

The Students are Also Invited: Portfolio Assessment and its Impact on EFL Learners' Critical Thinking, Growth Mindfulness, and Autonomy

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Abstract

This study investigates the impact of digital portfolio assessment on English as a Foreign Language (EFL) learners' critical thinking, growth mindfulness, and autonomy. Through narratives and interviews, the study explores how digital portfolios influence learners' cognitive processes, mindfulness practices, and self-directed learning behaviors. Drawing on the literature on Computer-Assisted Language Learning (CALL), portfolio assessment, critical thinking, growth mindfulness, and autonomy, the study examines the potential of digital portfolios as a pedagogical tool for enhancing language learning outcomes. The findings revealed that digital portfolio assessment facilitates the development of critical thinking skills by promoting analytical thinking, problem-solving abilities, and higher-order

thinking skills among EFL learners. Additionally, digital portfolios fostered growth mindfulness by increasing learners' self-awareness, attention, and intentionality in their language learning experiences. Moreover, digital portfolio assessment empowered learners by promoting self-direction, goal-setting, and self-monitoring skills, enabling them to take ownership of their learning journey. The study concludes by discussing the implications of these findings for language teachers, syllabus designers, materials developers, and policymakers, highlighting the potential of digital portfolio assessment to create inclusive, engaging, and learner-centered language learning environments in EFL education.

Keywords: Autonomy, Computer-assisted language learning, Critical thinking, Growth Mindset, Portfolio assessment

Introduction

In EFL pedagogy, portfolio assessment has emerged as a promising approach to evaluate language proficiency and foster essential skills such as critical thinking, growth mindsets, and learner autonomy among students. As a multifaceted tool, portfolio assessment offers a holistic view of students' language development by incorporating diverse artifacts that showcase their progress and achievements (Barrett, 2010). This method goes beyond traditional testing practices, encouraging students to reflect on their learning journey, set goals, and take ownership of their educational path (Boud, 2000). Integrating portfolio assessment in EFL contexts can enhance language learning outcomes and cultivate a deeper engagement with the learning process, ultimately empowering students to become more self-directed and reflective learners (Namaziandost et al., 2020; Zimmerman, 2002).

Portfolio assessment, a subject that has received research attention in the ESL literature, is an extensively studied strategy for assessment-as-learning (Alam & Aktar, 2019; Lam, 2017, 2020). The portfolio refers to a deliberate compilation of students' work that serves as evidence of their efforts, progress, and accomplishments in one or more curriculum areas, as outlined by Paulson et al. (1991). Portfolio evaluation, typically employed in writing contexts, has been proven to facilitate writing enhancement through self-regulation, self-assessment, and peer assessment (Barrot, 2016; Lam, 2017). Similarly, it positively influences students' autonomy, motivation, and reflective thinking (Lee, 2017; Sultana et al., 2020).

The conceptualization of critical thinking has undergone a transformation over time. Initial definitions emphasized the broad and multifaceted essential nature of thinking, identifying at least three key dimensions: disposition, knowledge, and competencies (Glaser, 1941). Subsequently, this definition has evolved to delineate specific elements within each dimension (Watson, 1980). For instance, critical thinking is now understood to encompass the ability to employ cognitive techniques or methodologies to enhance the likelihood of achieving a favorable outcome (Halpern, 1999). Specific cognitive abilities, such as assessment, troubleshooting, introspective analysis, deductive reasoning, and probabilistic

reasoning, are recognized as integral components of critical thinking capabilities in scholarly investigations and evaluations (Ennis, 1987; Halpern, 1999). Furthermore, in the contemporary era, metacognition and self-regulation competencies have emerged as indispensable elements of critical thinking, complementing the cognitive skills identified by earlier academics (Paul & Elder, 2019).

Mindfulness plays a vital role as a comprehensive skill in second language acquisition (SLA). It refers to an individual's capacity to focus on present-moment events, experiences, and external and internal states (Dane, 2011). Practicing mindfulness cultivates awareness, which is associated with emotional abilities like emotional intelligence—being conscious of one's emotions and empathizing with others (Dane, 2011). Additionally, mindfulness influences how individuals perceive their surroundings, including the available resources, affecting their academic competencies. Notably, studies by Sternberg (2006) and Siqueira and Pitassi (2016) have validated that mindfulness practice enhances intellectual capabilities and encourages diverse thinking approaches. Similarly, the correlation between mindfulness and SLA has been explored in research by Cheng et al. (2020), Erus and Deniz (2020), and Teal et al. (2019), who suggest that mindfulness fosters emotional regulation, self-awareness, and future orientation.

The core of effective language learning revolves around the notion of autonomy, a dynamic force that empowers learners to assume responsibility for their educational journey (Muth & Lüftenegger, 2024). Autonomy in language acquisition goes beyond simply acquiring vocabulary and grammar rules; it encompasses a profound shift towards self-directed learning and individual agency (Muth & Lüftenegger, 2024). Within language education, learners' autonomy denotes their capacity to make informed choices, establish personalized objectives, and employ self-regulated strategies that go beyond the boundaries of the classroom (Benson & Voller, 2014). As learners progress to intermediate and advanced levels, autonomy becomes increasingly crucial, propelling them toward achieving linguistic proficiency that surpasses mere rote memorization (Benson & Voller, 2014).

Despite the growing recognition of portfolio assessment as a valuable approach in English EFL education, exploring its specific impact on EFL learners' critical thinking, growth mindfulness, and autonomy remains still necessary. While portfolio assessment has been extensively studied in English as a Second Language (ESL) contexts, its potential benefits in fostering critical thinking skills, promoting growth mindsets, and nurturing learner autonomy within EFL education require further investigation. Although previous research has demonstrated the positive influence of portfolio assessment on writing enhancement, autonomy, motivation, and reflective thinking in ESL settings, the transferability of these findings to EFL contexts needs to be explored due to potential contextual variations. Furthermore, the relationship between portfolio assessment and developing critical thinking, growth mindfulness, and autonomy in EFL learners remains relatively unexplored.

Therefore, there is a gap in the literature regarding the specific impact of portfolio assessment on these essential aspects of EFL learners' educational experience. Addressing this gap will provide valuable insights into portfolio assessment's effectiveness and potential benefits as a multifaceted tool for EFL learners' language development and holistic growth.

This study is of significant importance as it investigates the impact of portfolio assessment on EFL learners' critical thinking, growth, mindfulness, and autonomy. The findings can have implications for educators, curriculum designers, and policymakers. Understanding the role of portfolio assessment in fostering critical thinking skills can inform instructional practices, and exploring its influence on growth mindfulness can contribute to learners' emotional and cognitive development. Additionally, examining the interplay between portfolio assessment and learner autonomy can empower learners to take ownership of their educational journey. The potential implications extend to curriculum design, policy-making, and creating student-centered approaches in EFL education, promoting holistic learner development, higher-order thinking, and self-directed learning skills.

Literature Review

Computer-assisted language learning

CALL has been the subject of extensive research in language education. Studies have consistently demonstrated the potential of CALL to enhance language learning outcomes and foster learner engagement (Golonka et al., 2014; Lai & Kritsonis, 2006). One of the key advantages of CALL is its ability to provide personalized and adaptive learning experiences, catering to the diverse needs and learning styles of language learners (Stockwell, 2007). By leveraging technology, CALL environments can offer immediate feedback, targeted practice, and opportunities for self-paced learning, which have been shown to improve language proficiency, vocabulary acquisition, and grammatical understanding (Burston, 2015; Golonka et al., 2014).

Furthermore, CALL has facilitated collaborative and interactive language learning experiences. Through online platforms, language learners can engage in virtual exchanges, participate in discussion forums, and collaborate on projects with local and global peers (Kern, 2006; Thorne, 2003). This social dimension of CALL aligns with sociocultural theories of language learning, emphasizing the importance of social interaction and the co-construction of knowledge in language acquisition (Vygotsky, 1978). By leveraging the affordances of technology, CALL environments can create opportunities for authentic communication, cultural exchange, and the development of intercultural competence (Thorne, 2003; Warschauer & Healey, 1998).

Portfolio assessment

Portfolios, whether electronic or printed, consist of student-written scripts accumulated over time, often accompanied by a reflective journal. Within education, portfolio assessment is frequently regarded as a superior alternative to traditional product-

oriented standardized tests (Kirkpatrick & Gyem, 2012). Numerous studies within the realm of second/foreign language (L2) education have emphasized the advantages of portfolio assessment. These benefits include L2 teachers' favorable experiences with various portfolio types (Lee, 2017), the enhancement of L2 learners' autonomy, self-regulated learning, social awareness, and metacognitive awareness through portfolios (Behbahani et al., 2011), and the role of portfolio assessment in mediating the revision process of works-in-progress (Mphahlele, 2022). Portfolio assessment has encountered significant challenges in L2 classroom settings, primarily due to factors such as the inflexibility of L2 teachers (Xu & Brown, 2016), inadequate language assessment literacy (Gan & Lam, 2020), decreased student engagement (Lee & Coniam, 2013), the complexity of holistic grading (Song & August 2002), and the pervasive test-driven culture prevalent in many school systems. Despite its purported educational advantages, portfolio assessment remains contentious in classroom practice (Lam, 2018). Consequently, the full implementation of portfolio assessment in L2 contexts has faced numerous difficulties, prompting Hyland and Hyland (2019) to call for further extensive research on these challenges.

The approach of process-oriented peer assessment in L2 writing offers a redefined perspective on pedagogy, framing it as a recursive and metacognitive endeavor that engages L2 learners in ongoing reflection on their language progression (Lam, 2019). Rooted in the social constructivism model of learning (Vygotsky, 1987), which posits that effective learning occurs through active engagement in social interactions rather than passive reception of knowledge, portfolio-based assessment is built upon this foundation. Writing portfolios strengthen L2 learners' understanding of writing as a socially situated practice within academic discourse communities (Duff, 2010). Consequently, they facilitate the evaluation of L2 writers' development in both higher-level writing skills (such as textual and discursive writing) and lower-level writing skills (such as mechanics and punctuation) (Steen-Utheima & Hopfenbeck, 2018).

According to Chappuis (2014), the effectiveness of learner engagement hinges on how well L2 learners comprehend the objectives outlined in writing portfolios, their ability to promptly identify the gap between their current status and these objectives, and the actions they take to achieve them. Similarly, it is recommended that L2 writing instructors promote self-reflection by guiding students through tutorials on the entire portfolio assessment process (Kusuma et al., 2021). This can involve providing examples and prompts (Gregory et al., 2001), offering extended deadlines to enhance student involvement (Lam, 2014), and transparently sharing assessment rubrics with them (Panadero & Romero, 2014).

Critical thinking

Critical thinking, an essential component of advanced cognitive abilities, entails actively and purposefully examining ideas, arguments, evidence, and assumptions systematically and analytically to arrive at well-founded conclusions and informed

judgments (Ennis, 1987; Paul & Elder, 2019). It encompasses a variety of cognitive functions such as analysis, evaluation, inference, interpretation, and problem-solving (Facione, 1990). At its core, critical thinking involves the capacity to question, contest, and assess information rigorously rather than simply accepting it at face value (Brookfield, 1987). Furthermore, critical thinking entails metacognitive awareness, allowing individuals to reflect on their own cognitive processes, identify biases and assumptions, and adapt their thinking accordingly (Halpern, 2013). This skill is not confined to any specific domain but is relevant across various disciplines and settings, facilitating profound comprehension, effective communication, and rational decision-making (Lu & Xie, 2024; Paul & Binker, 1990).

Critical thinking is pivotal in language learning because it facilitates learners' meaningful interaction with the target language, texts, and cultural conventions (Bagheri, 2015). Through cultivating critical thinking abilities, instructors can empower learners to scrutinize and assess linguistic structures, discourse patterns, and rhetorical techniques within genuine communicative settings (McKenzie, 1998). Critical thinking equips learners with the capacity to discern subtle nuances of meaning, recognize underlying assumptions, and critically evaluate arguments and evidence presented in both written and spoken discourse (Lai, 2011). Additionally, by prompting learners to reflect critically on their language-learning experiences, educators can aid in developing metacognitive strategies for overseeing and adjusting their language-learning journey (Alsaleh, 2020). Integrating critical thinking skills into language education can ultimately augment learners' language proficiency, intercultural aptitude, and effectiveness in communicating persuasively across diverse linguistic and cultural milieus (Paul & Elder, 2019).

Growth mindfulness

The terms "sati" and "sampajañña" in the Pali language, representing the idea of being present-minded and attentive to the current moment, serve as the origin of the term "mindfulness" (Bodhi, 2000). Defining mindfulness has posed challenges, but previous studies have often referred to Jon Kabat-Zinn's (2023) definition, which characterizes it as the deliberate act of attentively observing the present moment without judgment. Shapiro and Carlson (2009) expanded on this definition, encompassing both mindful awareness and mindful practice, recognizing mindfulness as both a process and an outcome. The former refers to structured training incorporating three fundamental elements: intention, attention, and attitude. It involves consciously cultivating sustained attention, acceptance, discernment, and compassion. The latter pertains to an innate human capacity, an understanding and firsthand experience of life, enabling clear recognition of which experiences contribute to personal or collective well-being or distress. Mindfulness allows individuals to construct more flexible autobiographical meaning, enabling positive reflection on negative encounters and savoring positive ones (Garland et al., 2015; Namaziandost et al., 2024). Abundant research (Bernay, 2014; Hue & Lau, 2015; Kerr et al., 2017) supports the notion that

practicing mindfulness promotes well-being, strengthens interpersonal relationships, reduces stress, and mitigates burnout.

Autonomy

According to the Self-Determination Theory (SDT) (Deci & Ryan, 2000; Ryan & Deci, 2000, 2017), autonomy holds a significant position as a core psychological need, carrying inherent motivational implications for personal growth and happiness (ibid.). In the context of this theory, autonomy refers to behavior that aligns with an individual's authentic beliefs, genuine interests, and values. The level of autonomy in regulating one's actions plays a crucial role in performance, perseverance, and overall well-being, making it a central motivating factor for individuals (Deci & Ryan, 2000; Ryan & Deci, 2000, 2017).

Autonomy and motivation have been extensively studied, particularly in the field of L2 learning, revealing a strong correlation (e.g., Fukuda et al., 2011; Spratt et al., 2002; Ushioda, 1996, 2013), particularly in online learning settings (Godwin-Jones, 2019). In this context, autonomy emerges as a more influential predictor of proficiency than language anxiety and motivation (Liu, 2012). The digital learning landscape is recognized as a necessity (Reinders & White, 2011) and a potential catalyst for enhancing learners' autonomy. Its benefits range from providing access to resources "anytime, anywhere" to cultivating students' awareness of the learning process (Smith & Craig, 2013) and fostering positive attitudes toward autonomous learning (Sato et al., 2020). However, caution is warranted regarding the potential risk of technology creating a false sense of student progress (Reinders & White, 2011).

Despite the growing recognition of portfolio assessment as a valuable approach in EFL education, exploring its specific impact on EFL learners' critical thinking, growth mindfulness, and autonomy remains necessary. While portfolio assessment has been extensively studied in ESL contexts, its potential benefits in fostering critical thinking skills, promoting growth mindsets, and nurturing learner autonomy within the realm of EFL education require further investigation. Although previous research has demonstrated the positive influence of portfolio assessment on writing enhancement, autonomy, motivation, and reflective thinking in ESL settings, the transferability of these findings to EFL contexts needs to be explored due to potential contextual variations. Furthermore, the relationship between portfolio assessment and developing critical thinking, growth mindfulness, and autonomy in EFL learners remains relatively unexplored. Therefore, there is a gap in the literature regarding the specific impact of portfolio assessment on these essential aspects of EFL learners' educational experience. Addressing this gap will provide valuable insights into portfolio assessment's effectiveness and potential benefits as a multifaceted tool for EFL learners' language development and holistic growth. Therefore, this study addressed the following research questions:

1. How does portfolio assessment in digital format affect EFL learners' critical thinking?

2. How does portfolio assessment in digital format affect EFL learners' mindfulness?
3. How does portfolio assessment in digital format affect EFL learners' autonomy?

Method

The study employs a narrative inquiry approach to explore the impact of portfolio assessment on EFL learners' critical thinking, growth mindfulness, and autonomy. Narrative inquiry is an appropriate methodological choice as it allows for an in-depth examination of individuals' experiences and perspectives through the lens of storytelling. The study's design involves collecting qualitative data through interviews and reflective narratives from the sample of EFL learners who have engaged in portfolio assessment.

The participants of this study were 15 learners from an intact classroom in a language institute in Jordan. The participants ranged in age from 18 to 29, with eight male and seven female learners. All participants spoke Arabic as their first language (L1) and did not have bilingual proficiency. To determine their English proficiency level, an Oxford Quick Placement Test (OQPT) was administered, which indicated that all participants were at the intermediate level of English. These participants were selected based on their availability and willingness to participate in the study, providing a diverse representation of EFL learners within the given context.

The instruments used in this study included the OQPT to determine the participants' language proficiency level. The OQPT was administered to assess the learners' English proficiency and ensure all participants were at the intermediate level.

Participants were required to compile their assignments and upload them onto a Dropbox drive for the portfolio section. This electronic portfolio allowed for easy access and organization of their work, facilitating the assessment process. The participants' portfolios were reviewed and analyzed to examine the impact of portfolio assessment on their critical thinking, growth mindfulness, and autonomy.

To gain a deeper understanding of the participants' perceptions and feelings regarding the effect of e-portfolio assessment on their critical thinking, growth mindfulness, and autonomy, interviews, and narrative inquiries were conducted. These qualitative methods provided an opportunity for participants to reflect on their experiences, share their thoughts, and express their perspectives. The interviews were semi-structured, allowing flexibility for participants to elaborate on their experiences and provide rich insights into the impact of portfolio assessment on their language learning journey.

The narrative inquiries complemented the interviews by encouraging participants to construct and share their personal stories related to critical thinking, growth mindfulness, and autonomy. This approach allowed for a more comprehensive exploration of the participants' experiences, enabling a deeper understanding of the multifaceted effects of portfolio assessment on their language development and holistic growth.

In this study, the treatment involved implementing portfolio assessment as a method to assess the participants' language learning progress and its impact on critical thinking, growth mindfulness, and learner autonomy. The portfolio assessment process consisted of several steps.

First, the participants were given clear guidelines and instructions on creating and organizing their portfolios. They were instructed to compile their assignments, including written essays, projects, and other language learning tasks, and upload them onto a shared Dropbox drive. The participants were given a specific timeframe to complete this task.

The teacher supported the participants throughout the assessment period by providing feedback and guidance. The teacher offered constructive comments on the submitted assignments, highlighting strengths and areas for improvement. This feedback aimed to encourage critical thinking and reflective practices among the participants.

Additionally, the participants were encouraged to engage in self-reflection and self-assessment. They were asked to evaluate their work, identify areas where they demonstrated critical thinking skills, growth mindfulness, and learner autonomy, and reflect on their progress.

The participants actively engaged in the process to gain a comprehensive understanding of the impact of portfolio assessment. They had the opportunity to review their work, reflect on their learning experiences, and document their thoughts and perceptions of critical thinking, growth mindfulness, and learner autonomy within their portfolios.

The treatment involved a collaborative effort between the teacher and the participants. The teacher provided guidance and feedback while the participants actively selected and organized their assignments, reflected on their learning experiences, and documented their growth in critical thinking, growth mindfulness, and learner autonomy within their portfolios.

The data analysis procedures in this study employed a thematic analysis approach to identify patterns, themes, and connections within the collected qualitative data. Thematic analysis is a widely used method that allows for the exploration and interpretation of participants' narratives and interviews systematically and rigorously.

The first step in the data analysis process involved transcribing and organizing the interview data and narratives obtained from the participants. The transcriptions were carefully reviewed to ensure accuracy and familiarity with the content.

Next, the researchers familiarized themselves with the data by reading and re-reading the transcripts. This step aimed to gain an overall understanding of the participants' narratives and identify preliminary themes or patterns that emerged.

After familiarization, a coding process was conducted to assign labels or codes to meaningful data segments. The coding process involved identifying and labeling segments of text that related to critical thinking, growth mindfulness, and learner autonomy. This process was iterative, refining and revising codes as new insights emerged.

Once the initial coding was completed, the researchers grouped related codes to form preliminary themes. These themes captured the participants' experiences, perceptions, and reflections regarding the impact of portfolio assessment on critical thinking, growth mindfulness, and learner autonomy.

The researchers then reviewed and refined the themes, ensuring they accurately represented the participants' narratives and the research objectives. This involved examining the relationships between themes, considering alternative interpretations, and refining the thematic structure.

Finally, the researchers interpreted and analyzed the themes, drawing connections between the participants' experiences and the research questions. They looked for commonalities, contrasts, and variations within the data and considered the implications of these findings.

This study aimed to uncover and interpret the underlying meanings and patterns in the qualitative data collected through interviews and narrative inquiries by employing a thematic analysis approach. This approach provided a structured and systematic method for analyzing the participants' narratives and gaining insights into the impact of portfolio assessment on critical thinking, growth mindfulness, and learner autonomy in the EFL context.

Results

The impact of portfolio assessment in digital format on EFL learners' critical thinking

The exploration of digital portfolio assessment's impact on EFL learners revealed various effects on their critical thinking skills. Participants reported that organizing and reviewing their assignments within a digital portfolio framework supported their cognitive development in several meaningful ways.

Participants noted that compiling and evaluating their work helped sharpen their analytical skills. They found that the process encouraged them to scrutinize their submissions critically, allowing them to pinpoint both strengths and weaknesses and to approach their learning with a more nuanced perspective.

Additionally, participants highlighted an improvement in their problem-solving capabilities. The need to address challenges in their assignments prompted them to actively seek solutions, research, and engage in constructive feedback exchanges with peers and teachers. This approach cultivated their ability to think critically and make well-informed decisions.

The digital portfolio also facilitated increased engagement and metacognitive awareness. Learners appreciated the opportunity to revisit past work, track their progress, and reflect on their learning strategies, which promoted greater self-awareness and autonomous learning.

Furthermore, feedback from teachers and peers was instrumental in enhancing critical thinking. Participants valued constructive criticism, encouraging them to evaluate their work from different perspectives and deepen their analysis.

Lastly, multimedia elements in the digital portfolio added another layer to their learning experience. The ability to integrate visuals, audio, and hyperlinks enriched their presentations and stimulated more creative and critical thinking about effectively communicating their ideas.

On the whole, the digital portfolio assessment positively influenced various aspects of critical thinking among EFL learners, supporting their development in analytical thinking, problem-solving, reflective practices, and multimedia integration. In the table presented below, the themes mentioned implicitly above are offered along with their description.

Table 1.

Emerged themes from the impact of portfolio assessment in digital format on EFL learners' critical thinking

Theme	Description
Analytical Skills	Enhanced ability to critically analyze one's work, identify strengths and weaknesses, and reflect on progress.
Problem-Solving Abilities	Encouragement to seek solutions to challenges, engage in research, and utilize feedback for informed decision-making.
Higher-Order Thinking Skills	A platform for engaging in critical analysis, evaluation, and synthesis, leading to more sophisticated thinking.
Reflective Thinking	Opportunities to revisit past work, reflect on growth, set goals, and develop strategies for improvement.
Self-Awareness and Self-Assessment	Increased ability to evaluate one's own work, recognize strengths and weaknesses and become more aware of learning strategies.
Role of Feedback	Constructive feedback from peers and teachers stimulates deeper analysis and challenges existing ideas.
Integration of Multimedia Elements	Use visuals, audio, and hyperlinks to enhance presentations and encourage creative and critical thinking.

The impact of portfolio assessment in digital format on EFL learners' growth mindfulness

Analyzing how digital portfolio assessment affects EFL learners' growth mindfulness revealed several impactful outcomes. Participants consistently reported that engaging with their assignments through the portfolio framework enhanced various aspects of mindfulness in their learning journey.

Participants observed a notable increase in self-awareness. The portfolio assessment encouraged them to reflect on their learning experiences, strengths, and areas for improvement. This process of introspection heightened their awareness of their thoughts, emotions, and learning strategies, contributing to a greater sense of mindfulness.

Attention and focus also improved significantly. The digital format provided a dedicated space for participants to concentrate on their work and engage more deeply. This focused engagement helped them remain present and attentive to their learning progress and feedback.

The assessment process fostered a sense of intentionality and purpose. Participants made deliberate choices by selecting and organizing assignments purposefully and reflected on their goals and progress. This intentional approach supported a more mindful and purposeful engagement with their learning journey.

Reflection and self-regulation played a key role in developing growth mindfulness. Participants reported that regularly reflecting on their experiences, setting goals, and monitoring their progress helped them become more mindful of their learning process and areas needing more effort.

Metacognitive awareness was another significant outcome. The portfolio assessment facilitated processes that encouraged participants to reflect on their learning strategies and make adjustments, deepening their mindfulness.

Personal growth and self-discovery were also highlighted. Participants appreciated the opportunities for insight into their learning preferences and strengths, which further supported their sense of mindfulness and self-directed growth.

The digital portfolio assessment positively influenced various aspects of growth mindfulness among EFL learners, promoting self-awareness, focus, intentionality, reflection, metacognitive awareness, and personal growth. In the table below, the themes mentioned above are presented along with their description.

Table 2.

Emerged themes from the impact of portfolio assessment in digital format on EFL learners' growth mindfulness

Theme	Description
Self-Awareness	Increased reflection on learning experiences, strengths, and areas for

Attention and Focus	improvement, leading to greater mindfulness. Enhanced ability to concentrate on work and remain present, fostering deeper engagement and mindfulness.
Intentionality and Purpose	Deliberate choices and reflections on goals and progress, contributing to a more mindful approach to learning.
Reflection and Self-Regulation	Regular reflection and goal-setting to monitor progress, fostering mindfulness in the learning process.
Metacognitive Awareness	Encouragement of reflecting on and adjusting learning strategies, deepening mindfulness in learning.
Personal Growth and Self-Discovery	Opportunities for gaining insights into learning preferences and strengths, supporting self-directed growth and mindfulness.

The impact of portfolio assessment in digital format on EFL learners' autonomy

The investigation into the effects of digital portfolio assessment on EFL learners' autonomy revealed several key outcomes. Participants consistently reported that engaging with their assignments within the digital portfolio framework significantly enhanced their autonomy.

A major theme that emerged was the increase in self-direction. Participants described how the portfolio assessment empowered them to take ownership of their learning journey. The ability to independently select, organize, and reflect on their assignments allowed them to make decisions and take responsibility for their progress.

Another prominent theme was the development of goal-setting and self-monitoring skills. Participants noted that the portfolio process encouraged them to set goals and regularly track their progress. This self-assessment practice helped them make informed decisions about their learning strategies and adapt their approaches, fostering a stronger sense of autonomy.

Self-reflection and self-evaluation were also highlighted as crucial components. Participants appreciated the opportunity to review their work, identify strengths and weaknesses, and reflect on their learning experiences. This reflective practice enhanced their ability to self-assess and make independent choices regarding their language learning.

Feedback and self-improvement played a significant role. Participants reported that receiving feedback from teachers and peers within the portfolio framework provided valuable

insights into their performance. This feedback helped guide their learning while allowing them to make decisions about implementing improvements.

The digital format of the portfolio was noted for its convenience and accessibility. Participants highlighted that the digital platform allowed them to organize and access their assignments anytime and anywhere. This flexibility empowered them to manage their learning independently and contributed to their overall sense of autonomy.

All things considered, the digital portfolio assessment positively impacted EFL learners' autonomy, promoting self-direction, goal-setting, self-monitoring, self-reflection, and effective use of feedback. The digital format further enhanced their ability to manage their learning independently, reinforcing their autonomy. In the table below, the themes mentioned above are presented along with their description.

Table 3.

Emerged themes from the impact of portfolio assessment in digital format on EFL learners' autonomy

Theme	Description
Self-Direction	Empowerment to take ownership of learning, make independent decisions, and manage progress.
Goal-Setting and Self-Monitoring	Encouragement to set meaningful goals and regularly track progress, supporting self-directed learning.
Self-Reflection and Self-Evaluation	Opportunities to review and evaluate one's work enhance the ability to make informed learning decisions.
Utilization of Feedback	Use of feedback from teachers and peers to gain insights and guide self-improvement while maintaining autonomy.
Convenience and Accessibility	The digital format's flexibility allows organization and access to assignments anytime, promoting independent learning.
Empowerment and Ownership	Increased sense of being an active agent in one's learning process, fostering greater autonomy.

Discussion

The findings of this study shed light on the significant impact of portfolio assessment in a digital format on EFL learners' critical thinking, growth mindfulness, and autonomy. Through a narrative inquiry approach involving both narratives and interviews, participants

shared their experiences and perspectives, providing valuable insights into the effectiveness of portfolio assessment in enhancing various aspects of language learning.

The results indicate that portfolio assessment fosters the development of critical thinking skills among EFL learners. Participants reported improvements in analytical skills, problem-solving abilities, and higher-order thinking. By critically analyzing their work, identifying strengths and weaknesses, and reflecting on their progress, learners engaged in a thoughtful and reflective approach to language learning. The interactive nature of digital portfolios facilitated deeper engagement with assignments and encouraged learners to explore alternative perspectives, contributing to their analytical prowess.

Portfolio assessment also emerged as a catalyst for promoting growth mindfulness among EFL learners. Participants reported increased self-awareness, attention, and intentionality in their learning process. Through reflection, goal-setting, and self-regulation, learners became more mindful of their learning strategies, strengths, and areas for improvement. The digital format provided a conducive environment for fostering mindfulness by allowing learners to revisit their work, monitor their progress, and make informed decisions about their learning journey.

One of the most significant findings of this study is the positive impact of portfolio assessment on learner autonomy. Participants expressed a greater sense of self-direction, goal-setting, and self-monitoring in their language learning. The autonomy afforded by digital portfolios empowered learners to take ownership of their learning process, make independent decisions, and actively engage with their assignments. Feedback from teachers and peers played a crucial role in supporting learners' autonomy by guiding them while allowing them to make autonomous decisions for improvement.

The findings of this study regarding the impact of portfolio assessment in digital format on EFL learners' critical thinking, growth mindfulness, and autonomy align with and extend existing research in CALL, portfolio assessment, critical thinking, growth mindfulness, and learner autonomy.

Using digital portfolios in language learning resonates with the principles of CALL. As highlighted in Golonka et al. (2014) and Stockwell (2007), CALL environments provide personalized and adaptive learning experiences catering to diverse learner needs. Similarly, electronic or printed portfolio assessment has been recognized as an effective alternative to traditional standardized tests (Kirkpatrick & Gyer, 2012). The benefits of portfolio assessment in promoting learner autonomy and self-regulated learning (Behbahani et al., 2011) align with the findings of this study, where participants reported increased self-awareness and self-directedness in their learning journey.

Developing critical thinking skills through portfolio assessment echoes the emphasis on critical thinking in language learning contexts (Bagheri, 2015). By engaging in reflective practices and analyzing their work, learners enhance their analytical abilities and

metacognitive awareness, as Halpern (2013) and Paul & Elder (2019) discussed. The study's findings reinforce that critical thinking facilitates meaningful interaction with the target language and enhances learners' language proficiency (McKenzie, 1998).

The concept of growth mindfulness intersects with the principles of mindfulness in language learning. As defined by Bodhi (2000) and Kabat-Zinn (2023), mindfulness involves attentively observing the present moment without judgment. The findings of this study indicate that portfolio assessment fosters growth mindfulness by promoting self-awareness, attention, and intentionality in the learning process. These outcomes align with previous research highlighting the benefits of mindfulness in promoting well-being and reducing stress (Bernay, 2014; Kerr et al., 2017).

Promoting learner autonomy through portfolio assessment in digital format aligns with the principles of autonomy in language learning (Deci & Ryan, 2000; Ryan & Deci, 2017). Learner autonomy, as emphasized in SDT, refers to behavior aligned with individuals' authentic beliefs and values. The study's findings underscore the role of digital portfolios in empowering learners to take ownership of their learning journey, make informed decisions, and engage in self-regulated learning practices, as discussed by Liu (2012) and Ushioda (1996, 2013).

The study's implications for language teachers, syllabus designers, materials developers, and policymakers are wide-ranging, offering valuable insights into integrating digital portfolio assessment in EFL education.

For language teachers, the study suggests the integration of digital portfolios into teaching practices to cultivate critical thinking, growth mindfulness, and learner autonomy among EFL learners. Teachers can guide portfolio creation, reflection prompts, and feedback mechanisms to effectively support students in leveraging digital portfolios. By facilitating reflective practices within portfolio assessment, teachers can foster metacognitive awareness and empower learners to take ownership of their language learning journey. Additionally, recognizing EFL learners' diverse needs and learning styles, teachers can use digital portfolios to offer personalized and adaptive learning experiences, thereby creating inclusive and engaging language learning environments.

Syllabus designers can incorporate portfolio-based assessment into language curriculum frameworks to promote holistic language learning outcomes. By including digital portfolio tasks aligned with learning objectives, syllabus designers can provide opportunities for learners to develop critical thinking skills, growth mindfulness, and autonomy within the curriculum. Moreover, they can align language learning objectives with sociocultural theories emphasizing social interaction and collaborative learning. By integrating tasks encouraging peer feedback, collaborative projects, and community engagement, syllabus designers can foster authentic language use and intercultural competence among learners.

Materials developers play a crucial role in supporting the implementation of digital portfolio assessment by creating resources, templates, and guidelines for teachers and learners. Providing access to digital tools, instructional videos, and exemplar portfolios can facilitate the adoption of portfolio-based practices in language classrooms. Additionally, materials developers can design digital portfolios that integrate multimedia elements, enhancing learners' creativity, presentation skills, and digital literacy while promoting critical thinking.

Policymakers can support the integration of digital portfolio assessment in language education through various initiatives. They can allocate resources for teacher training and professional development programs focused on digital portfolio assessment, ensuring educators have the necessary skills and competencies. Policymakers can also advocate for developing technological infrastructure and digital resources to support portfolio assessment in language education, ensuring equitable access for all learners. Furthermore, they can include portfolio assessment as a recommended practice in language curriculum standards and assessment frameworks, recognizing its value for fostering critical thinking, growth mindfulness, and learner autonomy in EFL contexts.

Conclusion

To conclude, this study has provided valuable insights into the impact of digital portfolio assessment on EFL learners' critical thinking, growth mindfulness, and autonomy. The findings underscore the potential of digital portfolios as a versatile tool for promoting holistic language learning outcomes and empowering learners in their language learning journey. Through the narratives and interviews conducted in this study, it has become evident that digital portfolio assessment facilitates the development of critical thinking skills among EFL learners. Participants reported enhanced analytical, problem-solving, and higher-order thinking skills due to engaging with digital portfolios. The reflective nature of portfolio assessment encouraged learners to critically analyze their work, evaluate their progress, and consider alternative perspectives, contributing to a deeper and more thoughtful approach to language learning.

Furthermore, digital portfolio assessment promoted growth mindfulness among EFL learners. Participants described increased self-awareness, attention, and intentionality in their language learning experiences. The portfolio format allowed learners to reflect on their learning journey set meaningful goals, and monitor their progress over time. By fostering mindfulness, digital portfolios empower learners to engage more deeply with their learning process and cultivate a sense of purposeful engagement.

Additionally, digital portfolio assessment fostered learner autonomy in EFL education. Participants reported increased self-direction, goal-setting, and self-monitoring skills, allowing them to take ownership of their learning journey. The flexibility and

accessibility of digital portfolios enable learners to manage their learning independently, make informed decisions, and actively engage with their language learning experiences.

On the whole, the findings of this study highlight the multifaceted benefits of digital portfolio assessment in EFL education. By promoting critical thinking, growth mindfulness, and learner autonomy, digital portfolios offer a promising approach to enhancing language learning outcomes and empowering learners in their language learning journey. As educators, syllabus designers, materials developers, and policymakers consider the implications of these findings, they can leverage digital portfolio assessment to create inclusive, engaging, and learner-centered language learning environments. By embracing digital portfolios as a pedagogical tool, stakeholders in EFL education can support learners in developing the skills, attitudes, and competencies needed to thrive in today's globalized world.

Despite the promising findings, this study has several limitations. The relatively small sample size, limited to a specific geographic region, restricts the generalizability of the results. Future studies could benefit from larger and more diverse samples. The reliance on qualitative data introduces subjective biases, as participants' self-reported experiences might not fully capture the complexities of their learning processes. Incorporating quantitative measures could provide a more comprehensive assessment.

Additionally, the short duration of the study limits the understanding of long-term effects; thus, longitudinal studies are needed to examine sustained impacts on critical thinking, mindfulness, and autonomy. Furthermore, the study did not address potential technological challenges and digital literacy issues, which could affect the effective use of digital portfolios. Future research should explore these aspects and provide strategies to support learners with varying digital proficiency levels. To build on these findings, future research should consider larger and more diverse samples, employ mixed-methods approaches, implement longitudinal studies, explore the role of digital literacy, and conduct comparative studies to examine the effectiveness of digital portfolios relative to other assessment methods.

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