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## The Effects of E-portfolio, Paper-based and Essay-writing assessments on Iranian EFL Learners' Motivation and Autonomy

Hossein Rezadoust Siah Khaleh Sar <sup>a,\*</sup>, Masoud Khalili Sabet <sup>a</sup>, Amir Mahdavi Zafarghandi <sup>a</sup>, Jaleh Hassaskhah <sup>a</sup>

<sup>a</sup> *University of Guilan, Iran*

### ABSTRACT

This study aimed to compare the impact of e-portfolios on the motivation and autonomy of English as a Foreign Language (EFL) learners. Ninety intermediate learners were selected from 120 volunteers at a Tehran Language Institute. They were divided into three groups: two experimental groups using e-portfolios and the other using paper-based portfolios, and a control group. Pre-intervention autonomy and motivation were measured using the Motivated Strategies for Learning Questionnaire (MSLQ) and Learner Autonomy Questionnaire (LAQ). A 42-session intervention involving e-portfolios, paper-based portfolios, and standard assessment methods was conducted. The results showed a positive impact of e-portfolios, including self- and peer-assessment, on learners' motivation and autonomy, while paper-based portfolio annotations also yielded positive results. These findings are valuable for researchers, educators, and learners in the language education sector.

**Keywords:** assessment; e-portfolio; motivation; autonomy; paper-based portfolio

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\* Corresponding author: University of Guilan, Rasht, Iran

Email address: [hosseinrezadoust63@gmail.com](mailto:hosseinrezadoust63@gmail.com)

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## 1. Introduction

In recent years, Iran's English for Non-Native Speakers instruction has transitioned from essay-writing to alternative assessment practices, addressing the complexities of language acquisition and addressing diverse learner needs, as traditional assessments often rely on standardized tests and memorization (Fathi et al., 2019). As another option, alternative assessment focuses on holistic approaches that emphasize continuous feedback, self-assessment, and peer evaluation, aiming to foster learners' motivation, autonomy, and language proficiency (Sadeghi & Abolfazli Khonbi, 2015).

Motivation is a critical factor influencing language learning success, particularly in the Iranian context, where socio-cultural elements play a substantial role (Dörnyei, 2001). Iranian EFL learners often face external motivators like academic advancement or career opportunities, but intrinsic motivation from meaningful assessment practices is crucial for sustained engagement and improved outcomes (Monib et al., 2020). Research indicates that when learners are involved in alternative assessment processes, they are more likely to take control of their educational path, leading to heightened motivation and deeper language engagement (Larsari et al., 2023).

Furthermore, autonomy in language learning is particularly relevant in the Iranian educational context, where traditional pedagogical approaches often limit learners' agency (Kashefian-Naeeni & Kouhpeyma, 2020). Alternative assessment practices encourage learners to set personal goals, consider their development, and actively participate in independent learning, promoting autonomy (Kharroubi & ElMediouni, 2024). This shift not only empowers learners but also prepares them for real-world communications in English, enhancing their language proficiency.

In the present study, the main focus is on e-portfolios as an alternative assessment. Recent research highlights the significance of e-portfolios in second language (L2) education, supporting their usefulness in promoting learner autonomy, self-regulated learning, social awareness, and metacognitive skills (Lam, 2023). E-portfolios facilitate the revision of works-in-progress and have garnered positive experiences from L2 teachers using diverse formats (Karami et al., 2019). Despite their educational benefits, e-portfolios remain controversial in traditional classroom settings, where language skills are often taught and assessed through this medium (Cepik & Yastibas, 2015). Some points about the controversies are assessment validity, time and effort, and standardization issues. These controversies highlight the need for careful implementation and clear guidelines when integrating e-portfolios into language education. Balancing technology use with effective pedagogy is the key to maximizing the benefits while addressing the challenges.

Meanwhile, evidence shows that students generally hold favorable attitudes toward e-portfolios, particularly regarding their writing process (Yastibas & Yastibas, 2015) and in speaking courses, where they are viewed as helpful assessment tools (Kusuma & Waluyo, 2023). However, the usefulness of e-portfolios and paper-based portfolios regarding learners' motivation and autonomy still needs to be explored, which could offer a deeper insight into their effectiveness. Additionally, research by Ciesielkiewicz et al. (2024) underscores that using e-portfolios can enhance metacognitive skills, equipping learners to be more strategic in acquiring a foreign language. The current study focuses on the effects of these two types of portfolios on Iranian EFL learners' motivation and autonomy.

In this vein, and regarding the above-mentioned explanations, this study aims to respond to the following research questions:

RQ1. Are there any significant differences among the effects of e-portfolio assessment, paper-based portfolio assessment, and essay-writing assessment conditions on Iranian EFL learners' motivation?

RQ2. Are there any significant differences among the effects of e-portfolio assessment, paper-based portfolio assessment, and essay-writing assessment conditions on Iranian EFL learners' Autonomy?

## 2. Literature Review

### 2.1. Background and Features of e-portfolios

#### 2.1.1. E-portfolios

An electronic portfolio, also known as an e-portfolio or digital portfolio, is a collection of digital artifacts that showcase an individual's achievements, skills, experiences, and capabilities, often incorporating multimedia elements like texts, images, videos, and documents (Farrel, 2020). E-portfolios are digital tools used for academic, professional, or personal purposes, enabling evaluation of various language skills such as reading, writing, speaking, and listening through online platforms or software applications, promoting digital literacy.

Language students can significantly benefit from the use of e-portfolios in various ways. Firstly, e-portfolios tend to be more engaging and less stressful compared to traditional exams. This engaging format has the potential to inspire students to immerse themselves more deeply in their learning. Additionally, since learners are not subjected to the immediate pressure of evaluation, e-portfolios can help reduce the anxiety often associated with testing (Firoozi et al., 2019). This non-judgmental environment allows students more time to reflect on and refine their work, providing valuable opportunities for enhancement. However, it's worth noting that many student e-portfolios are still assessed summatively (Neigert, 2024).

Scholars suggest e-portfolios can motivate learners, promote autonomy, and authentically assess skills, but caution should be exercised in their implementation, as they should be thoughtfully integrated with other assessment methods (Chang & Kabilan, 2024).

Supporting this perspective, Van Nguyen and Habók (2021) found that EFL learners who engaged with e-portfolios displayed increased motivation to learn English and demonstrated notable improvements in their productive skills compared to their peers who did not participate in this form of assessment. Similarly, Wang and Jeffrey (2017) reported that Chinese EFL learners involved in an e-portfolio program were not only more autonomous in their learning journey but also achieved higher scores on standardized English proficiency tests than those who did not engage with e-portfolios.

In sum, while e-portfolios present numerous advantages for language learners, their use should be approached with care and in conjunction with varied assessment strategies to optimize learning outcomes.

#### 2.1.2. Features of e-Portfolios

E-portfolios are innovative learning and assessment tools with multimedia integration, allowing users to combine text, images, audio, and video, enhancing their effectiveness and catering to

various learning styles by presenting work in a dynamic way (Akbari & Erfani, 2018). Additionally, e-portfolios promote reflective learning; students are encouraged to assess their progress and articulate their learning journey, which cultivates critical thinking and deepens their understanding of accomplishments (Cepik & Yastibas, 2015).

E-portfolios are personalized, showcasing unique skills, experiences, and interests, fostering a sense of ownership and pride in one's work. They are accessible from any location with internet connectivity, allowing learners to share their portfolios with peers and potential employers, enhancing networking opportunities (Torres & McKinley, 2023). Furthermore, many e-portfolio platforms facilitate collaboration among students and instructors, allowing for peer feedback that can improve learning outcomes and foster community (Hanukaev, 2023).

E-portfolios enable continuous assessment by providing a continuous record of student learning, enabling learners to track their development and adjust strategies as needed. They can also be aligned with specific educational outcomes, ensuring artifacts reflect targeted competencies, thereby enhancing learning outcomes (Keshmiri & Mehrparvar, 2023). The flexibility in evaluation criteria enables educators to adapt assessments to diverse learning objectives, allowing for more authentic evaluations of student skills and achievements (Mahmoodi-Nasrabadi, et al., 2024). Overall, e-portfolios are a learning-oriented tool for enhancing motivation and providing a comprehensive view of a learner's skills.

## ***2.2. Current research about e-Portfolios***

Recent studies have increasingly focused on the impact of e-portfolios on language learning, revealing a range of positive outcomes that enhance learners' skills and motivation. Farahian, et al. (2021) conducted a study targeting EFL learners, which demonstrated significant improvements in writing proficiency through the implementation of e-portfolios. Their findings underscore the potential of digital portfolios to facilitate reflective practice and self-assessment, both crucial for language acquisition.

Similarly, Le et al. (2023) investigated the attitudes of motivated second language (L2) learners towards e-portfolios. Their research indicated that participants held favorable views of e-portfolios, suggesting that such tools can enhance learner engagement and ownership of the language learning process. This aligns with findings from Cepik and Yastibas (2015), who noted that e-portfolios played a crucial role in improving speaking skills among Turkish EFL learners, thereby highlighting the multifaceted nature of language development facilitated by these digital platforms.

Additionally, Yastibas and Yastibas (2015) posited that e-portfolios foster self-regulated learning among L2 learners. Their work indicates that the structured nature of e-portfolios encourages learners to set goals, monitor their progress, and reflect on their learning journey, contributing to greater autonomy. This theme of self-direction is further supported by Akbari and Erfani (2018), who compared the efficacy of e-portfolios with essay-writing assessment methods. Their findings demonstrated that e-portfolios not only improved writing skills but also presented a more holistic approach to language assessment.

Further reinforcing these findings, Aghazadeh and Soleimani (2020) explored the impact of e-portfolios on writing performance among Iranian EFL learners, concluding that the integration of e-portfolios led to notable enhancements in writing proficiency. Ngui et al. (2022) similarly highlighted the effectiveness of e-portfolios in developing writing skills among Malaysian undergraduates. Their research emphasizes the adaptability of e-portfolios across diverse educational contexts and learner demographics.

Moreover, the studies by Pourdana and Tavassoli (2022) corroborated the positive influences of e-portfolios on various dimensions of writing skills. Their investigation sheds light on the potential of e-portfolios to not only enhance specific skills but also cultivate a more integrated approach to language learning.

Collectively, these studies advocate for the adoption of e-portfolios as a valuable pedagogical tool in language education. They suggest benefits such as increased learner motivation, enhanced autonomy, and improvements in productive language skills. However, despite the encouraging outcomes, there remains a significant need for further research. Future studies should focus on the long-term effects of e-portfolios on language learning and explore optimal strategies for their implementation in classroom settings, ensuring that these digital tools are used to their fullest potential in promoting effective language acquisition.

### ***2.3. Research on e-portfolios concerning learner motivation and autonomy***

#### ***2.3.1. E-portfolios and Autonomy***

Nowadays, learner autonomy is widely recognized as a crucial aspect of language learning, with significant efforts dedicated to fostering it globally. This emphasis on autonomy aligns with a shift towards empowering learners to make choices about what and how they learn, while also encouraging them to take responsibility for their own learning journey (Basri, 2023).

Learning autonomy encompasses the capability to take control of one's own learning journey, involving detachment, critical reflection, decision-making, and independent initiative. A key aspect of autonomy is the learners' active involvement in planning, monitoring, and assessing their progress, setting goals, and seizing learning opportunities (Woodinm et al., 2022). Apart from ability and action, being conscious of one's choices in learning and the awareness of progress is crucial in the autonomous learning process. This consciousness is essential for making informed decisions about what and how to learn, as well as for selecting suitable strategies for learning effectively (Ozer & Yukselir, 2023).

In essence, an autonomous learner proactively engages in their own learning process, taking an active stance in tackling tasks rather than passively responding to a teacher's instructions. This means that the autonomous learner is not simply a recipient of information but actively drives their learning experiences through self-motivated interactions with the environment, leading to a deeper understanding and acquisition of knowledge (Ludwig & Tassinari, 2023).

The study by Wang & He (2020) found that Chinese EFL learners who participated in an e-portfolio were more autonomous learners than those who didn't. The study found that learners who participated in the assessment were more likely to establish personal learning objectives, select appropriate resources and activities, and track their own advancement. This suggests that e-portfolios can positively impact learner autonomy in language learning.

Previous research has explored the effects of e-portfolios on student performance. To provide context for the current study, several relevant studies are reviewed. For instance, Kiffer et al.'s (2021) literature review on the use and effectiveness of e-portfolios did not address their role in fostering autonomy among university students; however, it emphasized that integrating e-portfolios should be a long-term endeavor within academic programs rather than a supplementary assessment. "This may require a reevaluation and redesign of existing course structures" (Kiffer et al., 2021, p. 19). Furthermore, the review pointed out the importance of clearly defining the type of e-portfolio, its objectives, and intended audience for successful implementation. In a different study, Safari and Koosha (2016) noted a lack of robust empirical evidence to support the adoption of e-portfolio

strategies. Yang and Wong (2024) similarly remarked that only 18 of 118 reviewed articles provided data on learning outcomes or related aspects like autonomy and reflective practice. Additionally, Namaziandost et al. (2020) identified instructional scaffolding and peer feedback as essential elements for enhancing learning autonomy and reflection within e-portfolio frameworks. "The authors stressed the importance of carefully considering pedagogical intentions, organizational context, and instructional environments to effectively manage the e-portfolio process in order to promote reflection and learning" (Namaziandost et al., 2020, p. 1733).

Segaran and Hasim (2021) suggest that e-portfolios can improve self-directed learning skills. They suggest that this is most effective when faculty training includes supervising self-directed learning, the e-portfolio is fully integrated into the educational process, teachers regularly mentor students, scaffolding is used to boost student motivation, and the portfolio includes essential components of self-directed learning theories. They also suggest that e-portfolios can promote learner autonomy, but further research is needed to investigate their effects in the Iranian context and identify the best ways to implement them in the classroom.

### *2.3.2. E-portfolios and Motivation*

Motivation has long been recognized as a key factor in the journey of acquiring a second language. Researchers like Dörnyei (2009) highlight the important role motivation plays in shaping learners' engagement, effort, and persistence in their language studies. E-portfolio assessment emphasizes motivation as it promotes self-directed learning and personalized reflection, aligning with theories like intrinsic motivation, integrative orientation, and autonomy, which are crucial in fostering learners' desire to master a new language.

Encouraging motivation in an e-portfolio framework can lead to better self-directed learning skills and improved performance outcomes (Al-Adwan et al., 2022; Valizadeh, 2022). Dörnyei's (2009) research on motivation in second language acquisition offers important perspectives on various types of motivation that learners might exhibit. Intrinsic motivation, which arises from a learner's genuine interest and enjoyment in the learning process, is particularly valuable in this context. E-portfolios enable learners to select and showcase their language-learning projects, fostering engagement in activities for their own sake and increasing the likelihood of perseverance and effort in their language endeavors.

Conversely, extrinsic motivation, driven by external rewards or grades, may not significantly enhance long-term dedication to learning a language, especially when it comes to the reflective and self-assessment components of e-portfolios. Self-determination theory, presented by Ryan and Deci (2021), underscores the importance of autonomy and psychological need satisfaction for enhancing motivation. E-portfolios provide learners with greater autonomy and control over their language-learning activities, offering them the freedom to make choices about how to present their work. When learners feel empowered within this assessment context and when their psychological needs are adequately met, they are more likely to maintain motivation over time.

Understanding e-portfolio assessments is crucial for educators and researchers to create effective learning environments. By leveraging motivational aspects, educators can deepen engagement with language learning, leading to more successful outcomes for learners.

E-portfolios can enhance motivation and create optimal learning environments by providing learners with relevant and meaningful materials. They allow students to showcase their progress and achievements, fostering ownership of their learning journey. Teachers and researchers can integrate effective strategies centered around e-portfolios (Yousefi & Mahmoodi, 2022).

Collaborative e-portfolio projects can foster a supportive and inclusive environment for students, allowing them to engage with peers in diverse language communities. Technology, like social media platforms, can facilitate authentic language use, boosting learner motivation and creating dynamic, personalized showcases of their work (Bui & Nguyen, 2024).

Meanwhile, a significant body of research indicates that e-portfolios highlight students' scholastic accomplishments within a subject area (Azarfam et al., 2018). Research has shown that e-portfolio evaluations yield more feedback to teachers and students than traditional evaluation methods do. Additionally, e-portfolios help students take ownership of their education, keep them more engaged in the process, and improve communication between the teacher, parent, and student. The majority of the research was done as experimental investigations. Instead of focusing on lifelong learning skills, research was largely done at the college level and concentrated on fundamental abilities (reading, writing, speaking), thinking skills, and personal traits (association, socializing, responsibility). Few studies, according to Douglas et al. (2019), have looked at the elements that influence students' motivation to use e-portfolios.

In a study involving undergraduate students, Meletiadou (2021) found that using an e-portfolio boosts students' motivation for writing and education. Douglas et al. (2019) highlighted that, in contrast to previous research, e-portfolios had no impact on students' willingness to learn. According to Ayaz and Gök (2023), an e-portfolio encourages reflective learning, makes information transfer easier, and engages students who don't participate as much in the course. In their study, Chowdhury and Badawy (2023) came to the conclusion that reflective thinking and motivation are positively impacted when an e-portfolio is used by employees in production and service firms. Chang et al. (2018) conducted a research study revealing that in a study involving sophomore high school students, there were notable increases in the students' ability to regulate themselves. In a study involving undergraduate language education students, Barrot (2021) discovered that the use of an e-portfolio integrated with Facebook positively impacts students' language development. Learners can use portfolio assessment to help analyze themselves and even their teachers (Beckers et al., 2019).

E-portfolios are increasingly used in teaching and evaluation processes worldwide, but there are still gaps in literature on their effectiveness. Most studies target undergraduate students, but not much research has been conducted on intermediate proficiency levels. In Iran, studies on e-portfolios in classrooms are rare. However, many studies have investigated their effect on motivation in language learning, with one finding that Iranian EFL learners who participated in e-portfolios were more motivated to learn English than those who did not (Biglari et al., 2021). Another study found that Chinese EFL learners who participated in an e-portfolio were more satisfied with their language learning experience than learners who did not participate in the assessment (Wang & He, 2020). These studies suggest that e-portfolio can have a positive effect on learner motivation. However, more research is needed to investigate the long-term effects of e-portfolios on motivation and to identify the best ways to implement e-portfolios in the classroom.

Research indicates that e-portfolios can significantly enhance student motivation by fostering a sense of ownership and engagement in the learning process. A study by Kwok (2011) found that students who used e-portfolios reported increased motivation to learn, as they could visualize their progress and reflect on their achievements. This reflection process promotes an intrinsic motivation to pursue further knowledge and skills (Zhang & Tur, 2022).

E-portfolios have been linked to enhanced self-regulation and goal-setting, which are crucial facets of motivation. A study by Teich et al. (2024) demonstrated that students utilizing e-portfolios showed improved self-regulated learning strategies. This, in turn, promoted higher levels of motivation, as students were able to set personalized goals and monitor their own progress. The

engaging qualities of electronic portfolios foster active participation and allow students to adapt their learning strategies based on feedback and self-reflection (Ngui et al., 2022). Meanwhile, feedback mechanisms inherent in e-portfolios further contribute to motivation. According to a study by Klenowski (2013), the ability to receive and incorporate feedback from peers and instructors through e-portfolios significantly boosts student motivation. Students felt more supported in their learning endeavors, leading to a greater willingness to engage with course material.

E-portfolios allow for a personalized learning experience, which is critical for maintaining motivation. Research by Beckers et al. (2019) indicates that when students can tailor their e-portfolios to reflect personal interests and career goals, their intrinsic motivation increases. This personalization makes the learning process more relevant and engaging.

This study aims to explore the impact of e-portfolios, paper-based portfolios, and essay-writing assessments on Iranian EFL learners' motivation and autonomy. It aims to understand how different assessment methods can enhance student engagement and self-directed learning. The findings will contribute to a better understanding of how e-portfolios can be effectively used in classrooms, providing valuable insights for educators on how they can foster learner motivation and autonomy in the EFL context.

### **3. Method**

#### ***3.1. Participants***

In this quantitative study, we focused on a sample of 90 language learners, selected from a larger population using a random-start systematic sampling method. This approach involved first creating an ordered list of learners based on their performance on a standardized version of the PET test. By selecting participants at regular intervals from this list, we ensured that each learner had an equal chance of being included in the study. The participants were aged 18 to 25 years.

To further explain the reasoning behind our sampling strategy, we decided to use a performance-based ranking method, which allows for a more representative sample within this demographic and reduces any biases related to participant selection. Moreover, to ensure the random assignment of these participants into experimental and control groups was free from selection bias, a computer-generated randomization process was utilized. This method assigned random numbers to each participant, dividing them into two groups of equal size without any predictable pattern, thus maintaining the integrity of the randomization process.

It is important to note that the participants selected for this study were not aware of the specific interventions being tested at the time of recruitment. This approach helped further reduce bias and ensured that their responses were not influenced by their knowledge of the study's conditions. By keeping the interventions undisclosed, researchers could gather more authentic data, as participants would not alter their behavior based on knowledge of the study conditions. This approach helps maintain the integrity of the study's findings and allows for a more objective assessment of the interventions' impact.



### 3.2. Instruments

The required information was collected utilizing the following tools:

#### 3.2.1. Preliminary English Test (PET)

In order to homogenize students at the intermediate level, a version of the PET was administered as the first instrument of the present study. This assessment comprises four sections: Reading comprehension (35 questions), Writing skill (7 questions), Listening comprehension (25 questions), and Speaking skills. Each component constitutes 25% of the final course grade. Subtotal of scores in each section is then added together to give an overall index. The total time for the test was 120 minutes. All the above sections of the test were delivered consecutively. The writing component of the evaluation utilized the generic marking methods for writing provided by Cambridge. Scoring followed specific standards as shown in the 0-6 rating scale for the PET.

#### 3.2.2. Learner Autonomy Questionnaire (LAQ)

The second instrument used in this study was a learner autonomy questionnaire. The second instrument utilized in this study was a learner autonomy questionnaire, referred to as the Learner Autonomy Questionnaire (LAQ), developed by Zhang and Li (2004). LAQ is a standardized instrument consisting of 21 items designed to assess the level of autonomy exhibited by learners in their language learning endeavors. This survey instrument is partitioned into three distinct subscales. The assessment tool utilized in this study is a questionnaire, wherein participants are required to indicate their level of agreement with each item using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The total score for the LAQ is determined by combining the scores assigned to each of the 21 items. A positive correlation exists between a higher score on the LAQ and a higher amount of learner autonomy. Research findings have demonstrated that the LAQ possesses favorable psychometric properties, indicating its reliability and validity as an assessment tool for evaluating learner autonomy. The utilization of this approach has been employed in numerous research studies, e.g., Mohammadi Zenouzagh, et al., (2023) and Van Nguyen and Habók, (2021), to examine the effects of various instructional techniques and interventions on the development of learner autonomy. LAQ can be employed to evaluate the level of learners' autonomy at various time intervals, including the beginning and end of a semester or course. Furthermore, this tool can be utilized to assess and contrast the level of autonomy exhibited by distinct groups of learners, such as those belonging to varying grade levels or participating in different instructional programs. According to Zhang and Li (2004), the questionnaire is deemed to possess a high degree of content validity through expert evaluation. Moreover, it demonstrates an acceptable level of internal reliability, with a value of 0.7. Zhang and Li (2004) indicated that the measurement device exhibited a consistency estimate of 0.80 using Cronbach's Alpha formula. Additionally, the researchers highlighted the questionnaire's high validity, asserting a validity of 0.84 for the learner autonomy questionnaire through Cronbach's alpha coefficient analysis.

In the present study, LAQ was rigorously evaluated for its reliability and validity specific to the context of the study and its participants. To assess the internal consistency of the questionnaire, we employed Cronbach's Alpha, which yielded a reliability coefficient of 0.82, indicating a high level of reliability for our specific sample. This aligns with findings from the above-mentioned previous studies, reinforcing the instrument's robustness in measuring learner autonomy.

Furthermore, the content validity was assessed through expert evaluations from a panel of educators familiar with learner autonomy principles. The feedback provided by these experts

affirmed the relevance and clarity of the questionnaire items, ensuring they accurately reflect the construct of learner autonomy. Based on this evaluation, we affirm that the LAQ is a suitable instrument for our research objectives.

Additionally, we utilized factor analysis to further validate the instrument's construct validity within our specific context, confirming that the items grouped according to the theorized dimensions of learner autonomy remained intact (Woodrow, 2006). Overall, the LAQ's reliability and validity support its suitability as an effective tool for measuring learner autonomy in our study, enabling a comprehensive analysis of the impact of different instructional strategies on learner autonomy development.

### *3.2.3. Motivated Strategies for Learning Questionnaire (MSLQ)*

The third instrument was the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al., 1993). It was used to assess learners' motivation. The MSLQ is an instrument that has demonstrated reliability and validity and has been utilized in several research investigations. It is a valuable tool for evaluating students' motivation levels at various intervals, including the commencement and culmination of a semester or course. Moreover, it can be utilized to assess and contrast the motivational factors and learning approaches employed by distinct groups of students, such as those belonging to varying grade levels or participating in diverse teaching programs.

The motivation scales include the subsequent components:

- The intrinsic value pertains to a metric that assesses the level of students' engagement and satisfaction with the teaching experience.
- The extrinsic value pertains to the quantification of students' inclination to engage in learning activities to attain external purposes, such as favorable academic results or lucrative employment prospects.
- The task value scale assesses students' perception of the significance and utility of the learning task.

According to Pintrich et al. (1993), the MSLQ demonstrates strong reliability and validity in assessing students' motivation and learning strategies. Through confirmatory factor analyses, the scales within the questionnaire were found to be conceptually sound and empirically supported. The MSLQ comprises six motivational subscales and nine learning strategy subscales that offer a comprehensive framework for evaluating student motivation and use of learning strategies in educational settings. The motivational scales measure distinct factors of learner motivation, while the learning strategy scales encompass various cognitive, metacognitive, and resource management strategies that can be reliably differentiated. Furthermore, both the motivational and learning strategy scales were found to have reasonable predictive validity, showing positive relationships with academic performance, as expected. In the context of the present study involving Iranian EFL learners, the reliability and validity of the MSLQ were rigorously evaluated. Previous research, including the work by Pintrich et al. (1993), has established the MSLQ as a robust instrument with strong psychometric properties. In our adaptation of the MSLQ, we employed several methods to ensure its reliability and validity within the specific cultural and educational context of Iranian EFL learners.

Below is the elaborated report with regard to the reliability and validity of these instruments in the context of our research study:

1. Reliability: The internal consistency of the MSLQ was assessed, yielding a Cronbach's Alpha of 0.88 for the overall scale. The Motivation subscale exhibited a Cronbach's Alpha of 0.85, while the Learning Strategies subscale showed a Cronbach's Alpha of 0.82, demonstrating good reliability across all measures. Additionally, the test-retest reliability coefficient over a two-week period was found to be  $r = 0.90$ , indicating strong stability in the results over time.

2. Validity: The construct validity of the measure was assessed through Confirmatory Factor Analysis (CFA), which yielded good fit indices: Chi-square ( $\chi^2$ ) = 245.32 with 120 degrees of freedom (df), and a p-value of less than 0.001. The Comparative Fit Index (CFI) was 0.93, and the Root Mean Square Error of Approximation (RMSEA) was 0.06, indicating an acceptable model fit. Additionally, content validity was established through expert review, where over 80% of the items were recognized as culturally relevant and appropriate. Finally, criterion-related validity was demonstrated by a positive correlation with academic performance, reflected in a correlation coefficient ( $r$ ) of 0.65 with GPA.

These results demonstrate that the adapted MSLQ is reliable and valid for use with Iranian EFL learners, affirming its relevance and effectiveness in capturing the motivational and strategic learning characteristics within this specific context.

The MSLQ and LAQ were adapted for Iranian EFL learners, considering cultural and contextual factors. Language sensitivity and cultural sensitivity were crucial, as the language was translated into Persian and cultural nuances were considered. The questions were tailored to align with the Iranian educational system, respecting cultural values and gender and social norms. The adapted questionnaires were chosen based on their robust psychometric properties and relevance to the examined constructs. The MSLQ provides a comprehensive assessment of learners' motivations and strategic approaches to learning, while the LAQ measures learner autonomy, a critical factor in educational settings, especially among EFL learners. Revisions or adaptations were considered, but were deemed unnecessary as the instruments were already established tools with proven validity and reliability in diverse educational environments.

### ***3.3. Research Design***

In our research, we opted for a purely quantitative design for several reasons.

Firstly, the study's primary objective was to establish measurable relationships between different portfolio assessment methods and their impact on learners' motivation and autonomy. A quantitative approach allows for collecting numerical data that can be statistically analyzed to identify trends, comparisons, and causations, providing clear and objective results.

Secondly, our study included a relatively large sample size, which enhances the potential for quantitative analysis. This may contribute to the findings applying to a broader population of Iranian EFL learners. By utilizing standardized measures and instruments, we aimed for consistency in data collection, thereby minimizing the biases that can sometimes arise from subjective interpretations, a concern often noted in qualitative research.

Additionally, while qualitative methods offer rich, descriptive insights, they often require extensive time and resources for data collection and analysis; in the context of our study, which aimed to assess specific behavioral outcomes associated with different portfolio methods, a quantitative approach was deemed more efficient and appropriate. It facilitated a focus on hypothesis testing

and statistical validation, ensuring robustness in our findings.

Finally, we acknowledge the value of qualitative insights; however, our research focused on quantifiable outcomes tied to motivation and autonomy as influenced by the portfolio methods. Consequently, the decision to exclude qualitative components was based on a precise alignment with our research aims and the need for empirical evidence to support the effectiveness of each assessment type.

In summary, a quantitative design was selected in this study to ensure precision, applicability, and the ability to draw conclusive relationships from the data collected, thereby addressing our research objectives effectively.

### ***3.4. Data Collection Procedure***

The participants in this study have been chosen in the first stage. Initially, 120 intermediate students took the PET to standardize their English proficiency. The primary study participants were selected from the 120 students whose scores fell within one standard deviation above or below the mean. The 90 chosen individuals were randomly divided into two experimental groups, each with 30 students and one control group.

In order to collect the data needed for the study, motivation and autonomy questionnaires were administered to research participants in the three groups during the pretest phase of the study.

Then, the intervention phase of the study lasted 14 weeks and included 42 training sessions, focusing on e-portfolio and paper-based portfolio assessments. The e-portfolio intervention consisted of two main training sessions, designed to provide students with essential skills and ongoing support throughout the process:

1. Initial Training Session: This session aimed to familiarize students with the e-portfolio platform. Students learned how to upload artefacts, write reflections, and set effective goals. Importantly, this session is excluded from the 14-week intervention period.
2. Ongoing Updates and Interactions: Following the initial training, students were instructed to regularly update their e-portfolios, either weekly or bi-weekly, fostering continuous reflection on their language learning journey. Peer interaction was encouraged, allowing students to view and provide feedback on each other's e-portfolios, thus creating a collaborative and supportive learning environment.

#### ***3.4.1. Components of the E-Portfolio Intervention***

The e-portfolio intervention included several key components aimed at enhancing students' learning experiences:

1. Artefacts: Students were encouraged to upload various artefacts, such as essays, presentations, recordings, and projects, showcasing their language skills and progress.
2. Reflections: Learners were required to regularly reflect on their learning experiences, successes, challenges, and goals, which were documented within the e-portfolio.
3. Feedback: Constructive feedback was provided by both teachers and peers on the artefacts and reflections shared in the e-portfolio, promoting a culture of self-improvement.
4. Assessment Criteria: The e-portfolios were assessed based on the quality of artefacts, reflections, and improvements in language proficiency, motivation, and autonomy.

### *3.4.2. Intervention Phase Overview*

The intervention phase spanned 14 training weeks, consisting of 42 structured sessions during which the experimental groups engaged in both e-portfolio and paper-based portfolio assessments.

### *3.4.3. E-Portfolio Implementation*

The study aimed to introduce students to e-portfolio systems and language learning pedagogy, teaching them how to upload artifacts, write reflective pieces, and set learning goals. The initial training sessions were conducted by experienced instructors familiar with e-portfolio systems and language learning pedagogy. The curriculum focused on language skills, including reading, writing, listening, and speaking. Students were required to update their e-portfolios regularly, either weekly or bi-weekly, to foster continuous reflection and documentation of their learning progress.

The intervention emphasized peer interaction by allowing students to view and provide feedback on each other's e-portfolios, promoting mutual support and deeper learning through shared insights. E-portfolios were assessed based on clearly defined criteria, including the quality of artifacts, depth of reflections, and observable improvements in language proficiency, motivation, and autonomy. Grading was conducted by trained instructors using a standardized rubric to ensure consistent evaluation across all submissions. Peer assessments were also incorporated to enhance reliability.

The intervention program aimed to promote an effective and engaging learning experience for students by encouraging them to upload diverse artifacts such as essays, presentations, audio recordings, and project documentation. They were also required to maintain regular reflections on their educational experiences, discussing successes, challenges faced, and future goals within their e-portfolios. Constructive feedback was provided by both instructors and peers on the artifacts and reflections shared in the e-portfolio, fostering a culture of self-improvement and critical thinking.

To enhance the reliability of assessments, inter-rater reliability measures were implemented, including joint training sessions for instructors and periodic calibration sessions where instructors reviewed and discussed sample portfolios to standardize grading expectations. In the post-test phase, all three groups' motivation level and autonomy level were assessed using recognized measurement tools, the MSLQ and the LAQ. Participants were required to communicate solely in English during class time, which aims to immerse learners in the target language, which is hypothesized to enhance language acquisition.

Ethical considerations were carefully addressed to ensure the integrity of the research process and the welfare of all participants involved. Informed consent was obtained from all participants prior to their involvement, and all data collected during the study were anonymized to protect the identities of participants. The random division of learners into the e-portfolio, paper-based portfolio, and control groups was designed to eliminate the influence of confounding variables on the results.

### *3.5. Data Analysis*

To address the research questions, we comprehensively analyzed the quantitative data using descriptive and inferential statistics. The independent variables (IVs) in this study included e-portfolio, paper-based portfolio, and essay-writing assessment, while the dependent variables (DVs) were motivation and autonomy. Descriptive statistics were employed to compute the mean and standard deviation for each group, providing a clear overview of the central tendency and variability of the data.

For the inferential analysis, we performed two separate Analysis of Covariance (ANCOVA) tests: one assessing the impact of the independent variables on motivation and the other on autonomy. Before conducting the ANCOVAs, we ensured that the assumptions of normality, homogeneity of variances, and linearity were met through preliminary tests such as the Shapiro-Wilk and Levene's tests.

The dependent variable was analyzed in each ANCOVA while controlling for selected covariates to account for potential confounding effects. The analysis was computed using SPSS version 26, and the covariates were entered into the model alongside the independent variables. Effect sizes were also calculated to assess the magnitude of differences observed.

Post-hoc tests were conducted to further explore and adjust for significant findings. All statistical tests were conducted with a significance level set at  $p < 0.05$ . This rigorous approach ensured robust results and allowed us to draw meaningful conclusions regarding the impact of the independent variables on the dependent outcomes of motivation and autonomy.

## 4. Results and Discussion

### 4.1. Results

Analyzing the posttest motivation for the three groups while considering the matched pretest motivation score, the one-way analysis of covariance was used. To perform the ANCOVA, we checked the study assumptions which are important to address before undertaking this test. First, we checked the degree of linearity by plotting the pretest and posttest motivation scores and observed no violations of the assumption. Then, we tested for the interaction of the independent variable and covariate and found it to be non-significant ( $F(2, 84) = 1.87, p > .05$ ) meaning the assumption of homogeneity of regression slope was met. Finally, we tested the homogeneity of variances using Levene's Test of Equality of Variances, which is also equal to the requirement ( $F(2, 89) = 3.275, p > .05$ ). After these assumption checks, we moved comparing the means of the motivation pretest and posttest scores among the three groups in Table 1.

Table 1  
*Descriptive Statistics for Posttest of Motivation by Group with Pretest*

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Paper-based portfolio	37.694 <sup>a</sup>	.743	36.217	39.171
e-portfolio	43.608 <sup>a</sup>	.741	42.135	45.081
Control	32.398 <sup>a</sup>	.742	30.922	33.874

a. Covariates appearing in the model are evaluated at the following values: Pretest = 32.52.

Table 1 displays the means of the three groups in posttest of motivation after accounting pretest scores. The findings on the posttest of motivation yielded a mean of 43.60 for e-portfolio group with a SE of .743 was significantly higher than other groups. The approximately ranked cognitive ( $M = 15.63, SE = .469$ ) was succeeded by the paper-based portfolio ( $M = 37.69, SE = .741$ ) and control ( $M = 32.39, SE = .742$ ) groups. This in a way gives more credit to our work, however, just as a side note, when doing ANCOVA in IBL SPSS 26, it uses Standard Error (SE), not the Standard Deviation (SD). As these outcomes are adjusted for the influence of the pretest, as the dispenser of table 1 shows, the variability cannot be calculated manually. In all other cases, the calculation is very straightforward;  $SD = \sqrt{N \times SE}$ . Main analysis results for One-Way ANCOVA are presented in the Table 2. The analyses of variance ( $F(2, 86) = 57.22, p < .05$ , partial  $\eta^2 = .571$ ) revealed significant

difference in the means of the three groups' posttest motivation score and the pretests scores were used as covariate. As a result, the first null-hypothesis was rejected.

Table 2  
*Tests of Between-Subjects Effects for Posttest of Motivation by Groups with Pretest*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta
PreMotivation	1611.116	1	1611.116	97.801	.000	.532	
Group	1885.296	2	942.648	57.222	.000	.571	
Error	1416.718	86	16.473				
Total	134305.000	90					

The One-Way ANCOVA was significant for the following variables as shown in table 2 All the above significant outcomes of One-Way ANCOVA were proceeded with post hoc comparison tests shown in table 3. Consequently, based on these findings and the means presented in Table 1, the following recommendations can be made:

A: The e-portfolio group achieved a higher post motivational test score ( $M = 43.60$ ) than the control group ( $M = 32.39$ ) with a mean difference of 11.21 ( $p < 0.05$ ) after pretest score had been partied out.

B: The e-portfolio group ( $M = 43.60$ ) performed better than the paper-based portfolio group ( $M = 37.69$ ) on posttest of motivation after removing the variations in pretest score ( $MD = 5.91$ ,  $p < .05$ ).

Table 3  
*Post-Hoc Comparison Tests for Posttest of Motivation by Groups with Pretest*

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
e-portfolio	Paper-based portfolio	5.914*	1.050	.000	3.350	8.478
	Control	11.210*	1.048	.000	8.650	13.770
Paper-based portfolio	Control	5.296*	1.053	.000	2.726	7.866

\*. The mean difference is significant at the .05 level.

C: The paper-based portfolio group ( $M = 37.69$ ) also performed better than the control group ( $M = 32.39$ ) on posttest of motivation when pretest was used as covariant ( $MD = 5.29$ ,  $p < .05$ ). The posttest of motivation is illustrated in figure 1 where the mean scores have been adjusted for the pretest.

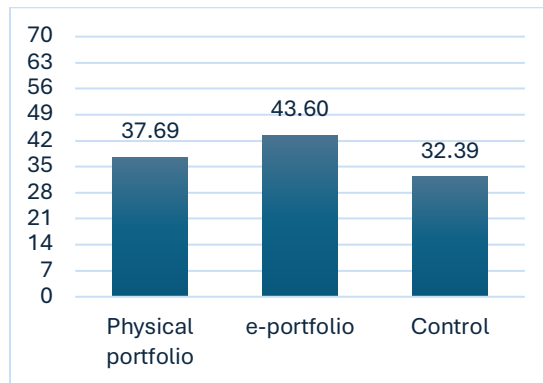


Figure 1. Means On Posttest of Motivation by Groups with Pretest

The second null hypothesis was that there were no significant interactions between e-portfolio assessment, paper-based portfolio assessment and non-portfolio forms of assessment on the autonomy of Iranian EFL students. Before analyzing the findings, the assumption of One-Way ANCOVA stated as follows:

A One-Way ANCOVA necessitates a linear correlation between the pretest and posttest measures of autonomy. The linearity test yielded significant results ( $F(1, 89) = 34.75, p < .05$ , eta squared = .627, indicating a large effect size) as shown in Table 4. This finding leads to the rejection of the null hypothesis, confirming that there is indeed a linear relationship between the posttest and pretest measures of autonomy.

Table 4  
*Testing Assumption of Linearity of Relationship between Pretest and Posttest of Autonomy*

			Sum of Squares	df	Mean Square	F	Sig.
PostAutonomy * PreAutonomy	Between Groups	(Combined)	24800.672	38	652.649	2.254	.003
		Linearity	10061.765	1	10061.765	34.751	.000
		Deviation from Linearity	14738.907	37	398.349	1.376	.144
	Within Groups		14766.450	51	289.538		
	Total		39567.122	89			
Eta Squared			.627				

Moreover, in a One-Way ANCOVA analysis, it is essential to establish that linear relationships exist between the pretest and posttest scores of autonomy across the three groups, known as homogeneity of regression slopes (refer to Table 5). The interaction effect between the covariate (pretest scores) and the independent variable was not significant ( $F(2, 84) = .016, p > .05$ , Partial eta squared = .001, indicating a weak effect size). This finding supports the assumption that the relationships between pretest and posttest autonomy scores were linear for all three groups, meaning that such linear relationships held true across both the experimental and control groups.

Table 5  
*Testing Homogeneity of Regression Slopes Posttest of Autonomy by Groups with Pretest*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group	591.229	2	295.615	2.326	.104	.052
PreAutonomy	9113.492	1	9113.492	71.716	.000	.461
Group *	4.097	2	2.049	.016	.984	.001
PreAutonomy						
Error	10674.444	84	127.077			
Total	1015713.000	90				

One-Way ANCOVA assumes that the variances among the groups are homogeneous. The Levene's test results ( $F(2, 87) = 1.58, p > .05$ ) depicted in Table 6 indicated that the assumption of equal variances was upheld for the autonomy posttest after accounting for the pretest effects.

Table 6  
*Levene's Test of Homogeneity of Variances for Posttest of Autonomy by Groups with Pretest*

F	df1	df2	Sig.
1.586	2	87	.211

Evaluates the null hypothesis asserting that the variance of errors in the dependent variable is consistent across different groups.



Table 7 presents the mean scores on the autonomy posttest for three groups, adjusted for pretest scores. The e-portfolio group achieved the highest mean score ( $M = 122.77$ ,  $SE = 2.30$ ), followed by the paper-based portfolio group ( $M = 102.15$ ,  $SE = 2.30$ ), while the control group had the lowest mean score ( $M = 87.50$ ,  $SE = 2.30$ ).

Table 7  
*Descriptive Statistics for Posttest of Autonomy by Group with Pretest*

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Paper-based portfolio	102.153 <sup>a</sup>	2.035	98.107	106.200
e-portfolio	122.772 <sup>a</sup>	2.034	118.728	126.816
Control	87.508 <sup>a</sup>	2.035	83.462	91.554

The covariates included in the model are assessed at the following value: Pretest = 75.13.

The findings from One-Way ANCOVA, as summarized in Table 8, indicated statistically significant differences among the three groups' mean scores on the posttest of autonomy after adjusting for pretest scores. The results showed  $F(2, 86) = 75.81$ ,  $p < .05$ , with a partial  $\eta^2$  of .638, indicating a large effect size. Consequently, the second null hypothesis was rejected.

Table 8  
*Tests of Between-Subjects Effects for Posttest of Autonomy by Groups with Pretest*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta
PreAutonomy	10493.492	1	10493.492	84.510	.000	.496	
Group	18826.816	2	9413.408	75.811	.000	.638	
Error	10678.541	86	124.169				
Total	1015713.000	90					

A: The results from the One-Way ANCOVA (Table 8) led to post-hoc comparison tests (Table 9). From these findings and the means presented in Table 9, we can conclude that the e-portfolio group ( $M = 122.77$ ) significantly excelled compared to the control group ( $M = 87.50$ ) on the posttest measuring autonomy, after adjusting for the pretest scores ( $MD = 35.26$ ,  $p < .05$ ).

Table 9  
*Post-Hoc Comparison Tests for Posttest of Autonomy by Groups with Pretest*

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
e-portfolio	Paper-based portfolio	20.619 <sup>*</sup>	2.878	.000	13.592	27.646
	Control	35.264 <sup>*</sup>	2.878	.000	28.238	42.291
Paper-based portfolio	Control	14.645 <sup>*</sup>	2.880	.000	7.614	21.677

\*. The mean difference is significant at the .05 level.

B: The group utilizing e-portfolios ( $M = 122.77$ ) showed a notable improvement over the group using paper-based portfolios ( $M = 102.15$ ) on the posttest measuring autonomy, after accounting for pretest scores ( $MD = 20.61$ ,  $p < .05$ ).

C: In addition, the paper-based portfolio group ( $M = 102.15$ ) outperformed the control group ( $M = 87.50$ ) on the posttest of autonomy, again after adjusting for pretest results ( $MD = 14.65$ ,  $p < .05$ ). Figure 2 illustrates the average scores on the autonomy posttest after controlling for pretest effects.

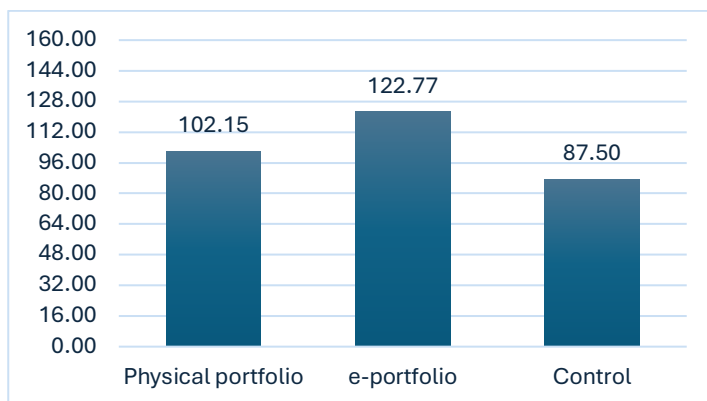


Figure 2. Means On Posttest of Autonomy by Groups with Pretest

#### 4.2. Discussion

The first research question examined whether e-portfolios significantly impacted the motivation levels of Iranian intermediate EFL learners. The results indicated that the experimental groups showed greater motivation than the control group. Additionally, the second research question focused on the influence of e-portfolios on the learners' autonomy in their studies. The findings revealed a statistically significant difference in autonomy among the three groups after the interventions. These results suggest that those in the experimental groups, who were instructed to use e-portfolios and paper-based portfolios, demonstrated notable improvements in motivation and autonomy. Thus, integrating e-portfolios fostered a supportive learning environment that enhanced participants' motivation and autonomy, which contributed to their positive perceptions of e-portfolios.

After adjusting for pretest scores, the data analysis indicated notable differences in mean scores regarding motivation on the posttest among the e-portfolio, paper-based portfolio, and essay-writing assessment groups. Post-hoc comparison tests revealed that the e-portfolio group scored significantly higher than both the paper-based portfolio and essay-writing assessment groups. Additionally, the e-portfolio assessment group outperformed the paper-based portfolio assessment group on the posttest of motivation. The study indicates that e-portfolio assessment significantly boosts learner motivation more than paper-based portfolio assessments and essay-writing assessment approaches. This aligns with previous research, such as Bui & Nguyen (2024) and Segaran and Hasim (2021), which highlighted the beneficial impact of alternative assessment types on enhancing motivation among EFL learners in L2 classrooms. Their findings suggested that alternative assessment improves students' linguistic skills and encourages greater motivation and engagement in writing activities. The results align with those of González-Mujico (2020) and Ahmed AbdelAl Ibrahim and Rakhshani (2024), who discovered that using e-portfolios enhances the language skills of EFL students by boosting their motivation.

The study's findings align with those of Farahian et al. (2021), showing that e-portfolios effectively enhanced participants' writing skills by the end of the intervention. Consistent with Le et al. (2023), the results indicate that participants who exhibited higher levels of self-determination, motivation, and enjoyment in L2 learning tended to have favorable attitudes toward e-portfolios. Additionally,

the research agrees with Cepik and Yastibas (2015), who found that participants viewed e-portfolios positively due to their utility in improving writing skills.

The results also support Yastibas and Yastibas (2015), highlighting that e-portfolios can enhance self-regulated learning among L2 learners. Furthermore, the findings bolster those of Akbari and Erfani (2018), who suggested that paper-based and e-portfolios were more effective than essay-writing assessments for developing writing skills. Moreover, the study corroborates the work of Ngui et al. (2022), who demonstrated that e-portfolios are an effective assessment tool for L2 learning. Finally, the outcomes reinforce the insights of Pourdana and Tavassoli (2022) and align with Biglari et al. (2021), who found that portfolio assessment notably improved writing skills and autonomy among Iranian EFL learners. Their research revealed that e-portfolios positively impacted foundational skills such as grammar and word choice and more advanced abilities like organization and development.

Moreover, the current research indicated that e-portfolio assessments were more effective than paper-based portfolios in enhancing the motivation of EFL learners. This finding aligns with the findings of Rejeki (2020) and Crocker (2018), which suggested that learners gain more significant advantages from various forms of informal assessment.

Similarly, the current results regarding the advantages of e-portfolios over paper-based portfolios consistent with the findings from Yang and Wong's (2024) research, which examined the support e-portfolios provide for adult English learners. Their study indicated that students utilizing e-portfolios demonstrated a better understanding of article usage than those who did not, implying that e-portfolios tailored to learners' needs could be more effective than conventional assessment methods.

Additional evidence for this conclusion can be found in the work of Batson (2018), who identified e-portfolios as a more influential and efficient assessment method. Likewise, a study by Rezai et al. (2022) examined the impact of e-portfolios compared to traditional assessments on EFL learners' vocabulary, motivation, and attitudes, supporting the current research findings. They noted that the effectiveness of e-portfolio assessments varies depending on the skill being evaluated. However, they concluded that e-portfolios were more effective than other methods for ensuring the accurate use of grammatical structures and vocabulary.

The findings of the current research align with earlier studies that highlight the more significant impact of e-portfolio assessments in boosting motivation among EFL learners compared to traditional paper-based portfolios. It can be suggested that e-portfolios foster a more transparent and more welcoming environment for learners to communicate with others and share their emotions (Huang, et al., 2011).

The main emphasis of this research was on e-portfolios, can act as a sort of alternative assessment and are acknowledged as an alternate evaluation technique (Farrel, 2020). This suggests that e-portfolios engage learners effectively, helping them feel more comfortable while revising their work. In contrast, traditional assessments often heighten anxiety and stress associated with making mistakes. Conversely, Lam (2023) suggests that e-portfolio assessment fosters a cooperative and engaging setting. Learners actively use their interlanguage knowledge to refine their non-target language output in this setting. As a result, they receive more explicit feedback, guiding them toward producing correct language forms.

The advantages of e-portfolios compared to traditional paper-based portfolios in boosting student motivation can be linked to the unique features of e-portfolio assessments, which align with individual learners' needs (Douglas et al. (2019). This approach corresponds to the learners' Zone

of Proximal Development (ZPD), distinguishing between their current capabilities and growth potential.

Conversely, this finding contrasts with earlier research, such as the studies by McMullin and Barlow (2021), who examined e-portfolios in language courses and noted some challenges in engagement and motivation among learners. Matra and Rukmini (2017) observed that e-portfolios were not viewed as the influential informal assessment tool intended by the provider, and learners reported some challenges in its implementation.

The contrasting findings between the present study and earlier research (Matra & Rukmini, 2017; McMullin and Barlow, 2021) regarding the use of e-portfolios in language courses can be critically analyzed and discussed through the following lenses:

**1. Educational Setting:** This study was conducted in a supportive environment rich in resources and training. This contrasts with earlier studies that operated under resource limitations, potentially enhancing engagement levels.

**2. Participant Demographics:** The demographics of our learners, such as age and prior experience with e-portfolios, likely influenced their motivation and engagement, possibly leading to more positive outcomes.

**3. Technological Advances:** The evolution of e-portfolio technology, with improved interfaces and enhanced features, may have contributed to a better user experience compared to past tools.

**4. Changes in Educational Philosophy:** A growing emphasis on digital literacy may predispose learners to view e-portfolios more favorably as part of their educational process.

**5. Assessment Purpose and Clarity:** Our study highlighted the value of e-portfolios as learning tools beyond mere assessment, potentially fostering a more positive perception among learners.

The study suggests that e-portfolios can enhance learning experiences by encouraging EFL learners to use English outside the classroom, leading to more autonomous communication and engagement with the language. This shift in perception may replace the view of language as merely a set of grammatical rules with the understanding that it serves to convey ideas. E-portfolios also allow teachers to track student progress by keeping records of their work, allowing for continuous assessment of improvements over time.

## 5. Conclusion and implications

The study investigated the impact of e-portfolios, paper-based portfolios, and essay-writing assessments on Iranian EFL learners' motivation and autonomy. Results showed that the experimental groups performed better than the control group in motivation and autonomy post-test. E-portfolios helped participants gather, choose, and reflect on their work, fostering self-assessment, independence, and critical thinking skills. (Azarfam et al., 2018; Wang & He, 2020). Consequently, this created a learning atmosphere where participants could significantly boost their motivation, and develop positive attitudes toward using e-portfolios.

This study highlights the considerable promise of e-portfolios as a powerful instrument for boosting motivation and autonomy among Iranian EFL learners. By combining e-portfolios with traditional paper-based portfolios, educators can create an environment that enhances student motivation, promotes self-directed learning, and encourages self-regulation in acquiring language skills (Ryan & Deci, 2021). These digital platforms offer a dynamic way for students to display their language abilities while supporting reflective practices that can lead to more profound learning and personal development.

This quantitative research reveals key aspects of the effectiveness and implementation of e-portfolios within Iranian educational settings. The findings indicate that e-portfolios have significantly increased learners' motivation and autonomy. This increase is due to their interactive and self-guided features, which empower students to take charge of their educational journeys. By showcasing their progress, students feel a sense of pride, which motivates them to engage actively with the content.

Additionally, the study highlights improved feedback mechanisms as a significant advantage. E-portfolios promote continual communication between students and teachers, enabling timely and constructive feedback that enhances the learning experience and strengthens collaborative efforts. As students learn to give and receive feedback, they contribute to a supportive and enriching learning atmosphere.

Furthermore, developing language skills and increased confidence in communication are important results of using e-portfolios. As learners curate and share their work, they enhance essential presentation skills for language acquisition. This leads to more flexibility and convenience in their studies, allowing students to engage with materials whenever and wherever they choose, aligning their learning with personal and professional commitments (Fathi et al., 2019).

Future research should investigate the long-term effects of e-portfolios on student achievement and their ability to enhance educational experiences in various contexts. Additionally, it is important to explore effective methods for incorporating e-portfolios into diverse educational environments, considering the specific challenges and dynamics of different classroom settings.

In summary, this research sets the stage for further investigation into how e-portfolios can transform language assessment and create a more engaging, personalized learning experience for EFL students in Iran and potentially elsewhere. By adopting this innovative approach, educators can better equip students for the demands of a globally interconnected society.

In conclusion, this study emphasizes the transformative potential of e-portfolios in education, highlighting their impact on student motivation, feedback, teamwork, and communication skills. Although challenges persist, the evident benefits of adopting e-portfolios merit ongoing exploration and integration into varied learning environments. By tackling these challenges and leveraging the advantages of e-portfolios, educators can foster a richer, more engaging, and effective educational experience for all learners.

The results of this study suggest several key implications for various stakeholders. Firstly, teacher trainers are encouraged to incorporate modern teaching methods, including e-portfolios, into their training materials to ensure that future educators are well-acquainted with these tools. Secondly, educational policymakers within the Ministry of Education should organize preservice and in-service workshops for EFL teachers. These workshops should focus on familiarizing educators with the principles and procedures of using e-portfolios, equipping them with the necessary knowledge and skills for practical implementation in their classrooms.

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The study emphasizes the need for school principals and language institute owners to improve education quality by incorporating modern educational technologies. This would benefit both EFL teachers and learners, enhancing second language acquisition. EFL teachers should also enhance their professional skills by incorporating innovative teaching methods like e-portfolios in their classrooms (Derakhshan & Ghiasvand, 2022; Larsari et al., 2023).

The study emphasizes the importance of EFL students enhancing their digital literacy skills to effectively utilize emerging technologies, which can enhance their language development through increased exposure to input, enhanced interaction, and more output opportunities.

The study's limitations suggest that future research should be conducted in other regions of Iran, investigate the influence of e-portfolios on psychological factors like motivation and autonomy, and conduct longitudinal studies to assess the long-term effects of e-portfolios on second language acquisition. Additionally, incorporating qualitative methods like interviews and observations in future studies could help better understand how e-portfolios contribute to the success of EFL learners, as the research was conducted at a single private language institute in Tehran, Iran.

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**Hossein Rezadoust Siah Khaleh Sar (Corresponding Author)** is a Ph.D. candidate in Applied Linguistics at University of Guilan in Iran (Rasht) and has published some national and international papers related to Assessment, Positive psychology, Teacher Education and Speaking scopes in the field.

**Masoud Khalili Sabet** is an associate professor at the University of Guilan, Iran, specializing in ESL testing, ESP material development, and English textbook evaluation. He has published and presented research internationally and authored multiple ESP textbooks for university students. His work focuses on enhancing language education through applied research and practical resources.

**Dr. Amir Mahdavi-Zafarghandi**, PhD in SLA (Essex University, 2001), has been a Lecturer in Applied Linguistics at the University of Guilan since 1991. He teaches Research Methods, ESP, and TEFL, supervises MA theses, and has published extensively on SLA, language learning, ESP, and translation studies nationally and internationally.

**Dr. Jaleh Hassaskhah**, a PhD in Applied Linguistics (TEFL), researches higher education and serves on scientific advisory panels. Her work focuses on Instructed SLA, teacher development, Computer-Mediated Instruction, inclusive education, and quality teaching. She has authored numerous articles and books for educators, contributing to national and international scholarship.