Transforming Adult Learning in the Digital Age: Exploring Environmental, Content, and Technological Changes

The widespread adoption of digital technology has brought about significant societal changes in recent decades. The impact of digitalization is felt in nearly every aspect of our lives, from the way we communicate and work to how we access information and entertainment. As a result, digitalization has also had a profound effect on adult education, with new opportunities but also challenges (Jütte & Wildemeersch, 2017). In this context, digitization is changing adult education in three ways: (1) through changing environmental conditions, (2) through digitization-induced changes in content and topics, and (3) through new opportunities of learning tools.

Changing environmental conditions

Digitalization has created a rapidly changing environment for adult education, both in terms of the content and delivery of education. The digitization of work creates a new quality of tasks and tools through the interaction of workers and machines in digitized environments. These changes have long been known to affect not only IT specialists in organizations, but will also permanently alter the requirement and job profiles of specialists in many areas of organizations (Petropoulos, 2018; Spöttl & Windelband, 2019). As technological developments advance, tasks and tools keep changing. Workers must constantly be prepared for new requirements, which means that the content of corresponding training courses must also evolve. Digitalization has also enabled lifelong learning by making it easier for adults to access education at any point in their lives. Online learning platforms and resources offer a range of courses and programs that allow adults to continue learning and developing new skills throughout their careers and beyond. After all, technological progress also requires an engagement with digitization to ensure social participation.

As part of this, digitization has made education more accessible to all, including adults who may have previously faced barriers in learning (Branig et al., 2022; Stammer & Buddeberg, 2021). Online learning platforms allow learners to access educational content from anywhere, at any time, as long as they have an Internet connection. A further benefit of this is that the content can be worked on at their own pace. Digitization has also made it possible to personalize the learning experience for individual learners (Li et al., 2022).

However, the changing environmental conditions resulting from digitization also pose challenges for adult education. Many adult learners may lack the digital skills required to effectively navigate online learning platforms and take advantage of digital learning resources (Chung & Elliott, 2015). In addition, digital learning can be isolating and may not provide the same level of motivation and engagement as traditional classroom learning (Kilis, 2013). The quality of digital learning materials and courses can vary greatly, and it can be difficult for

learners to evaluate the credibility and accuracy of online sources (Ossiannilsson & Landgren, 2011). It can be concluded from this that both adult learners (Eynon, 2021) and adult educators (Rohs et al., 2019) need new skills in the context of digitization.

Overall, the changing environment brought about by digitization has had a significant impact on adult education and presents both opportunities and challenges. As technology continues to evolve, it will be important for adult educators to stay up-to-date with the latest digital tools and strategies to effectively support adult learners in a rapidly changing world.

Digitization-induced changes in content and topics

Digitalization has had a significant impact on the content and topics of adult education by expanding the range of topics and skills that digitization can create and that can be taught online. Basic digital literacy skills, which include basic computer skills, internet navigation, and online communication, are essential for functioning in the digital age and are the foundation for more advanced digital skills. In a professional context, these may include competencies in coding, data analysis, digital marketing, and social media management (Petropoulos, 2018; Spöttl & Windelband, 2019). These skills have become increasingly important in today's workplace, and many online courses and programs now focus on teaching these skills (e.g. Mah et al., 2020). The increase in remote work and telecommuting, also as an effect of the Covid-19-pandemic, has led to increased demand for skills that enable individuals to work effectively in virtual environments, such as online collaboration, remote project management, and remote communication (Agrawal et al., 2020). In general, topics such as cybersecurity or artificial intelligence have also become more socially important, and teaching them to the population is part of adult education (Daugherty & Dark, 2021). Because knowledge about online safety, data privacy and protection against cyber threats is important to protect oneself and one's organizations from cyber-attacks and data breaches. These topics are highly relevant in today's world and are in high demand by learners who want to stay up-to-date with the latest technological developments.

Overall, digitalization has broadened the scope of adult education, enabling learners to acquire new skills and knowledge in areas that were previously inaccessible. This has led to a greater variety of topics and content in adult education, and has increased the relevance of education in today's rapidly changing digital landscape.

New opportunities of learning tools

Digitalization has brought about a wealth of new learning tools and technologies, which have significantly changed the way adult education is delivered and consumed (Nadrljanski et al., 2022). Digitization has made it possible to access educational content and courses via digital learning platforms. These platforms can offer courses and content in a variety of learning formats from short videos and podcasts to interactive courses and virtual reality experiences. Mobile learning apps are also available for mobile devices, allowing learners to access educational content on the go via their smartphone or tablet. Digital learning platforms and mobile learning apps can also enable social exchange and interaction, allowing learners to

interact with peers and experts in their field and learn from their experiences. In doing so, digital access also enables the use of gamification in learning, i.e., the use of game-like elements and mechanisms to engage learners and make learning more fun and interactive (Gul & Bilgin, 2021). Examples of gamification in learning include badges or points for individual learning progress, and high score lists. Digitization has enabled the development of adaptive learning technologies that use data analytics to provide learners with customized learning experiences based on their individual learning styles, needs, and preferences (Li et al., 2022). The common thread among these new opportunities for learning tools is that it can make adult learning more accessible, engaging, and effective. As technology continues to evolve, we are likely to see more innovative learning tools and technologies that further enhance the adult learning experience.

Call for papers

Following the ideas, topics, and state of research described above, we invite researchers to contribute to that special issue of the International Journal of Lifelong Education.

The full papers should be sent to the journal until **December 31st 2023** via the submission portal. During the submission process, please select that it is a special issue and then select the title "Transforming Adult Learning in the Digital Age: Exploring Environmental, Content, and Technological Change".

All the instructions for authors in the journal can be found here.

For questions please do not hesitate to contact us (Karin Rott: karin.Rott@edu.lmu.de or Bernhard Schmidt-Hertha: b.schmidt@edu.lmu.de).

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