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Editorial: Patterns of technology-enhanced digital literacy of older adults

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Editorial on the Research Topic
Patterns of technology-enhanced digital literacy of older adults

In today's digital landscape, digital literacy among older adults has become a crucial issue to ensure their inclusion and autonomy (Tirado-Morueta et al., 2021). As technology evolves, so too do the methods and tools designed to facilitate access to and use of digital platforms by this population (e.g., Sehrawat et al., 2017). In this regard, technology-enhanced digital literacy involves the development of digital skills through innovative strategies such as artificial intelligence, mobile education, and active methodologies tailored to their needs (Gutiérrez-Ángel et al., 2022).

The four studies included address various dimensions of this phenomenon, such as the impact of educational smartphone applications on the independence of older adults, the use of artificial intelligence for educational inclusion, the effect of active methodologies on the improvement of digital competencies, and the assessment of digital security skills that support technological autonomy in later life.

The study by Woo et al., on digital education and the impact of mobile applications, highlights the effectiveness of an educational smartphone app in improving the digital autonomy of older adults. Using an instructional design methodology based on the ADDIE model, an app tailored to the needs of older users was developed and evaluated using eye-tracking technology and observational studies. The results indicated that this technology not only enables learning without time and place constraints but also fosters greater interest and confidence in using mobile devices for daily activities such as booking transport.

This approach shows that effective digital literacy for older adults can be enhanced through technological applications that take into account their cognitive and sensory limitations. In other words, interactive tools that combine ease of use, immediate feedback, and adaptability significantly improve the adoption and use of technology among this age group.

The study by Valencia-Londoño et al. examines how artificial intelligence contributes to the educational inclusion of older adults with neuromuscular conditions. Through adaptive learning platforms, virtual reality simulations, and interactive apps with eye-tracking algorithms, substantial progress was observed in digital literacy, social connectivity, and educational participation among these users.

AI-driven tools generate educational patterns that allow for personalisation of learning content based on individual needs. This accessibility-focused approach demonstrates that technology is not merely an instrumental resource, but a catalyst for digital inclusion. Artificial intelligence, by facilitating interaction and removing physical barriers, redefines how older adults can access information and engage in digital learning environments.

The study by Rodríguez-Miranda et al., on digital security, validates a scale based on the DigComp framework to measure digital competencies related to safe browsing and device protection in older adults. The findings show that the digital divide is not only linked to access to technology but also to the lack of knowledge about digital security.

The use of technological tools for cybersecurity training is a key pattern in the digital literacy of this population. Educational strategies that emphasize the protection of data and devices not only reduce the risk of cyberattacks but also foster confidence in using digital platforms.

The study by Martínez-Alcalá et al. explores the effect of methodologies such as the flipped classroom and microlearning on the development of digital skills in older adults. The results revealed that participants showed significant improvement in their digital abilities and greater confidence in using technology.

This approach underlines that practice-based teaching methods and constant reinforcement are more effective for this population. The combination of dynamic strategies with short, accessible content promotes the acquisition of digital knowledge and active engagement in technological environments.

These four contributions provide input for an effective model of technology-enhanced digital literacy for older adults. As society moves toward more inclusive digitalization, it is vital to consolidate innovative strategies that not only facilitate technological access but also promote the digital autonomy of older adults.

Author contributions

RT-M: Conceptualization, Funding acquisition, Project administration, Supervision, Validation, Writing – original draft. AD-H: Conceptualization, Formal analysis, Funding acquisition, Project administration, Validation, Writing – review & editing. AI-M: Formal analysis, Project administration, Validation, Writing – review & editing. JG: Validation, Visualization, Writing – review & editing.

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Conflict of interest

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Generative AI statement

The author(s) declare that Gen AI was used in the creation of this manuscript. During the preparation of this work the author(s) used Microsoft Copilot in order to proof edit the manuscript. After using this tool/service, the author(s) reviewed and edited the content as needed and takes full responsibility for the content of the published article.

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