

Bridging the Digital Divide: Adapting the Montessori Method (MM) for Digital Literacy Education in Older Adults

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Introduction

Developed by Dr. Maria Montessori in the early 20th century, Montessori education is distinguished by its foundational teaching principles that emphasize the learner's autonomy, curiosity, and holistic development (Marshall, 2017). Several key principles are central to this pedagogical approach, including the student-centered approach, the prepared environment, the use of specialized Montessori materials, and the teacher's role as a guide rather than a traditional instructor (Mavric, 2020; Lillard, 2005). While originally designed for children, these principles are universal and could be applied beyond early childhood education. In recent years, Montessori methods have been adapted for diverse populations, including older adults (Hitzig & Sheppard, 2017). A hands-on, self-directed learning approach that nurtures intrinsic motivation can be particularly beneficial for older adults because it offers cognitive stimulation, fosters purpose, and promotes lifelong learning (Cossentino, 2009). As the global population ages and the search for effective adult education methods continues, Montessori's principles present a promising avenue for fostering meaningful engagement and learning in older adults (Sheppard, McFadden, & McFadden, 2015). The era of technology has presented numerous possibilities and obstacles. One such challenge is ensuring that older adults, who might not have grown up in the digital era, are not left behind. Digital literacy is crucial for this demographic, not just for staying connected but also for accessing essential services. However, teaching digital literacy to older adults requires a nuanced approach, considering the cognitive changes that come with aging.

Literature Review

Understanding the Cognitive Challenges

As individuals age, they experience cognitive changes that can affect their ability to process information. Jones and Bayen (1998) highlighted several cognitive aging principles, such as limited working memory, a degenerated sensory system, reduced cognitive processing speed, and disturbed inhibition. These principles have been further confirmed by various studies, including those by Klencklen et al. (2017), Liljas et al. (2020), Kerchner et al. (2012), and Hasher et al. (2008).

In my endeavor to overcome those cognitive barriers and teach digital literacy to older adults, I've chosen to incorporate Montessori scientifically backed instructional methods. This means:

- **MM Principle 1: "Use visual hints, cues or templates."**

Bimodal Presentation: By adding closed captions to instructional videos and using visual aids on PowerPoints, older learners can utilize both their visual and auditory channels. This dual mode of learning can help in better retention and understanding.

- **MM Principle 2: "Focus on what the person can do."**

Accessible Learning Materials: Recognizing the visual challenges that older adults might face, it's essential to provide materials that are easy to read and understand. Using larger font sizes and easily recognizable fonts like Roboto, Arial, or Helvetica can make a significant difference. Additionally, providing a physical copy of the materials ensures that even those with severe visual impairments can access the content.

- **MM Principle 3 & 4: "Demonstrate more. Talk less." AND "Go from simple to more complex."**

In-Person Assistance: The value of human interaction cannot be understated, especially for older adults. In-person assistants can provide real-time guidance, clarify doubts, and even help eliminate distractions, ensuring a smooth learning experience.

The Montessori methodology is recognized for its potential to enhance information literacy and foster lifelong learning, with a particular emphasis on integrating it with modern technology for adaptive and inclusive education (Boté, 2022). Owen et al. (2021) delve into the fusion of digital literacy within Montessori education, emphasizing critical thinking, problem-solving, and the practical application of digital skills in traditional Montessori activities. Powell (2016) further underscores the compatibility of the Montessori method with teaching digital literacy, advocating for the use of digital tools in tandem with hands-on learning, even for older adults, and promoting collaborative tools like Google Docs.

Research Question

Which Montessori instructional assistance is most appropriate when teaching digital literacy to older adults in different age groups?

My hypothesis leans towards the idea that groups with additional support, be it in-person assistance or printed materials, will have a better grasp of digital literacy than those without. To test this hypothesis, I'm inclined towards a mixed factorial design, as used by Brault et al. (2010). This design will help measure how older adults' digital literacy skills evolve over time post-training, with varying levels of support. Furthermore, I aim to compare the performance of different age groups within the older adult demographic, starting from the age of 40, as that's when cognitive aging begins (Lee et al., 2018).