

The Facilitation of Online Learning for Middle-aged Employees

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Abstract

In recent decades, online learning has dominated all industries, while middle-aged employees might find it challenging to switch offline to online work environments. The study explored (1) the characteristics of effective online learning programs for middle-aged people, and (2) the benefits of online learning related to the work-life capacities of middle-aged people. This study used qualitative phenomenology and data were collected using semi-structured interviews. The participants included twenty human resources (HR) or learning development managers, nine females and eleven males. All managers from national or multinational companies used online learning during the last three years. The study revealed that online learning for middle-aged has specific characteristics: focus on practical or strategic skills, combining online tools and offline activities, clear time-limit, including multigeneration, small numbers of participants, and applying a personal approach. The study also indicated that online learning for middle-aged needs to be integrated and combine more than one activity. Lastly, the study showed that the benefits of online learning for middle-aged people are the refreshment of knowledge, work-skill renewal, and growth mindset awareness. To conclude, a monitoring program should be implemented to ensure output quality and achieve the learning goals. The researchers suggested further research to explore learners' barriers and how they cope with online situations.

Keywords: *adult learning, employee, middle-aged, online learning*

1. Introduction

Throughout the years, employees' productivity in the workplace will start to decline as they age. With the continued presence of older people in the workforce, various generations must collaborate within the same physical work area. Hence, if senior

workers fail to participate in self-development, a significant number of young workers or fresh graduates might result in a skills gap, particularly in technology skills (Aisa et al., 2023). However, a lack of interest and information about the benefits improvement programs leads to low participation among seniors (Vancell, 2018).

Middle-aged need digital learning skills to help them adjust to technology and promote lifelong learning (Seaton et al., 2023). In response to the situation, changes in learning methods for middle-aged people are not only from the participants' side and the teacher or educator. Teachers should prepare some strategies such as using interactive tools and adjusting teaching content according to the characteristics of learners (Lee et al., 2024). Online learning could be one strategy for that. Empirically, the internet benefits older adults by strengthening their social networks (Hogeboom et al., 2010) and facilitating social engagement to enhance their subjective health (Liu et al., 2024).

After the COVID-19 pandemic, 61.7 percent of employers used video conferencing technologies, and 56.5 percent adopted other online learning resources (International Labour Organization, 2021). Middle-aged employees between the ages of 40 and 65 may find switching from an offline to an online work environment challenging. Generally, their barriers are divided into three: indirect (financial and health issues), direct (lack of learning opportunities), and motivational (self-values and beliefs) (Rodriguez et al., 2023).

Furthermore, they might struggle to keep up with the rapid pace of technological change (Sabri et al., 2022), take more time to adjust to online resources (Chaffin & Harlow, 2005), be disinterested in a new program, burn out with work, and use insufficient learning materials (Kara et al., 2019). These problems can lead to inefficiencies and communication issues within the organization (McCann, 2017; Venter, 2017). Problems such as lack of technology learning for older workers demonstrate age bias (Huber & Watson, 2014), though interventions like intergenerational mentoring show promise (Lytle et al., 2023).

To overcome these problems, adult learners and educators must transform how they teach and create a favorable online learning environment for the middle-aged. In response to that, this study aims to explore the characteristics of online learning for middle-aged people and the benefits related to their work-life capacities. Thus, the following research questions were explored; (1) What are the characteristics of online learning suitable to the needs of the middle-aged? (2) What are the benefits of online learning for middle-aged?

2. Literature review

Middle-aged is a period of life with specific classifications varying slightly among sources. Existing studies use different age limits, such as 45 to 64 years (Monsell & McLuskey, 2016), 40 to 65 years (Negi & Balda, 2019), or 40 to 55 years (Gondek et al., 2024). The lack of theoretical consensus over the designation and bounds of this life stage is largely attributable to the limited study conducted on the topic. However, in this study, researchers decided to define middle-aged as 40 to 64 years who have a concern in all aspects of employment or post-secondary education (Pullman & Andres, 2019), and redefining life goals as one of the major tasks (Bjorklund, 2015).

The need for learning in this age group is influenced by cognitive (Sheffler et al., 2022), motivational (Froehlich et al., 2022), and organizational factors related to the socio-technical approach (Ranasinghe et al., 2024). Understanding these elements is crucial for fostering an effective learning environment that leverages middle-aged potential. While these factors highlight the potential for learning among senior workers, it is also important to recognize that barriers such as age discrimination and lack of access to learning opportunities persist, hindering their engagement in continuous learning (Bingham, 2019).

For senior workers, learning occurs primarily through practical experience and colleague guidance. These two emphasized the dynamic nature of the workplace and how relationships among coworkers significantly influence the ongoing learning experiences of older employees (Fuller & Unwin, 2005). Regarding individualism, building and determining learning opportunities for middle-aged relies on the individual workers themselves (Knowles et al., 2015). Nevertheless, managers are positioned as significant people to create favorable working situations for middle-aged workers and promote active contribution cultures to neglect ageism (Findsen, 2015).

Online learning for middle-aged people is moving slower than for the younger generations. They are not born with digitalization but should adjust themselves to survive in the workplace. The middle-aged should learn digital tools or applications they have never known before. Nevertheless, the internet self-efficacy score of middle-aged is higher than that of older adults, which leads to perceived learning differentiation, persistence, and satisfaction (Chu, 2010). Former research mentions online learning barriers for adults in external challenges, including schedule conflict, limited time to study, and limited environment to study (Kara et al., 2019). The inflexibility of online learning schedules causes middle-aged adults to have difficulties balancing their education and work, family, and social life (Selwyn, 2011).

The online learning environment for middle-aged expands opportunities for collaboration, such as identifying and sharing content by the learner to meet their specific needs and continuous feedback. The workplace is an ideal learning environment for identifying knowledge and skill gaps as part of everyday experience and pursuing learning with colleagues and teachers to fill those gaps (Hase, 2009). The success of remote learning for middle-aged will largely be determined by how well technology, curricula, and teaching methods adapt to the new environment. As a result, companies should consider investing in digital infrastructure as a prerequisite for making remote working arrangements that are genuinely effective (OECD, 2021).

Although it has some challenges, the organization will benefit from successfully bringing online learning to the workplace environment. Effective online learning can facilitate employees' self-regulation and help them work more efficiently, based on flexibility and time-management (Fake & Dabbagh, 2020). From a personal point of view, using online methods can increase the self-motivation and creativity of learners. Learners can become more independent in choosing the learning style for productivity (Reif-Stice & Smith-Frigerio, 2021). Moreover, the online learning method enhanced learners' resilience during the pandemic. The unpredicted situation triggers learners to adapt and try to survive amidst all challenges (International Labour Organization, 2021; Reif-Stice & Smith-Frigerio, 2021).

3. Method

Considering purposes, the qualitative was chosen due to some characteristics, such as a role in discovering new insights or phenomena from participants' answers and the flexibility for the researcher to develop explanations of difficult-to-interpret findings (Schonfeld & Mazzola, 2013). Furthermore, social science researchers commonly use the qualitative method (Mohajan, 2018), offering in-depth, detailed information and integrating the human touch (Mwita, 2022).

Qualitative research corresponds to the study of the features of phenomena. It is suitable for addressing inquiries regarding the reasons behind observed phenomena, evaluating detailed interventions involving several components, and emphasizing the beneficial effects of interventions (Busetto et al., 2020). A phenomenological approach is used in this study to explore the experiences of human resources or learning development managers related to online learning practices in the organization. This approach describes the similarities or common meanings of the participants related to their experiences with the specific topic (Creswell, 2018).

3.1. Participants

The researcher used two participant recruitment approaches: formal or informal networks and snowballing (Hennink, 2020). Initially, the researcher would share the information of this study and contact participants from formal or informal networks based on the criteria, then ask for their consent. The researcher also explains the background, purpose of the study, and benefits to participants in this phase. Secondly, the researcher would employ the snowball sampling technique by utilizing the social networks of previous participants. If their colleagues are available, the following step in the initial approach would be executed.

In order to minimize the selection bias, specific criteria for participants were made, consisting of (1) all participants worked for organizations that applied online learning for employee development, and (2) having regular evaluations for their learning programs. As shown in Table 1, twenty managers were selected, including eleven males and nine females, with an average of 19.65 years of working experience. Participants in this study come from various backgrounds and companies as the second layer of the recruitment process.

Table 1: Participant demographic

Participant's ID	Age	Gender	Years of experience (recent company)	Industrial sector
P1	52	Male	14	Transportation
P2	52	Male	21	Bank
P3	48	Male	7	Manufacturing
P4	55	Male	30	Transportation
P5	57	Male	25	Manufacturing
P6	55	Female	25	Education
P7	58	Male	32	Engineering
P8	50	Female	24	Health and services
P9	54	Female	28	Manufacturing
P10	53	Male	27	Manufacturing
P11	42	Male	10	Engineering

P12	53	Female	24	Health and services
P13	44	Male	8	Bank
P14	45	Male	13	Technology
P15	46	Female	11	Technology
P16	56	Male	25	Education
P17	42	Female	14	Education
P18	50	Female	20	Bank
P19	50	Female	23	Education
P20	46	Female	12	Education

3.2. Procedures

Through semi-structured interviews, managers' thoughts on online learning for middle-aged people were explored. Semi-structured interviews are a common technique in qualitative research. This approach often involves a conversation between the researcher and the participant, facilitated by an adaptable interview technique and enhanced by additional questions, probes, and notes. The approach enables the researcher to gather raw information, investigate participants' ideas, emotions, and ideas on a certain subject, and dive deep into personal and occasionally sensitive topics (McIntosh & Morse, 2015).

Each interview lasted for 60 to 90 minutes and was conducted through online meeting tools. The considerations are a limited time of participants because they are active employees and have a nine-to-five working schedule. The recorded meeting is a must during the interview session, as written in the informed consent. Moreover, video call interview has advantages including (a) improved accessibility to people who are difficult to reach, such as older people, the infirm, and those residing in geographically isolated areas; (b) more time and labor efficiency, resulting in lower costs (McIntosh & Morse, 2015).

As a tool, the researcher created an interview guideline. Included in the outline were the following questions: What kind of learning to facilitate middle-aged needs in your organization? What are the characteristics of effective online learning for

middle-aged? What are the benefits of online learning for middle-aged in terms of work-life capacities?

3.3. Data analysis

The researchers used a structured phenomenological analysis method consisting of six stages to analyze the data (Creswell, 2018). (1) Describe the individual experience of the phenomenon in the full transcript. (2) Create a compilation of important statements. (3) Categorize the important statements into larger pieces of information. (4) Construct a representation of the participant's experiences with the phenomena in the research. (5) Develop a narrative describing the experience. (6) Construct a detailed description of the phenomenon. The example of data analysis is shown in Table 2.

Table 2: Example of data analysis

Transcript	Important statements	Categorization	Phenomena	Narrative
<i>"Yeah, not so long ago I followed regular online learning in my office with 25 employees. All of them are from different generations."</i> (P-3)	Twenty-five participants in an online learning	Technical characteristics of online learning (Action)	Small numbers of participants for each session of online learning	Learning with small numbers of participants tends to lead to more discussion activities and exploration of ideas. Also, for multi-generational learning, small numbers support knowledge transfer better than a hundred participants.
<i>"No more than 30 participants in a learning program. It is more effective for discussion than 50 or even 100 people."</i> (P-7)	Under thirty participants in an online learning			

4. Results

Interviewing twenty participants resulted in two main ideas based on the research purpose. First, the characteristics of online learning for middle-aged people have six topics the preparation (focusing on issues related to practical or strategic skills and using hybrid learning concepts), the action (involving more than one generation, working on small numbers of participants, and applying one-on-one approach), and the evaluation (having clear-time limit and structured monitoring process). Second, online learning has three benefits for middle-aged people including knowledge refreshment, work-skill improvement, and growth mindset awareness.

4.1 The characteristics of online learning for middle-aged

4.1.1 Focusing on core competency. Since middle-aged have more than ten years of working experience, learning topics should fulfill their needs and focus on managerial skills. All participants agreed that theory is also important but the human resource department should pay more attention to enhancing middle-aged practical or strategic skills.

P-1 “For middle-aged, it is important to focus more on strategic skills than theoretical.”

P-6 “Targeting theoretical only for above 50 years old, is not a good idea. Practical skill is their main concern.”

In this part, core competency refers to a set of soft skills that support middle-aged daily work, such as handling people and managing their work capacity. Three participants mentioned leadership, emotional management, and handling people as suitable topics for middle-aged people.

4.1.2 Applying hybrid learning. When the researcher asked participants about online learning in the future, sixteen participants disagreed with a single model only. Participants mentioned hybrid learning, where online and offline learning blended especially after the pandemic era. The flow would be theoretical or background ideas through self-paced learning using learning management systems

(LMS) or online meeting tools (Zoom or Google Meet), then continue offline learning as a practice and monitoring process.

P-11 “I prefer to use offline and online learning to create productivity in the workplace.”

P-12 “Hybrid learning is perfect and flexible to do.”

In this case, only four participants preferred offline learning over online learning. Besides the struggles of adjusting to technology, middle-aged people also find it more convenient to use the traditional way in the classroom with an exclusive interaction between the teacher and students.

4.1.3 Involving multi-generational activities. Half of the participants stated that online learning would be impactful if it included younger and older workers. Older workers will learn about technology and a growth mindset, while the younger ones can improve leadership skills and make decisions wisely. Interaction between these generations would bring a positive working environment and effective communication, which is in line with the organizations' purposes.

P-16 “Learning should include both younger and older workers to create a better relationship and habits of learning from each other.”

P-20 “Transfer of knowledge from different generations will accelerate the purpose of learning.”

However, learning with multi-generational could be more challenging. It should have clear goals and depend on the educator's competency to create activities that cover collaboration skills and fulfill the needs of each generation.

4.1.4 Working on small numbers of participants. While some research participants did not mention the exact number, five agreed that around twenty is ideal for online learning. Learning with a hundred participants is ineffective in terms of teaching style and engagement. In that case, online learning will only use one-way communication and thus limit the interaction with participants.

P-9 “The participants are better around twenty or less to make an effective discussion and powerful knowledge transfer.”

P-3 “The online learning here will be followed by no more than twenty-five employees from different backgrounds.”

Learning with small numbers of participants tends to have more discussion activities and explore ideas that impact work-skill capacities. Also, small numbers support knowledge transfer better than a hundred participants for multigenerational learning.

4.1.5 Adopting one-on-one approach. Nowadays, participants mentioned personal approaches are a must in the learning program. Mentoring or coaching will be very helpful in improving employees' skills through self-reflection and enhancing engagement between employees and the organization.

P-13 “One-on-one approach such as mentoring or coaching are the most effective way to shoot out to the target skill.”

P-14 “Equal personal approach can help the learning process go smoothly.”

However, a little note is given by participants; even personal approaches are important, but they should be put in the middle or end of the learning program, not in the beginning. Personal approaches will make learning more effective after employees have received the introduction or theoretical foundation about the specific skills.

4.1.6 Having a clear time limit and monitoring process. One of the challenges following online learning is maintaining focus and attention, especially when it is held for long hours. Participants mentioned that half-day learning is better than full-day learning because they can focus on the learning materials without being distracted by daily work activities. It could not happen in full-day learning when they should be multitaskers as a learning participant and worker at the same time.

P-9 “Online learning will be more effective if it is held for at least four hours, but no more than that.”

P-8 “There should be a significant pre-and post-test for each learning to measure its effectivity.”

Also, online learning should have a clear monitoring agenda from the beginning to the end. Participants described some monitoring methods, such as interactive quizzes, personal reflection, and group feedback.

4.2. The benefits of online learning for middle-aged work-life capacities

4.2.1 Knowledge refreshment. Twelve managers agreed on online learning benefits as a refreshment of knowledge, especially for senior workers. The most valuable topics for middle-aged people are technology and artificial intelligence (AI) in the workplace. In online learning, they will learn from the teacher and the younger workers through discussion or group work sessions.

P-4 “I put it as a knowledge refreshment by adding some new information.”

P-16 “One clear benefit is about knowledge, either as part of refreshment or learning something that I did not know before.”

Moreover, most participants mentioned knowledge refreshment is important for middle-aged people, particularly after the COVID-19 pandemic when a rapid transition happened. In this era, the middle-aged must be able to adjust themselves and have a basic knowledge of the world's changes.

4.2.2. Competency improvement. Another benefit of online learning is soft skills improvement related to daily work competencies. Commonly, people in the middle-aged stage are already in high positions, such as managers or heads of departments. While their junior comes from different generations, they need to learn about managerial skills, e.g., people management, emotional management, and leadership.

P-2 “It is our best chance to upskill our competency by learning many things through our device.”

P-15 “I feel an improvement in soft skills, such as emotional management and leadership.”

Further, participants explained that soft-skills improvement could be achieved when online learning is continued by offline learning to support behavioral change. Though it takes more time and is not an instant process, improving work skills for middle-aged is valuable for organizational sustainability.

4.2.3. Growth mindset awareness. Growth mindsets are one thing mentioned by managers as another benefit of online learning. Middle-aged people learned from younger workers and absorbed new information that they might not have known before. They would be more open to differentiation and solve problems appropriately

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P-18 “We learned from each other, and do not need to be shy because it is part of the life cycle.”

P-19 “Learning from others' experiences will help us to build new mindsets.”

Two participants specified the intergenerational learning model as one way to build a growth mindset in online learning. In this model, discussion and case studies between generations are the keys.

5. Discussion

Learning through technological changes, formal education, and training are issues in workplace sustainability, leading the organization to be aware of individual well-being (Lemmetty & Collin, 2020). Online learning is one effective way to enhance those skills in the organizational context (Kumar & Kumar, 2021; Scheuch et al., 2021). However, unlike young workers, online learning for middle-aged and older workers presents unique challenges, particularly in the context of rapidly evolving

technology and the need for digital skills (Taha et al., 2016; Wilson-Menzfeld et al., 2023).

Research highlights several key issues that hinder effective learning for these age groups, such as scheduling conflicts, limited time to study, and a restricted space to study (Kara et al., 2019). They have potentially biased experiences (Zhang & Zheng, 2013) by connecting new information to knowledge from the past (Falasca, 2011). Moreover, the rigidity of workplace learning schedules makes it difficult for middle-aged people to balance their employment, family, and social roles (Selwyn, 2011).

Some topics for job skills learning (e.g., technology learning, preparation for self-employment, health issues, or simple work) have existed in the workplace (Tabieh et al., 2024). Besides cognitively demanding topics, typical voluntary learning is proven to improve participation for senior workers (Ruhose et al., 2024). By not making learning mandatory, the organization has applied flexible human resource practices, which leads to decreased personal conflict and lower early retirement retention (Cui et al., 2024).

The characteristics of online learning for middle-aged

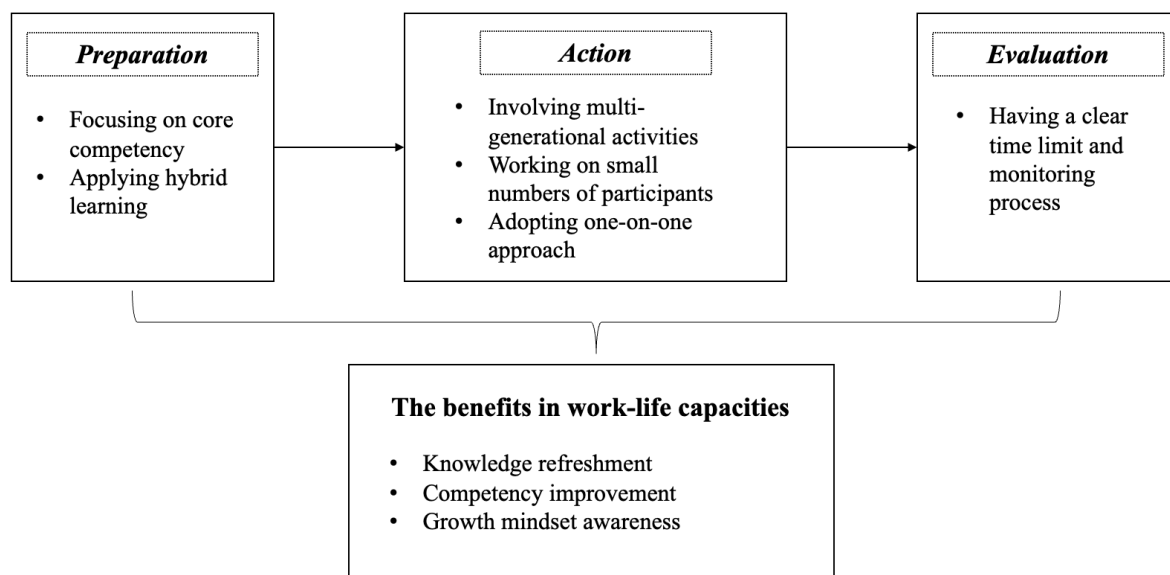


Figure 1: Characteristics and benefits of online learning for middle-aged

Nevertheless, another important concern is the strategies used by adult teachers to transition from physical to online teaching (Lee et al., 2024). They should listen, observe, construct, and debate a topic that encourages learner engagement and employs an open-ended inquiry (Falasca, 2011). Especially when adult teachers are dealing with middle-aged participants, from 45 to 65 years old, this age group tends to crystallize their knowledge and experiences as primary resources.

Figure 1 summarizes the results of this study, which divided online learning for middle-aged into three parts: preparation, action, and evaluation. In the learning process, an adult teacher could combine online and offline strategies, optimize online quizzes for evaluation, and adopt personal approaches such as coaching or mentoring (Nurani & Lee, 2024). Again, the key point of middle-aged learning is the teachers' flexibility and the programs' structure. Different strategies could be applied in the learning process, such as unscripted content, which is based on the participant's needs, and maximizing peer groups to facilitate mutual learning (Chiu et al., 2019).

A model of intergenerational learning, when more than one generation learns together at the same time, has gained more researchers' attention in decades as an opportunity to promote senior workers' capability in the organization (Fassi & Rickenbach, 2022; Gerpott et al., 2016) and reduce age discrimination (Gomes et al., 2024; Lagacé et al., 2019). The process includes a two-way direction for different generations to learn from and with each other to improve collaboration and quality of care (Franz & Scheunpflug, 2016). Intergenerational learning can be effectively implemented in the workplace through the use of peer coaching groups (PCGs) that facilitate knowledge exchange and lifelong learning (Brower et al., 2022).

In addition, personal approaches (e.g., mentoring or coaching) are significant for senior workers' participation in the workplace (Chen & Gardiner, 2019). However, mentoring or coaching systems as knowledge-sharing programs should be stimulated at the organizational level to support a positive and open climate (Brčić

& Mihelič, 2015). This support is essential for successful knowledge sharing and receiving between younger and older generations (Fasbender & Gerpott, 2022).

At the end of the program, clear monitoring and time limits should be provided to participants. In this case, the time limit refers to clear information about when the learning program will end and participants' obligations after learning. There is an urgent need for a systematic measurement tool to evaluate senior workers' learning process (Murphy, 2023). Moreover, the changes after learning can be seen in the long term rather than the short term. Human resources managers should pay attention to creating an effective monitoring program to keep the sustainability impact of learning.

To conclude, learning for older workers offers numerous benefits that enhance their productivity, job satisfaction, and overall well-being. As the workforce ages, fostering a lifelong learning culture becomes essential for both individuals and organizations. Knowledge refreshment and work-skill improvement enhance job performance and satisfaction (Ranasinghe et al., 2024). When combined with a comprehensive program, growth mindsets could open more learning opportunities and establish an inclusive ecosystem to foster a culture of continuous learning (Lim et al., 2024).

6. Conclusion

This study explores the characteristics and benefits of online learning tailored for middle-aged people. Given the unique barriers faced by this demographic, online learning for middle-aged participants is characterized by three primary phases: preparation, action, and evaluation. The preparation phase encompasses the selection of relevant topics focused on practical skill acquisition and the implementation of a hybrid learning approach that integrates both face-to-face and online modalities. In the subsequent action phase, engagement in multigenerational discussions and knowledge-sharing activities serves as a pivotal component. It is

recommended that the number of participants in each session be limited to a maximum of thirty, as this restriction facilitates a more personalized approach, including mentoring and coaching opportunities. In the evaluation phase, a clearly defined time frame and a transparent monitoring process are instituted to assess progress. By engaging in this online learning framework, middle-aged people can enhance their knowledge, competency improvement, and growth mindset awareness.

We note two limitations in this study. Initially, we aim to provide a diversified participant background. However, we do not examine the distinctions within each sector. Our objective was not to compare different company sectors but to explore the middle-aged process during the implementation of online learning by the organization. Secondly, our criteria emphasize the company's background rather than the individual's. The participants' educational background and the duration of their employment with the company are not considered, although these factors may affect their perspective.

The implications of this study extend beyond individual and organizational levels. At the personal level, adult educators can utilize the findings to design comprehensive online learning programs that are adaptable to various middle-aged people's needs, ensuring that each stage of the learning process is clearly defined and effectively implemented. Additionally, these educators can foster environments that encourage active participation and engagement from learners of all backgrounds.

At the organizational level, managers and employers can benefit by promoting a positive and inclusive workplace culture that supports collaboration among employees from different generational groups. This study also offers valuable insights into the development of a structured and efficient online learning system, guiding employers from the initial preparation phase to post-program evaluation. By applying these findings, organizations can enhance employee development,

ensure more effective online training programs, and promote continuous learning in a dynamic work environment.

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