomes.

Bibliography

1. Morrison, D. & McCutcheon, J. (2019). Empowering older adults' informal, selfdirected learning: harnessing the potential of online personal learning networks. *Research and Practice in Technology Enhanced Learning*, 14(10), 1-16.
2. Winstead, V., Yost, E. A., Cotten, S. R., Berkowsky, R. W., & Anderson, W. A. (2013). The impact of activity interventions on the well-being of older adults in continuing care communities. *Journal of applied gerontology : the official journal of the Southern Gerontological Society*, 33(7), 888–911.
3. Barlow, A., Adekola, J., & Siddiqui, N. (2021). Current and Future Online and Blended Learning Provisions. *Journal of Perspectives in Applied Academic Practice*, 9(2), 39-53.
4. Li, W., Ornstein, K. A., Li, Y., & Liu, B. (2021). Barriers to learning a new technology to go online among older adults during the COVID-19 pandemic. *Journal of the American Geriatrics Society*, 69, 3051-3057.
5. Van Jaarsveld, G. M. (2021). The Effects of COVID-19 Among the Elderly Population: A Case for Closing the Digital Divide. *Front. Psychiatry*, 11, 1-7.
6. Ministry of Education, Taiwan. (2021). Learnig together during COVID-19--Active aging learning turnaround grandparents digital ramming. Retrieved from https://www.edu.tw/News_Content.aspx?n=9E7AC85F1954DDA8&s=D9FD422793157F21
7. Doetinchem, S., & Livingston, L. (2021). Lifelong Learning in the Age of COVID-19. Retrieved from <https://generations.asaging.org/lifelong-learning-age-covid-19>
8. I, J. C. (2021). The epidemic has pushed the use of technology and the Internet to become more widespread, but it is the beginning of a nightmare for the elderly. Retrieved from <https://www.thenewslens.com/article/143678>
9. Zapletal, A., Wells, T., Russell, E., & Skinner, M. W. On the triple exclusion of older adults during COVID-19: Technology, digital literacy and social isolation. *Social Sciences & Humanities Open*, 8(1), 100511.
10. Age UK. (2018). Digital Inclusion Evidence Review. London: Age UK.

11. National Development Council of Taiwan (2019). 2019 Survey Report on Digital Opportunities for Individual Households. Retrieved from <https://www.ndc.gov.tw/cp.aspx?n=55C8164714DFD9E9>
12. Age UK. (2021). Digital inclusion and older people – how have things changed in a Covid-19 world?. Retrieved from <https://reurl.cc/ve3jJL>
13. Chiu, C. J. & Liu, C. W. (2017). Understanding Older Adult's Technology Adoption and Withdrawal for Elderly Care and Education: Mixed Method Analysis from National Survey. *Journal of Medical Internet Research*, 19(11), e374, 1-11.
14. Wilson, G., Gates, J. R., Vijaykumar, S. & Morgan, D. (2021). Understanding older adults' use of social technology and the factors influencing use. *Ageing & Society*, 1–24.
15. Lai, H. J. (2015). A study of the principles of e-learning design and effectiveness for older adults. *Journal of Gerontechnology and Service Management*, 31, 105-108.
16. Chen, Z. Z. (2021). The active aging centers opened online courses for grandparents lose people not to lose the formation of more fun. Retrieved from <https://www.cna.com.tw/news/ahel/202109190039.aspxM>.
17. Yazdani-Darki, M., Rahemi, Z., Adib-Hajbaghery, M., & Izadi, F. (2020). Older adults' barriers to use technology in daily life: A qualitative study. *Nursing and Midwifery Studies*, 9, 229-236.
18. Chu, R. J., & Chu, A. Z. (2010). Multi-level analysis of peer support, Internet self-efficacy and e-learning outcomes – The contextual effects of collectivism and group potency. *Computers & Education*, 55, 145-154.
19. Lin, Y. C., Liang, J. C., Yang, C. J. & Tsai, C. C. (2013). Exploring middle-aged and older adults' sources of Internet self-efficacy: A case study. *Computers in Human Behavior*, 29, 2733-2743.
20. Shih, X. T. (2021). Pingtung County Active Aging Learning Demonstration Center emphasizes rituals and holds an online opening ceremony. Retrieved from <https://www.peopo.org/news/543389>