❒   626

Perceptions of educational leaders about creating e-portfolios as part of a leadership upskilling program

Zeina Hojeij, Areej ElSayary
College of Interdisciplinary Studies, Zayed University, Dubai, United Arab Emirates

Article Info	ABSTRACT
	The effectiveness of e-portfolios in supporting educator professional development (PD) remains uncertain, particularly in demonstrating leadership skills through reflections and perceptions. This study investigates the utility of e-portfolios by examining the perspectives of educational leaders within a K-12 setting in the United Arab Emirates (UAE). The study involved 17 participants who completed an upskilling program, creating digital portfolios as part of their training. Additionally, 10 participants engaged in semi-structured interviews. The findings revealed three primary themes: genuine professional leadership growth, continuous PD, and an enhanced understanding of the student learning experience. The creation of e-portfolios not only fostered authentic PD but also served as a catalyst for ongoing growth, self-discovery, and continuous learning. This research concludes that e-portfolios are valuable tools for PD, promoting reflective practice and lifelong learning among educational leaders.

Corresponding Author:

Zeina Hojeij
College of Interdisciplinary Studies, Zayed University
Dubai, United Arab Emirates
Email: Zeina.Hojeij@zu.ac.ae

1. INTRODUCTION

At the beginning of the 1980s, with the development of many software systems to manage paper-based documents, portfolios, which stand for a collection of completed works, began to include database services as internet technology advanced. E-portfolios have since evolved into dynamic and digital archives or online portfolios [1]. These digital tools can be considered an integral digital repository for academic work where scholars can reflect, get involved, and play an active role [2]. In general, e-portfolios serve as digital dossiers where students collect data on various learning materials to review their educational experiences [3]. The popularity of e-portfolios correlated with the growing popularity of alternative assessments that prioritized assessing students' higher-order thinking abilities. Hence, there are three reasons for using e-portfolios: i) pedagogical innovations are a top priority for reform; ii) it appears that using digital media to give lessons is a tendency that will not go away in the technology era [4]; and iii) it became a significant assessment tool for learning, and students were pushed to regulate their learning with e-evaluation feedback [5]. Eventually, students learn to know, do, live with others, and be after going through the successful creation and experience of e-portfolios [6].

Since the beginning of the 1990s, e-portfolios have been implemented in educational settings [7]. More recently, "sharing" has been the main objective for e-portfolios. To keep up with the rapid growth of internet technology, open source, hyperlinks, Web 2.0 tools, and metadata are crucial [1]. These technologies and tools have developed much more quickly than web-based apps. Researchers have extended the four concepts of multimedia to modern platforms, including Web 2.0 technologies and hyperlinks [1].

Furthermore, the use of e-learning and e-portfolios to promote students' collaborative and constructivist learning practices is a recently embraced growing technology [8]–[10], and Ellis [8] argues that e-portfolios can open up novel possibilities and potential for conceptualizing, enabling, arranging, maintaining, and insuring an evolving learning environment.

Furthermore, they have become a progressively renowned strategy in higher education establishments to encourage students' reflection on their educational experience and to serve as an essential means of assessment of students' learning [8], [10]. Therefore, due to their potential to foster pupils' progress, constructivism, and critical reflections on education, e-portfolios have become a crucial component of the e-learning process and a perfect tool for academic and professional growth [2]. Other significant values of e-portfolios include improved scholarly interaction, exchanging thoughts, working together, flexibility, critical reflection on one's work, recognizing strengths, and tracking progress [2]. Finally, e-portfolios can help bring quality learning through the development of inquiry with a purpose, mindful reflection, and integration of different learning from different contexts [11].

The goal of e-portfolios is to enhance the learners' development of their identities as learners and as people; they also encourage them to become active creators, influencers of learning, and informed contributors to the creation of their local and global environments. Hence, educators advance learning, which is carved into someone's identity and serves them for a lifetime [12]. E-portfolios may act as curriculum vitae for educators and leaders in which recommendations, personally selected evidence, and documentation of achievements, like those found in a certification portfolio, are showcased [13]. Smith [14] argues that e-portfolios are not just for students; they can help, especially educators and leaders, in self-reflection to document and create a comprehensive picture of their growth and professional development (PD) by reflecting on what went right and how. Another benefit is the impact of e-portfolios since educational leaders can share their long-term achievements and capabilities and become visible to employers, accrediting bodies, and funding sources.

In a recent study, Ciesielkiewicz [15] emphasized that e-portfolios are not just a learning tool for students but also a lifelong learning tool for professional advancement and self-evaluation. Both faculty and students can profit from this learning practice by creating and sharing their e-portfolios because it fosters self-assessment, reflection, gradual development, and assurance of learning and improvement over time [16]. Thus, e-portfolios can serve as a means to develop the professional skills and competencies of educational institutions' administrative and pedagogical staff by using electronic platforms and enhancing their learning opportunities [17]. Furthermore, smart lifelong learning is expected to help the learner explore, identify, and employ structural and nonstructural learning activities. It is also likely to offer learning paths based on the learners' learning goals, objectives, and the intended results of the corresponding learning activities available to the students; thus, e-portfolios are essential [18]. Additionally, the work of Kwok and Hui [19] highlighted the role of an e-portfolio model serving both personal development and lifelong learning that focuses on training content with clear learning objectives, competence-based definitions, and a personalized training portfolio so that professionals can achieve their continuing PD and training requirements.

The concept of reflection has its foundations in the work conducted by Dewey [20], who framed reflective practice as an active, thoughtful, and disciplined process of collaborative meaning-making that calls for attitudes that value intellectual and personal development. In that light, Lackner and Martini [21] demonstrated that reflections in e-portfolios can improve students' abilities to deal with behavioral interview questions. For instance, e-portfolios have recently evolved from a repository to save reflections and work to an authentic learning and development tool [22]. Additionally, technological built-in scaffolds on the available platforms facilitate the composition of solid reflections; however, in the digital context, students must have a sense of trust and confidentiality shared with their teacher to ensure that their reflections and work are shared with their permission and knowledge [13]. According to Sultana et al. [23], students' reflective thinking will likely improve when using e-portfolios as an assessment tool since it helps them review and reflect on their learning. Moreover, the students who were able to develop a high level of reflective thinking may be more likely to be able to regulate their teaching and have lifelong learning [23]; thus, self-regulation and both reflective and critical thinking practices are all impacts of e-portfolios [24]–[26].

An e-portfolio gives lifelong learning authenticity. Personal meanings are created when gathering evidence from real-life performances and reflecting on them. The e-portfolio is the book in which these experiences are documented, and the reflective process offers tales about them [14]. Additionally, according to Nwogu et al. [27], e-portfolios can be a valuable tool for documenting the entire educational experience and showcasing the individual's achievements. This is applicable because the person gets to focus on meeting their personal needs and achieving their goals since the need to outperform others is not present [28], [29]. The benefits of e-portfolios mainly come in threefold for PD and career advancement. The first advantage is self-assessment to determine personal weaknesses and strengths. The second advantage is the collection of evidence within the workplace. The third advantage is showcasing their competencies. Thus, e-portfolios are a valuable asset to professionals in maintaining their development and employability [30].

This research aims to explore facets of school leaders' intrinsic motivation related to their experiences with the e-portfolio during an upskilling program. Several research questions were identified as:
- What are educational leaders' perspectives on the value of e-portfolios as part of a PD training program?
- How do educational leaders recognize competence as interrelated to e-portfolio development?

Answers to these questions can contribute to understanding how educational leaders recognize their e-portfolios and how upskilling training can encourage academic leaders to promote their learning and professional growth through this medium.

Self-determination theory (SDT) and communities of practice (CoP) theory can both be relevant in understanding the perceptions of educational leaders about the value of using e-portfolios during a leadership upskilling program. SDT, developed by Deci and Ryan [31], emphasizes the importance of intrinsic motivation, autonomy, and competence in driving human behavior. When applied to educational leaders' perceptions of e-portfolios, SDT can shed light on how leaders perceive e-portfolios as facilitating their autonomy and competence in developing their leadership skills. Leaders who feel a sense of autonomy in using e-portfolios may perceive them as valuable tools that allow them to take ownership of their PD. Additionally, if educational leaders believe that using e-portfolios enhances their competence and effectiveness as leaders, they are more likely to value their use in the upskilling program.

CoP theory, proposed by Wenger [32], focuses on the social aspects of learning and knowledge sharing within a community. In the context of educational leaders' perceptions of e-portfolios, CoP theory can help explore how leaders perceive the value of e-portfolios in fostering collaborative learning and knowledge exchange. Suppose educational leaders perceive that e-portfolios facilitate engagement within a community of practice, where they can share their experiences and best practices and receive feedback from peers. In that case, they are more likely to see the value of using e-portfolios as part of their PD. CoP theory also emphasizes collective learning within a community, and educational leaders may perceive e-portfolios as valuable tools for collective reflection, knowledge construction, and ongoing improvement in their leadership skills. By considering the principles of SDT and CoP theory, researchers can examine how educational leaders' perceptions of e-portfolios align with their need for autonomy, competence, and relatedness within a social learning context. These theories provide a framework to understand the motivational factors and social interactions that shape leaders' perceptions of the value of e-portfolios in a PD leadership upskilling program.

2.   METHOD
2.1. Context
The current study was conducted at the end of a 10-week leadership upskilling program offered by a federal university at a private school with 10 branches across the United Arab Emirates (UAE). The program consisted of 10 weeks (25 hours) of face-to-face and online discussions focusing on practical leadership practices and concepts, with weekly reflections on the previous week's topics. The program provided the K-12 school leaders with real-life leadership scenarios and authentic situations to discuss, enabling them to apply the training content to practical situations. The sessions also allowed the participants to share their experiences and personal perspectives on what they learned with colleagues from different school branches, facilitating the comparison of their skills and practices. In addition, the participants were required to develop leadership e-portfolios, which served as evidence of upskilling training completion and were used to evaluate the program. The e-portfolios comprised tasks that encouraged the participants to reflect on their leadership skills and practices, such as writing weekly reflections, making leadership plans and presentations, and engaging in self-evaluations.

2.2. Research design
In light of budgetary limitations, the schools in context had been unable to offer PD training to their educational leadership team. Consequently, the leadership upskilling program was introduced in the study. Given the distinctive nature of this program and the study's intended purpose, a qualitative methodology was chosen with an exploratory research design to capture the essence of participants' experiences, as expressed by them [33]. The researcher utilized a case study research approach to engage with a limited number of subjects (n=17), allowing for a detailed exploration of the topic and the collection of participants' perspectives on the phenomenon under examination [34].

2.3. Participants
The current study involved a purposive sample of K-12 school leaders from the UAE, totaling 17 participants who held various leadership positions across six different branches of their schools. All participants met the criteria for the study, which required attendance at all 10 training sessions and submission of an overall reflection and an e-portfolio at the end of the upskilling program. The participants

volunteered for the study and satisfied the conditions for a purposive sample, which meant they were selected because they were the most suitable sources of information to address the research questions and achieve the study's objectives [35], [36].

The participants were 71% female and 29% male. They were from various Middle Eastern countries, including Jordan, Egypt, Palestine, Syria, and Lebanon. Their ages ranged from 30 to 60+ years old, with the majority (41%) being between 50 and 59 years old. Their years of experience ranged from 6 to 20+ years, with the majority (59%) having over 20 years of experience. Their professional roles were assistant principal (12%), principal (41%), vice principal (29%), subject coordinator (12%), and level supervisor (6%). Finally, their educational qualifications were bachelor's degree (82%), master's degree (6%), and Ph.D. (12%).

2.4. Sample size determination

The sample size for this study was determined using purposive sampling, a common technique in qualitative research aimed at selecting information-rich cases [33]. Specifically, the study involved 17 K-12 school leaders in a leadership upskilling program. This sample was chosen to ensure a diverse range of perspectives and experiences related to creating and using e-portfolios in PD. The adequacy of the sample size was guided by the concept of saturation, where data collection continues until no new themes or insights emerge [34]. Given the detailed and in-depth data obtained from the participants' e-portfolios and interviews, the sample size was deemed sufficient to achieve data saturation. This approach aligns with recommendations in qualitative research methodologies, emphasizing the quality and depth of data over sheer numbers [35].

In summary, the sample size of 17 participants was adequate for the study's qualitative design, allowing for a thorough exploration of the research questions while ensuring diverse and rich data. This sample of participants was well-suited to the study because they represented a range of leadership positions, experiences, and educational backgrounds. This diversity of experiences allowed the researchers to gain a more comprehensive understanding of the value of using e-portfolios for PD.

2.5. Data collection

To develop a comprehensive understanding of the phenomenon and to provide a detailed description of the larger picture, the researcher utilized two primary methods of data collection: e-portfolio reflections and semi-structured interviews [34]. The first source of data collection involved individual e-portfolios and written reflections completed by the participants. A total of 17 reflections were submitted to extract data regarding the participants' upskilling experience. Each participant wrote one reflection after the upskilling program, reflecting on their overall experience, specifically on the experience of creating e-portfolios as part of the training, and a summary of what worked well and what needed improvement during the training. These reflections provided a detailed description of the participants' experiences. They offered a detailed account of what they learned from the discussions with their facilitator and each other and their expertise with e-portfolios.

In addition, the researcher conducted one-on-one semi-structured interviews with 10 volunteers to gather their perspectives on the upskilling program and the use of e-portfolios as evidence of learning. The researcher developed the interview questions based on the existing literature on e-portfolios in education. Each interview session lasted between 30 to 45 minutes. Before the commencement of the interviews, the study's purpose and a detailed explanation of how the data would be used were communicated to the participants, and verbal consent was obtained to record the interview digitally. The interviews were conducted via Zoom, and the recordings were saved on a password-protected iCloud account owned by the researcher. To protect the confidentiality of the participants, pseudonyms (1 to 10) were assigned to each individual. Participants were also informed that their involvement in the study was voluntary and could terminate their participation at any time.

2.6. Data analysis

The researcher reviewed and integrated data from two sources, e-portfolio reflections, and interview transcriptions, to gain a comprehensive understanding of the information and its overall significance. A bottom-up approach using inductive content analysis was employed to identify patterns and categories, which formed the basis of the study's findings [34]. The researcher moved from the specific to the general, combining and organizing the data into more prominent themes. The researcher manually analyzed the data and iteratively refined the themes until a comprehensive set was established. Data was collected to ensure data trustworthiness and accuracy, and evidence was examined from multiple sources, which was then used to validate the identified themes [34].

The data from both sources underwent content analysis, Cohen *et al*. [35] recommended for examining qualitative textual data. The researcher carefully reviewed the data, segmented it, established codes, and extracted themes. Each theme was extensively discussed. All identifiable information was removed to ensure participant privacy and any traceable participant details were anonymized and coded.

3.   RESULTS

This section introduces the analysis results, categorized into three primary themes that surfaced during the data examination from the e-portfolio reflections and the semi-structured interviews. The themes are genuine professional leadership growth, drivers for continuous PD, and a gained understanding of the student learning experience. The themes are elaborated and participants' voices are quoted to illustrate their perceptions. In turn, each of the main themes led to subthemes, as shown in Table 1.

Table 1. Themes and sub-themes extrapolated from the study

Themes	Subthemes
Genuine professional leadership growth	Reflective practice
	Collaboration and feedback
	Integration of technology skills
Drivers for continuous PD	Continual reflection and growth
	Lifelong learning
Gained understanding of the student learning experience	Empathy for students
	Growth mindset

3.1. Theme one: genuine professional leadership growth

The data from the participants indicated that the creation of the e-portfolios facilitated genuine professional leadership growth among the educator participants of the upskilling program. This was shown in both the reflections and the interviews.

3.1.1. Reflective practice

Educational leaders engaged in self-reflection while creating e-portfolios, leading to a deeper understanding of their leadership practices. They reflected on the topics of the training sessions, on their practices, and the discussions with colleagues in the program. Some responses from the reflections and the interviews are:

"When I did the portfolio, I had to look at my leadership. It made me understand my leadership practices. I reflected on the training topics and how I could connect my theoretical knowledge with my actual leadership application of the strategies through our discussions. This allowed me to refine my skills and approach to my job as an educational leader." (P1 Reflection)

"Reflection was a big part of the portfolios. I think it was the most beneficial exercise we did. By reflecting on myself, I could identify leadership areas where I excelled and others where I needed improvement. Also, reflecting on our discussions with other colleagues during the training helped me gain a different perspective on leadership practices. These talks challenged my beliefs and conventions regarding how we should be educational leaders; they allowed me to adopt innovative ideas to enhance my approach." (P6 Interview)

"Reflecting on the topics covered in the training sessions helped me. The process of self-reflection while building my e-portfolio allowed me to integrate theory and practice. I could reflect on the concepts discussed in the training sessions and apply them to my leadership experiences. It helped me develop a more intentional and purposeful approach to my role as an educational leader. I enjoyed the opportunity to critically analyze my leadership practices because it led me to identify gaps in my knowledge and skills. It was a transformative experience that has positively impacted my leadership abilities." (P7 Interview)

In addition, creating digital portfolios encouraged educational leaders to document their professional journey and track their development throughout the upskilling program. Moreover, selecting and organizing artifacts prompted the participants to critically analyze their strengths and areas for growth regarding their leadership practices. Some of their responses are:

"The process of creating the e-portfolio provided me with a concrete representation of my development as an educational leader. As I completed my portfolio entries and reflected on the various topics and activities, I better understood my strengths and weaknesses. It also reminded me of my progress and motivated me to continue striving for excellence. The e-portfolio is a powerful tool for documenting my professional journey throughout the upskilling program. It allowed me to track my growth and I could see the difference at the end of the ten weeks." (P12 Reflection)

"*Completing the e-portfolio enabled an in-depth self-assessment of my leadership practices. I encouraged me to evaluate my skills and competencies. I had to really reflect and take an honest look at myself. This enabled me to identify what I was missing and what I needed to do to become better and improved my skills. Through the portfolio, I reflected on the challenges, and I set goals of continuous development.*" (P4 Reflection)

"*I thought the e-portfolio was an empowering process. It allowed me to take ownership of my professional growth. I engaged in deep self-reflection. I honestly looked at my strength areas and found where I could enhance my leadership skills and practices. The process gave me clarity and direction in my professional journey.*" (P9 Interview)

3.1.2. Collaboration and feedback

Educational leaders shared their digital portfolios with colleagues, promoting collaboration and exchanging ideas. This process led to insightful discussions of leadership skills and practices. As participant indicated:

"*Sharing my e-portfolio with colleagues sparked some very interesting conversations about how we do our jobs and how we run our schools. We collaborated also when doing our portfolios, we helped each other work. This was a great way to solve problems some of us were facing. The collaborations enhanced my own perspective and inspired me to further refine my leadership practices.*" (P9 Reflection)

Some additional responses from the reflections and the interviews echoed the same thoughts.

"*We engaged in constructive conversations, providing feedback and suggestions to one another. This collaborative environment allowed us to tap into the collective wisdom of our peers and discover new approaches to enhance our leadership effectiveness.*" (P10 Reflection)

Moreover, in the interview, participant 1 stated:

"*There was a sense of support among us. Sharing the e-portfolios created a platform for us to celebrate each other's achievements, share best practices, and offer valuable feedback. It provided a unique opportunity for peer learning and growth. We had the chance to observe different leadership styles, strategies, and perspectives.*" (P1 Interview)

Feedback from peers and training facilitators during the portfolio creation process enhanced professional growth. Engaging in discussions and receiving input on e-portfolios helped participants refine their leadership strategies and explore new approaches. In the interview, participant 2 indicated:

"*Feedback I received from peers and facilitators while working on my portfolio was instrumental in my professional growth. Engaging in discussions and receiving feedback allowed me to gain fresh perspectives and consider new approaches to my leadership strategies.*" (P2 Interview)

Additional reflection responses are highlighted to provide further insight related to participants' feedback:

"*The feedback I received during the portfolio process played a crucial role in my professional development. Engaging in conversations and discussing input I got from colleagues and the trainers challenged me to think deeply about my leadership approaches. It empowered me to refine my strategies and embrace new ideas. I feel this led to major growth and development as a leader, especially that my experience is not as long as some others.*" (P6 Reflection)

"*Getting feedback and talking about the e-portfolio process allowed me to evolve and expand my skills as an educational leader.*" (P13 Reflection)

3.1.3. Integration of technology skills

The creation of e-portfolios necessitated the acquisition and utilization of various technology skills. Participants developed proficiency in digital tools and platforms while designing and creating e-portfolios. Participants 16 and 3 reflected:

"Through the process, I acquired proficiency in utilizing various digital tools and platforms. It empowered me to showcase my leadership journey in a dynamic and visually appealing way, amplifying the impact of my portfolio." (P16)

"Designing and creating e-portfolios pushed me to expand my technological capabilities. I had the opportunity to explore and utilize different digital tools and platforms to present my leadership experiences effectively." (P3)

Moreover, participant 5 in the interview explained:

"The integration of technology skills in creating e-portfolios was a transformative experience. As educational leaders, we immersed ourselves in digital tools and platforms to curate and present our professional growth journey. This process empowered us to become proficient in leveraging technology for authentic and impactful documentation of our leadership practices." (P5)

Acquiring these technology skills enhanced participants' professional leadership capabilities and prepared them to integrate technology into their leadership practices effectively. The responses provide further insight related to participants' feedback:

"The integration of technology skills equipped me with the ability to navigate the digital landscape and leverage technology to enhance efficiency, collaboration, and innovation. Acquiring these skills has broadened my leadership toolkit and prepared me to effectively lead in a technology-driven educational landscape." (P7 Reflection)

"Learning new technology skills had a profound impact on my professional leadership capabilities. It has allowed me to embrace digital tools and platforms to streamline administrative tasks, facilitate communication, and enhance instructional practices. This integration of technology has empowered me to be a more effective and efficient leader in today's digitally connected world." (P11 Reflection)

3.2. Theme two: drivers for continuous professional development
The e-portfolios served as drivers for continuous professional growth among the educational leaders in the upskilling program.

3.2.1. Continual reflection and growth
Digital portfolios encouraged participants to engage in ongoing reflection on their leadership practices. Therefore, the portfolio became a dynamic tool that evolved as participants continuously documented and assessed their achievements, challenges, and learning experiences. The e-portfolios provided a platform for participants to set and track their professional goals. They established objectives related to leadership approaches, student engagement, or personal development. Also, regularly reviewing and updating the portfolio facilitated progress monitoring and motivated the educational leaders to pursue their goals actively. Data from the interviews supported the findings:

"Working on the e-portfolio and making sure it was updated weekly led to continuous reflection on my part. I thought about my leadership practices every week and with every entry. The e-portfolio became a living document that grew and evolved as the training continued. Working on my e-portfolio weekly allowed me to stay focused on my goals as I assessed my achievements, challenges, and leadership practices." (P10 Interview)

"The e-portfolios created a group culture of continuous reflection and growth among everyone in the group. We documented our successes, ideas, skills and we shared the experience of our growth together. By regularly setting new goals and working weekly to reach them, I was able to adapt my leadership practices as I progressed in the training. I felt that the e-portfolio developed and grew with me as I progressed in my leadership training." (P2 Interview)

3.2.2. Lifelong learning
Creating and maintaining digital portfolios encouraged participants to embrace lifelong learning. They actively sought out new resources, research, and best practices to enhance their leadership skills and practices. The portfolio served as a record of participants' willingness to adapt, experiment, and grow professionally over the duration of the upskilling program.

"Working on the e-portfolio fostered a mindset of lifelong learning. It motivated me to continually seek out new resources, research, and best practices to enhance my leadership skills and practices. The portfolio became an indication of my commitment to growth and my willingness to adapt and experiment as an educational leader." (P5 Interview)

"This was the first time I create an e-portfolio. Actually, this was the first time I take part in a PD which required me to work on something as proof of my learning. The e-portfolio was a new experience for me, and it encouraged me to go beyond the content of the training sessions and explore new ideas, strategies and research in educational leadership. I felt that I wanted to know more about the topics we were discussing, and this was a very satisfying feeling." (P14 Reflection)

3.3. Theme three: gained understanding of the student learning experience

Through the creation of digital portfolios and the acquisition of new technology skills, participants gained a renewed understanding of the student learning experience.

3.3.1. Empathy for students

The process of acquiring new technology skills for portfolio creation allowed participants to empathize with students' learning journeys as they gained firsthand experience of the challenges and frustrations that learners encounter when acquiring new skills.

"To be honest, the e-portfolio was completely new to me. While working on it, I faced many challenges, and I was frustrated a lot. Having to learn new skills made me feel for the students. I related to them and how hard it is to learn new things. It has been a long time since I felt like a student, the training gave me firsthand experience of the difficulties students may encounter when learning new concepts." (P2 Reflection)

"I faced many challenges while acquiring the skills I needed to complete the portfolio. I hadn't worked on something like this before. The stress I felt while trying to complete the e-portfolio allowed me to empathize with students and their learning journeys." (P15 Reflection)

"Having to learn new technology skills to do my e-portfolio was a humbling experience. It allowed me to relate to students and their learning experiences. Through this practice, I experienced the frustrations, confusion, and sense of accomplishment that students may encounter when learning new technologies." (P8 Interview)

3.3.2. Growth mindset

Learning new technology skills prompted participants to reflect on their leadership skills and practices. The experience of being a learner again enhanced their ability to empathize with students and understand the challenges they face firsthand. It allowed them to gain a deeper appreciation for the learning process. They reconsidered instructional strategies and explored innovative ways to engage students in their schools through technology integration. Creating e-portfolios cultivated a growth mindset in the educational leaders in the study. They embraced the opportunity to learn and develop new technology skills. They also demonstrated resilience, perseverance, and a willingness to overcome challenges during the portfolio creation process.

"I embraced the opportunity to learn and develop new technology skills, even if it meant stepping out of my comfort zone. Throughout the e-portfolio process, I demonstrated resilience, perseverance, and a determination to overcome challenges. The experience reinforced the importance of a growth mindset in my leadership journey." (P14 Reflection)

"The e-portfolio was the hardest part of the training. In the process, I developed as an educational leader. I was so open to the new challenge, and I was eager to do a good job. I learned and improved my technology skills. The experience required motivation and determination, which I had and that is how I pushed through the obstacles. I felt myself open to new challenges and new experiences." (P7 Interview)

"At first, I was hesitant, but with the support of my colleagues and trainer, I dove into the e-portfolio with flexibility and motivation. I was determined to do a good job. I had many problems and faced many obstacles, but I stayed committed to growing, learning and improving. The experience strengthened my belief that anyone can grow and change personally and professionally." (P1 Interview)

4. DISCUSSION

This study aimed to explore the perceptions of K-12 educational leaders regarding integrating e-portfolios in a leadership upskilling program. The findings suggest that participation in this program, which included creating e-portfolios, significantly influenced the leaders' attitudes toward learning, technology, and professional growth. The experience fostered a renewed curiosity, openness to new ideas, and a more profound commitment to lifelong learning. This section delves into two key areas: the perceived value of e-portfolios and educational leaders' self-assessment of their competency in completing them.

4.1. Perspectives on the value of e-portfolios

Addressing the first research question, the study highlights several benefits. E-portfolios were recognized as valuable tools for self-reflection, PD, and fostering lifelong learning. This aligns with Hilzensauer and Buchberger [37], who emphasized that e-portfolios require deep self-reflection. E-portfolios encouraged leaders to assess their achievements and weaknesses, providing a structured way to document their personal and professional growth [38]. Participants noted that the reflective processes inherent in e-portfolio creation were instrumental in allowing them to evaluate their leadership skills and practices critically. This reflective practice helped them connect theory with practice and led to a greater understanding of their roles as leaders. They appreciated the opportunity to document their professional journey, which was seen as a testament to their growth and a tool for lifelong learning. The process also facilitated collaboration and the exchange of ideas among peers, which was seen as a significant contributor to their professional growth, echoing the findings of Song regarding the enhancement of autonomous learning through e-portfolios [39].

4.2. Perceptions of educational leaders of their competence in completing the e-portfolios

In exploring the second research question, the study uncovered some challenges. Many participants, mainly those less familiar with digital tools, found creating e-portfolios daunting and stressful. This is consistent with the study by Lin [40], who found that the technical demands of e-portfolio development can be challenging for users. However, despite these challenges, participants reported a strong sense of accomplishment and empowerment upon completing their e-portfolios, indicating an overall positive impact on their leadership competencies. The collaborative nature of the e-portfolio process, including peer feedback and shared learning experiences, was particularly beneficial. This collaborative approach enhanced their technical skills and prepared them to integrate these skills into their leadership practices more effectively. Johnson et al. [41] similarly noted the empowering effects of mastering new technological skills. The study's findings suggest that most participants, predominantly between 50 and 59, may have needed more extensive prior experience with the technologies in creating e-portfolios. This demographic factor, along with the small sample size, highlights the need for further research to understand the baseline technological competencies of educational leaders before and after participating in such programs.

4.3. Implications of findings

Using e-portfolios as a PD tool for educational leaders shows promise in promoting reflective practice and continuous professional growth. The positive feedback from participants suggests that e-portfolios could be effectively integrated into broader leadership training programs. They offer a structured way for leaders to document their development, assess their skills, and receive feedback, which can be crucial for career advancement and self-improvement.

4.4. Future directions

Future research should investigate the long-term impacts of e-portfolios on PD and leadership effectiveness. Exploring the influence of different e-portfolio formats and content types on learning outcomes would be beneficial. Additionally, expanding the participant pool to include a more diverse range of educational contexts and cultural backgrounds could provide more comprehensive insights into the benefits and challenges of e-portfolios.

5. CONCLUSION

The present study suggests that educational leaders perceive e-portfolios as part of a PD program as valuable tools that foster reflective practice, professional leadership growth, and lifelong learning. While working on e-portfolios, they developed critical thinking skills that added to their PD and encouraged them to examine their leadership capabilities. They confirmed they gained new and refined skills that ought to make them better-equipped leaders. Upon critically reflecting on personal experiences, one may develop a commitment to improve and grow.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Zeina Hojeij	✓	✓	✓	✓	✓	✓		✓	✓	✓			✓	
Areej ElSayary		✓		✓		✓		✓		✓		✓		

C : **C**onceptualization	I : **I**nvestigation	Vi : **Vi**sualization
M : **M**ethodology	R : **R**esources	Su : **Su**pervision
So : **So**ftware	D : **D**ata Curation	P : **P**roject administration
Va : **Va**lidation	O : Writing - **O**riginal Draft	Fu : **Fu**nding acquisition
Fo : **Fo**rmal analysis	E : Writing - Review & **E**diting	

CONFLICT OF INTEREST STATEMENT

The authors declare that they have no known financial, personal, or professional competing interests that could have influenced the work reported in this paper. This includes non-financial competing interests such as political, personal, religious, ideological, academic, or intellectual positions.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study, ensuring their privacy and rights were fully protected in accordance with ethical and legal standards. Informed consents in English were sent to the participants for their e-portfolio reflections. After the documents were signed, it was denoted that they had read the consent forms and agreed to partake in the study. All participants were informed about the right to withdraw from the study at any time without penalty. In addition, participants who volunteered for the semi-structured interviews also consented to participate at the onset of the interview to be recorded.

ETHICAL APPROVAL

The researcher attained ethical approval from the Research Ethics Committee of her affiliated university since the study involved human subjects and minors. The Ethics Application RIF code is R21112.

DATA AVAILABILITY

The authors confirm that the data supporting the findings of this study are available within the article.

REFERENCES

[1]   W. Wei, "Guidelines of designing e-portfolios in Canadian and Chinese higher education," M.S. thesis, University of Alberta, Edmonton, Canada, 2018.
[2]   M. Mapundu and M. Musara, "E-portfolios as a tool to enhance student learning experience and entrepreneurial skills," *South African Journal of Higher Education*, vol. 33, no. 6, pp. 191–214, Dec. 2019, doi: 10.20853/33-6-2990.
[3]   K. B. Yancey and T. L. Rhodes, *ePortfolio as curriculum: models and practices for developing students' ePortfolio literacy*. New York: Routledge, 2019, doi: 10.4324/9781003444572.
[4]   N. Hockly and G. Dudeney, "Current and future digital trends in ELT," *RELC Journal*, vol. 49, no. 2, pp. 164–178, 2018, doi: 10.1177/0033688218777318.
[5]   R. Lam, "E-portfolios: what we know, what we don't, and what we need to know," *RELC Journal*, vol. 54, no. 1, pp. 208–215, 2023, doi: 10.1177/0033688220974102.
[6]   M. S. Andrade, "E-portfolios and online learning: applying concepts of organizational behavior," *International Journal of E-Learning & Distance Education*, vol. 34, no. 1, pp. 1–15, 2019.
[7]   W. Meeus, F. Questier, and T. Derks, "Open source eportfolio: development and implementation of an institution-wide electronic portfolio platform for students," *Educational Media International*, vol. 43, no. 2, pp. 133–145, 2006, doi: 10.1080/09523980600641148.

[8]   C. Ellis, "The importance of e-portfolios for effective student-facing learning analytics," in *E-Portfolios in Higher Education: A Multidisciplinary Approach*, T. Chaudhuri and B. Cabau, Eds., Singapore: Springer Singapore, 2017, pp. 35–49, doi: 10.1007/978-981-10-3803-7_3.

[9]   P. Hodgson, "Student e-portfolios: Unfolding transformation in university life in general education program," in *E-Portfolios in Higher Education: A Multidisciplinary Approach*, T. Chaudhuri and B. Cabau, Eds., Singapore: Springer Singapore, 2017, pp. 171–181, doi: 10.1007/978-981-10-3803-7_12.

[10]   M. Pegrum and G. Oakley, "The changing landscape of e-portfolios: reflections on 5 years of implementing e-portfolios in pre-service teacher education," in *E-Portfolios in Higher Education: A Multidisciplinary Approach*, T. Chaudhuri and B. Cabau, Eds., Singapore: Springer Singapore, 2017, pp. 21–34, doi: 10.1007/978-981-10-3803-7_2.

[11]   C. G. Schneider, B. Eynon, and L. M. Gambino, *Catalyst in action: case studies of high-impact ePortfolio practice*. New York: Routledge, 2018, doi: 10.4324/9781003443384.

[12]   T. L. Rhodes, "Lift every voice: ePortfolios for creating and integrating," *International Journal of ePortfolio*, vol. 8, no. 2, pp. 87–89, 2018.

[13]   S. Chye, M. Zhou, C. Koh, and W. C. Liu, "Using e-portfolios to facilitate reflection: insights from an activity theoretical analysis," *Teaching and Teacher Education*, vol. 85, pp. 24–35, 2019, doi: 10.1016/j.tate.2019.06.002.

[14]   D. Smith, "Evidencing your lifelong learning with e-Portfolio," *Biochemist*, vol. 40, no. 5, pp. 22–24, 2018, doi: 10.1042/bio04005022.

[15]   M. Ciesielkiewicz, "The use of e-portfolios in higher education: from the students' perspective," *Issues in Educational Research*, vol. 29, no. 3, pp. 649–667, 2019.

[16]   J. Miller and M.-H. Chung, "A narrative biographical study of faculty collaboration in e-Portfolio development," *International Journal of Teacher Education and Professional Development (IJTEPD)*, vol. 6, no. 1, pp. 1–11, 2023, doi: 10.4018/ijtepd.320520.

[17]   P. S. Khaydaraliyevna, O. G. Ruzimurodovich, E. A. Maxmudovich, and B. K. Sapparovich, "Analysis of professional development processes and opportunities of the system of continuous professional development," *Special Education*, vol. 2, no. 43, pp. 122–130, 2022.

[18]   K. Karoudis and G. D. Magoulas, "An architecture for smart lifelong learning design," in *Innovations in Smart Learning. Lecture Notes in Educational Technology*, Springer, Singapore, 2017, pp. 113–118, doi: 10.1007/978-981-10-2419-1_16.

[19]   L. F. Kwok and Y. K. Hui, "The role of e-portfolio for smart life long learning," in *Smart Innovation, Systems and Technologies*, vol. 70, V. L. Uskov, J. P. Bakken, R. J. Howlett, and L. C. Jain, Eds., Cham: Springer International Publishing, 2018, pp. 327–356, doi: 10.1007/978-3-319-59454-5_11.

[20]   J. Dewey, *How we think (original work published 1910)*. New York: Prometheus Books, 1933.

[21]   C. Lackner and T. Martini, "Helping university students succeed at employment interviews: the role of self-reflection in e-portfolios," *Teaching and Learning Inquiry*, vol. 5, no. 2, pp. 3–15, 2017, doi: 10.20343/teachlearninqu.5.2.2.

[22]   Z. S. Siddiqui *et al.*, "Twelve tips for introducing e-Portfolios in health professions education," *Medical Teacher*, vol. 45, no. 2, pp. 139–144, 2023, doi: 10.1080/0142159X.2022.2053085.

[23]   F. Sultana, C. P. Lim, and M. Liang, "E-portfolios and the development of students' reflective thinking at a Hong Kong University," *Journal of Computers in Education*, vol. 7, no. 3, pp. 277–294, 2020, doi: 10.1007/s40692-020-00157-6.

[24]   O. Farrell and A. Seery, "'I am not simply learning and regurgitating information, I am also learning about myself': learning portfolio practice and online distance students," *Distance Education*, vol. 40, no. 1, pp. 76–97, 2019, doi: 10.1080/01587919.2018.1553565.

[25]   R. McManus, "Lessons from reflective journaling in undergraduate eportfolios," *Irish Journal of Technology Enhanced Learning*, vol. 6, no. 1, pp. 186–193, 2021, doi: 10.22554/ijtel.v6i1.81.

[26]   C. Ziegelbauer and B. D'errico, "Eportfolio in teacher education and academic further education: a new learning journey experience at the University of Konstanz, Germany," *Irish Journal of Technology Enhanced Learning*, vol. 6, no. 1, pp. 37–46, 2021.

[27]   G. A. Nwogu *et al.*, "Effectiveness of self-directed learning in adult education: a comparative study," *International Research Journal of Multidisciplinary Scope*, vol. 6, no. 2, pp. 1388–1400, 2025, doi: 10.47857/irjms.2025.v06i02.03147.

[28]   M. Cidon and K. Lewis, "The nuts and bolts of performance driven ePortfolios in Rheumatology training," in *Southern California Rheumatology Society Virtual Meeting*, 2021.

[29]   A. M. Moza, "Talent development of future workforce in Vietnam," 2022, doi: 10.13140/rg.2.2.12275.60968.

[30]   A. Binbusayyis and T. Vaiyapuri, "A professional-driven blockchain framework for sharing e-Portfolio in the context of Industry 4.0," *ICT Express*, vol. 9, no. 2, pp. 140–149, 2023, doi: 10.1016/j.icte.2022.03.010.

[31]   E. L. Deci and R. M. Ryan, "Self-determination theory," in *Handbook of Theories of Social Psychology*, P. A. M. van Lange, A. W. Kruglanski, and E. T. Higgins, Eds., London: SAGE Publications Ltd, 2012, pp. 416–436, doi: 10.4135/9781446249215.n21.

[32]   E. Wenger, *Communities of practice: learning, meaning, and identity*. Cambridge, UK: Cambridge University Press, 1999.

[33]   S. B. Merriam and E. J. Tisdell, *Qualitative research: a guide to design and implementation*, 4th ed. San Francisco, CA: Wiley, 2015.

[34]   J. W. Creswell and J. D. Creswell, *Research design: qualitative, quantitative, and mixed methods approaches*, 5th ed. Thousand Oaks, CA: SAGE Publications, Inc., 2017.

[35]   L. Cohen, L. Manion, and K. Morrison, *Research methods in education*, 8th ed. London: Routledge, 2017.

[36]   J. van Tartwijk, E. Driessen, C. van der Vleuten, and K. Stokking, "Factors influencing the successful introduction of portfolios," *Quality in Higher Education*, vol. 13, no. 1, pp. 69–79, 2007, doi: 10.1080/13538320701272813.

[37]   W. Hilzensauer and G. Buchberger, "MOSEP – more self-esteem with my e-Portfolio development of a train-the-trainer course for e-Portfolio tutors," *International Journal of Emerging Technologies in Learning (iJET)*, vol. 4, no. 1, pp. 5–8, Feb. 2009, doi: 10.3991/ijet.v4i1.820.

[38]   N. Hyland and J. Kranzow, "The e-Portfolio: a tool and a process for educational leadership," *Journal on Excellence in College Teaching*, vol. 23, no. 2, pp. 69–91, 2012.

[39]   B. K. Song, "E-portfolio implementation: examining learners' perception of usefulness, self-directed learning process and value of learning," *Australasian Journal of Educational Technology*, vol. 37, no. 1, pp. 68–81, 2021, doi: 10.14742/ajet.6126.

[40]   Q. Lin, "Preservice teachers' learning experiences of constructing e-portfolios online," *Internet and Higher Education*, vol. 11, no. 3–4, pp. 194–200, 2008, doi: 10.1016/j.iheduc.2008.07.002.

[41]   G. Johnson, P.-H. Hsieh, and K. Kidwai, "Perceived value and persistence of web publishing skills: implications for e-portfolio systems," *International Journal on E-Learning*, vol. 6, pp. 379–394, 2007.

BIOGRAPHIES OF AUTHORS

Zeina Hojeij is a professor at the College of Interdisciplinary Studies at Zayed University, UAE. She is also the assistant dean for Research and Outreach. She holds an EdD in educational leadership and administration from Saint Louis University, USA. She is a fellow of the Higher Education Academy (HEA). Additionally, she is a Certified Online Instructor (COI), CELTA & CELTYL certified. Her research interests include mobile learning technology, educational leadership, applied linguistics, and teaching and learning. She can be contacted at email: Zeina.Hojeij@zu.ac.ae.

Areej ElSayary is an associate professor at the College of Interdisciplinary Studies at Zayed University, UAE. She is the chair of the General Education Department. She has years of experience in STEAM education, curriculum design, teaching, assessment, and school accreditation. She is an approved accreditation visitor for NEASC and CIS. Her research focuses on cognitive development, interdisciplinary STE(A)M curriculum, and assessment. She can be contacted at email: Areej.Elsayary@zu.ac.ae.