

## Research Article

# Contributions of E-Portfolios Assessment to Developing EFL Learners' Vocabulary, Motivation, and Attitudes

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A great deal of studies have explored the effects of electronic-portfolios (e - portfolios) on various measures of language learning, including writing and speaking in English. However, the effects of e-portfolios on vocabulary, motivation, and attitudes of EFL learners have remained unexplored. Thus, this study aimed at disclosing the effects of e-portfolios on Afghani EFL learners' vocabulary, motivation, and attitudes. For this purpose, after homogenizing, a total of 100 EFL male learners were selected and randomly assigned to an experimental group ( $n = 50$ ) and a control group ( $n = 50$ ). Afterward, they went through pretest, interventions, and posttest procedures. The interventions lasted 18 one-hour sessions held twice a week where the experimental group was trained through e-portfolios (Mahara: the electronic portfolio software) and the control group was trained using conventional methods. The collected data were analyzed through running an independent-sample  $t$ -test and calculating mean and percent. Results evidenced that the experimental group outperformed the control group concerning their gains of vocabulary knowledge on the posttest. Additionally, the findings documented that there was a statistically significant difference between the two groups in terms of motivation at the end of the interventions. Furthermore, the findings indicated that the participants had very positive attitudes toward the e-portfolios. The study concludes by offering some implications for relevant stakeholders and opening some windows for further research.

## 1. Introduction

Electronic portfolios have recently received a significant amount of attention in English as a foreign language (EFL) settings and are increasingly being used to assist and encourage learning and teaching processes [1]. They are the standard-bearers of formative assessment, and, as such, they provide a multitude of advantages to formal and informal curricula. E-portfolios are becoming a crucial component of e-learning systems because they have the potential to stimulate more student-centered learning, reflective activities, and tailored styles of learning among students who come from a variety of educational

backgrounds [2, 3]. Consequently, the environment of teaching English as a foreign language in Afghanistan has seen a lengthy period of practices employing conventional language systems, which are primarily centered on the idea of summative evaluation. As noted by Ciesielkiewicz [4], the rapidly expanding desire of the Afghani EFL context for new teaching methods, learning, and assessment calls for a significant shift away from a traditional testing system and toward digital learner portfolios. This shift is necessary because digital learner portfolios have the potential to promote students' autonomy by allowing them to be the supervisors of their virtual learning environment.

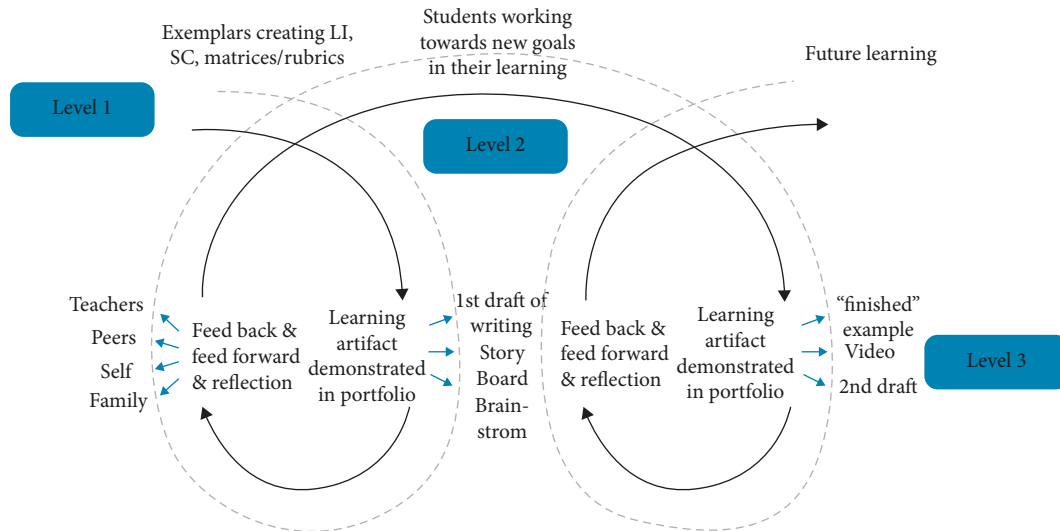


FIGURE 1: E-portfolios and formative assessment adapted from EUfolio [12].

The researchers observed that most of the definitions of e-portfolios contained aspects such as students’ digital artifacts [5–7], digitized collections, and a planned aggregation of digital objects. This was discovered when they evaluated the definitions of e-portfolios [8, 9]. An e-portfolio was described by Lorenzo and Ittelson [10] as “a digital collection of artifacts containing demos, resources, and achievements that reflect a person, organization, or institution.” This may be the most accurate explanation of an e-portfolio (p. 2). E-portfolios are “personalized, Web-based collections of work, reactions to work, and reflections that are used to show critical skills and achievement for a number of settings and time periods,” according to the article’s authors (p. 2). According to what can be gleaned from the available research, there are three primary categories of electronic portfolios. In a similar spirit, Maher and Gerbic [11] concluded that there are three distinct kinds of portfolios: an evaluation portfolio, a showcase portfolio, and a learning portfolio. On the other hand, this research considered the portfolio to be an evaluation instrument that could be utilized to measure the progression of learners’ English language skills over a semester.

Even while the term e-portfolios is often associated with formative assessment, it may also be used for summative evaluation [12]. E-portfolios serve as a repository for student work in this sense [13, 14].

It is possible to use an e-portfolio system in the classroom to improve formative assessment. As a result of the platform’s feedback system, students and teachers can communicate better. As defined by Marshall and Wiliam [15], formative assessment aims to build and nurture learning by collaboratively offering feedback between the instructor and the student. Figure 1 depicts the typical development of a piece of student writing in the e-portfolio assessment platform. Level 1, Level 2, and Level 3 e-portfolio functionalities are all included in this procedure.

The students’ repository (Level 1) allows them to save examples of their work. Using this assignment, students and

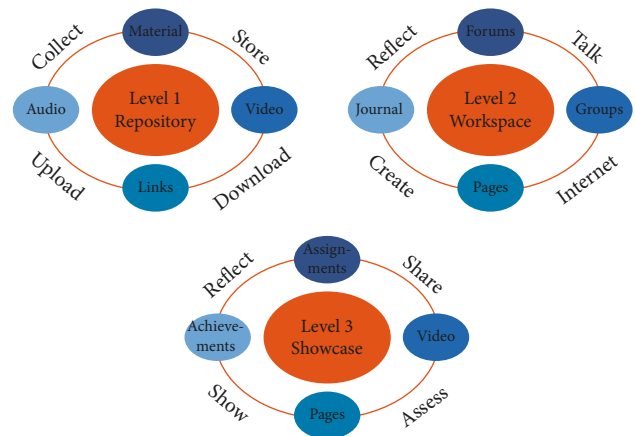


FIGURE 2: E-portfolio implementation guide for policymakers and practitioners adapted from EUfolio [12].

teachers may establish criteria for determining whether or not a piece of work has been deemed successful. Level 2 (student workspace) is where the student is actively involved in the production process and may solicit input from other students, instructors, parents, and self-reflection. Upon completion, the student may demonstrate their understanding of the material at the product stage and present their work at an exhibit (Level 3).

Figure 2 depicts the three primary purposes of e-portfolios concerning the learning process. Additionally, Abrami and Barrett [16] illustrate that the e-portfolio process has three levels: repository, workplace, and display. At the repository level, students can use the privilege provided by their e-portfolio space as electronic storage, where they were deemed to generate and gather artifacts. At the workspace level, students can design, set goals, establish learning practices and engagements chronologically, engage in peer learning, and reflect on their learning development and the artifacts of their peers. The showcase component of an e-portfolio can reveal a student’s proficiencies, capabilities,

accomplishments, and products. The students can edit and choose their artifacts to get involved in showcasing their reflections and accomplishments and contributions and feedback from peers and teachers. Teachers may also use e-portfolios as summative evaluations of the teaching-learning process by looking at the final deliverables at the showcase level.

## 2. Advantages and Disadvantages of E-Portfolios

Different scholars have accounted for different advantages and disadvantages in the literature for e-portfolios. According to Brown [17], there are some outstanding advantages with e-portfolios. First, they can promote ownership, responsibility, and intrinsic motivation. Second, they promote the role of L2 teachers as facilitators to increase the interactions in the classroom. Third, they make L2 learning individualized and acknowledge that each L2 learner is unique. Fourth, they offer tangible evidence of L2 learners' progress and learning. Fifth, they provide L2 learners to revise their previous performances, self-assess their performances, and raise critical thinking. Sixth, they grant opportunities for L2 learners to learn from collaborative works with other peers [18]. Seventh, they allow multiple dimensions of L2 learning to be assessed. Further, Hyland [19] lists some notable advantages with e-portfolios, including *integrity* (i.e., it integrates the goals of a program with those of the curriculum), *validity* (i.e., it is able to reveal a correspondence between the goals and classroom practices), *meaningfulness* (e.g., it shows L2 learners the results of their efforts), *motivating* (i.e., L2 learners can become familiar with different genres), *their process-oriented quality* (i.e., it lets L2 learners revise their drafts), *their coherence* (i.e., it related different drafts to each other), *their flexibility* (i.e., it allows L2 teachers to implement using different assessment practices.), *reflectivity* (i.e., it helps L2 learners reflect on their drafts), and, finally, *their formative* (i.e., it natures in delaying scoring) [20].

Along with these advantages, some disadvantages have been also underscored for e-portfolios. According to Brown and Hudson [21], the implementation of e-portfolios has some disadvantages. The first disadvantage is related to the issues of design decision, logistics, interpretation, validity, and reliability. The second disadvantage is the issue of the reading process. That is, as e-portfolios involve L2 learners to record different performance at different times, the evaluation processes are demanding [22]. The third disadvantage is linked with the issue of scoring procedures. That is, it is not clear if using the holistic scoring of the complicated performances of the L2 learners is appropriate. The last disadvantage is connected with the issue of efficiency. In exact words, it is not clear what L2 learners can gain from using e-portfolios. Additionally, Song and August [23] raised concerns about the issues of practicality, reliability, and validity. Further, as noted by Nelson [24], "portfolios can fail if objectives are not clear, if guidelines are not given to students, if systematic periodic review and feedback are not

present" (p. 129). All in all, it is safe to conclude that the implementation of e-portfolios can bring L2 learning both advantages and disadvantages which are worth considering.

## 3. Related Studies in the Literature

In the literature, a range of studies have studied the effects of e-portfolios on L2 learning. To lay the groundwork for this study, we critically review some of them. In a study, Erice and Ertaş [25] explored the effects of e-portfolios on improving EFL learners' writing skills. Their findings evidenced that the e-portfolios significantly improved the participants' writing skills at the end of the intervention. Additionally, Chye et al. [26] studied the student teachers' perceptions of e-portfolios in L2 learning. They found that the participants who were more motivated and enjoyed L2 learning and teaching had positive attitudes toward e-portfolios. Further, Cepik and Yastibas [27] examined the effects of e-portfolios on improving Turkish EFL learners' speaking skills. They gathered the required data using self-assessment papers and interviews. Their findings revealed that the participants had positive attitude toward the e-portfolios as it was really effective in their writing skills. Besides, Yastibas and Yastibas [14] critically reviewed the literature to document if e-portfolios could lead to the improvement of self-regulated learning of L2 learners. They found that e-portfolios can be used to raise L2 learners' self-regulated learning. Besides, Akbari and Erfani [28] compared the effects of wiki and e-portfolios compared to the conventional methods on developing Iranian EFL learners' writing skill. Their results revealed that both wiki and e-portfolios were more effective in developing the participants' writing skills than the conventional methods. Plus, Aghazadeh and Soleimani [29] surveyed the impact of e-portfolios on cultivating Iranian EFL learners' writing performance in terms of complexity, accuracy, and fluency. Their results evidenced that the experimental group outperformed the control group concerning gains of writing skill on the posttest. Moreover, Ngui et al. [30] inspected the influence of e-portfolios on the development of Malaysian undergraduate students' writing skill. They found that e-portfolios can be used as an effective assessment tool to promote L2 learning. Likewise, Pourdana and Tavassoli [31] recently scrutinized the impacts of e-portfolios on EFL learners' engagement types in narrative and descriptive writings. They uncovered that e-portfolios had positive effects on both lower-level skills such as word choice/grammar, sentence structure, and mechanics and higher-level skills like development and organization. Finally, implementing a mixed-methods design, Pratiwi et al. [32] explored the impact of e-portfolios on EFL learners' foreign language anxiety with respect to the role of gender. They found that the participants' foreign language anxiety significantly decreased at the end of the intervention regardless of their genders. Further, they uncovered that the participants expressed positive attitudes toward the effectiveness of e-portfolios in reducing their anxiety.

As may be implied from the above-reviewed studies, most of them have addressed the effects of e-portfolios on

developing writing skills and speaking skills. In other words, to date, no study has investigated the effects of e-portfolios on improving EFL learners' vocabulary learning and motivation in Afghanistan. Thus, this study is an attempt to bridge the gap by exploring the effects of e-portfolios on Afghani EFL learners' vocabulary learning and motivation. The findings of the study can be of great help for EFL teachers to consider e-portfolios as an alternative approach to substantially cultivate their learners' vocabulary development, significantly raise their motivation, and positively shape their attitudes. The following research questions were put forward to meet these objectives:

- (1) Do e-portfolios lead to any significant improvement in Afghani intermediate EFL learners' vocabulary learning?
- (2) Do e-portfolios significantly affect Afghani intermediate EFL learners' motivation learning?
- (3) What are Afghani intermediate EFL learners' attitudes toward integrating e-portfolios in English learning?

## 4. Method of the Study

*4.1. Research Design.* The researchers used a true-experimental design to conduct this study. In true-experimental design, researchers randomly assign participants to experimental and control groups to control external factors from affecting the findings [33]. Thus, the researchers implemented a true-experimental design in which they homogenized a sample of EFL learners and randomly assigned them to an experimental group ( $n=50$ ) and a control group ( $n=50$ ) to uncover the effects of e-portfolios on vocabulary learning, motivation, and attitudes.

*4.2. Participants.* This study was run at a private language institute in Mazār-i-Sharīf, Afghanistan. Using random sampling, the researchers selected 170 intermediate EFL learners. As noted by Riazi [33], the random sampling method grants an equal opportunity to the individuals in a population to be chosen for a study. The participants were all males and were aged from 17 to 20. Their first language was Persian and they were learning English as a foreign language. The researchers administered the Oxford Quick Placement Test (OQPT) to make the participants homogenized. Based on their test scores, the participants ( $n=100$ ) whose scores fell around the mean score were selected and randomly assigned as an experimental group ( $n=50$ ) and a control group ( $n=50$ ). The participants were attending their English classes for four hours a week and they did not have any opportunity to expose English outside of the language institute. Of particular note is the fact that the researchers recruited an English teacher who held a B.A. in Applied Linguistics and has been teaching English for over ten years. The participants expressed orally their consent to participate in this study and they were allowed to withdraw from the study as they wished. It should be noted that the researchers assured the participants that their performance would

remain confidential and they would be informed about the final results of the study. It should be stressed that the researchers obtained the ethical approval from the local ethics committee at University of Mazār-i-Sharīf.

*4.3. Instruments.* The researchers used some instruments to gain the required data in the current study. The first instrument included the Oxford Quick Placement Test (OQPT). It was administered to homogenize the participants in terms of their general English language proficiency. It is worthy to be noted that the OQPT was designed and developed by Oxford University Press and Cambridge ESOL. It is used for English learners of all levels and ages across the globe. It has two parallel versions: a computer-based version and a paper-pen version. It should be pointed out that the latter version was used in the current study due to its ease of administration and logistical considerations. In fact, the test includes 60 questions in multiple-choice format, taking approximately 60 minutes to be answered; it comprises reading, grammar, and vocabulary. The test has two main parts: The first part (questions 1–40) is taken by all test takers and is aimed at students who are at or below advanced level. The second part (questions 41–60) is taken only by participants who score more than 35 out of 40 on the first. The test is quickly marked out of 40 or 60 using a simple overlay. It is worth noting that, prior to the study, the researchers measured the reliability and validity of OQPT in a pilot study. Concerning reliability, they administered it to 25 EFL learners. The results of internal consistency measured through Cronbach Alpha yielded  $\alpha=0.88$ . Regarding validity, the researchers used experts' judgment strategy. In doing so, they invited two experienced EFL teachers to assess OQPT in terms of face and content validity. They confirmed that it enjoyed the required face and content validity.

The first instrument included two parallel vocabulary tests. The researchers recruited two experienced EFL teachers to design and develop the vocabulary tests based on the contents of Touchstone Book (upper-intermediate level). Each test consisted of 20 multiple-choice items. The students were supposed to read the stems and select the correct choice. The students' scores ranged from 1 to 20 and, for each error, one score was subtracted from 20. It should be noted that the researchers assessed the reliability and validity of the vocabulary tests prior to the main study. In relation to the reliability, they run a pilot study through which they administered them to a sample of 25 intermediate EFL learners at another language private institute. The internal consistency was measured through Cronbach Alpha and the results yielded  $\alpha=0.95$  which was found to be acceptable for the purposes of this study. Regarding the validity, they invited two university professors in Applied Linguistics to measure the face validity and content validity of the vocabulary tests. Though they offered some feedback on the tests with regard to language and contents, they confirmed that they enjoyed the required reliability and validity.

The second instrument was e-portfolio software in the form of Mahara which is available for free online. It has been designed to evaluate students' work around the world. Its

developers made a PHP-based project available to the users; to put it another way, they are expected to execute the project on a server associated with a particular domain. The researchers were able to establish their very own website, which serves as a host for the Mahara electronic portfolio system so that they could make use of the platform. Consequently, Mahara was brought online with the assistance of a web designer, and users were able to access it at <https://folioet.ir>. It is essential to point out that the web designer needs to alter the PHP project. Specific values need to be changed to the original project to make it more appropriate for use in an educational setting. The Mahara system incorporates a mechanism that enables students to participate innovatively in the process of peer-evaluation. This is made possible by the system's inclusion of the Mahara system. The students need to sign up for their very own accounts on the website to be able to access and make use of their e-portfolios. Mahara gave each student their very own individual electronic portfolio, or e-portfolio, in which they were able to maintain online documentation of their accomplishments. Concerning the Mahara platform, the pieces of evidence that students already save on the website were referred to as "assets" and may be only shared with those whom the student chooses. Because the researchers wanted to provide the students the ability to categorize their assignments and create pieces of evidence, they successfully implemented a subgrouping function on the Mahara e-portfolio platform. This allowed the students to do so. Overall, each subgroup was provided with its own named e-portfolio file, consisting of four different core job folders with their respective labels. Students were expected to post their solutions to their assignments to their profiles on the Mahara platform throughout each cohort. Additionally, the completed tasks were evaluated by other students to meet the standards of the peer-correction approach. In addition, the teacher evaluated the uploaded pieces of evidence using his profile on the Mahara platform; to put it another way, teacher correction is also in play for the sake of formative assessment.

The other instrument entailed the Student Motivation Questionnaire (SMQ), designed and validated by Glynn et al. [34]. It was used to measure the participants' motivation in learning English before and after the interventions. It measures five different types of motivation: motivation, self-determination, self-efficacy, career incentive, and grade motivation. It comprises 25 five-point Likert-scale items, ranging from 1 (strongly disagree) to 5 (strongly agree).

The last instrument entailed an attitude questionnaire (AQ) which was designed and developed by the researchers. It was employed to measure the experimental group's attitudes toward using the e-portfolios at the end of the intervention. It consisted of ten Likert-scale items ranging from strongly disagree (1) to strongly agree (5). The researchers went through the available literature and collected the key concepts related to L2 learners' attitudes. Then, they draw an initial draft and write down the items. Afterward, they refined the items and assured if they were appropriate for the purposes of the study.

It should be noted that the researchers gauged the reliability and validity of both questionnaires in a pilot study. For this purpose, they recruited two experts in translation to translate the questionnaires into the learners' mother tongue. Afterward, they administered them to a sample of 25 intermediate EFL learners. The internal consistency of the questionnaires was measured using Cronbach Alpha and the results yielded  $\alpha = 0.86$  for the SMQ and  $\alpha = 0.94$  for the AQ, respectively. For the validity, they used an expert judgments' strategy. That is, they invited two university professors in education to assess if they had required face validity and content validity. Both professors confirmed that they can be used for the present study as they were sufficiently valid.

*4.4. Data Collection Procedure.* The present study was run by taking some steps. At the first step, the researchers homogenized the participants by administering the OQPT and those whose scores fell around the mean score were selected and randomly assigned to an experimental group ( $n = 50$ ) and a control group ( $n = 50$ ). At the second step, they administered the vocabulary pretest and SMQ to measure their vocabulary prior to the interventions. At the fourth stage, the interventions were presented to the groups. They lasted 18 one-hour sessions and were held twice a week. The experimental group used the e-portfolio software called Mahara. It includes a weblog, a résumé generator, and a social networking platform, among its many features. The students were responsible for uploading all of their projects and assignments for the class into a private online repository, where they could then be checked for originality using a software program. At the first session, the teacher introduced Mahara. He explained to the class that it is an open source web application which can be used to create e-portfolios. He added that Mahara can be used to create a collection of reflections and digital artifacts, such as images, documents, resumes, and multimedia. He demonstrated how the learners could use it in practice to learn English in general and vocabulary in particular. From the second session on, the teacher introduced a range of new vocabulary to class. Afterward, the students were provided with some relevant activities. Then, the teacher got them to make some sentences with the intended vocabulary. In other activities, he had the students write a short paragraph with the target vocabulary. Next, the students used Mahara to demonstrate their learning by making some digital documents and sharing them with their peers. After this, the teachers encouraged the students to give feedback on their peers' performances. Based on the given feedback, the students were urged to detect their problems and rectify them. At the final phase, the teacher pushed the students to save their collections and got back to them from time to time to reflect on their learning and progress. For the control group, the classes were run using a conventional method. That is, the teacher read out the intended words and gave their equivalent Persian meanings. Then, the students were given some fill-in-the-blank and matching activities. At the last step, the vocabulary posttest, SMQ, and AQ were administered to

TABLE 1: Results of descriptive statistics for the pretest vocabulary and posttest vocabulary.

	Groups	N	Mean	Std. deviation	Std. error mean
Pretest vocabulary	Experimental group	50	11.62	1.22	0.17
	Control group	50	11.54	1.16	0.16
Posttest vocabulary	Experimental group	50	16.75	1.57	0.22
	Control group	50	11.73	1.36	0.19

TABLE 2: Results of independent-samples *t*-test comparing the pretest vocabulary and posttest vocabulary scores.

		Levene's test for equality of variances		<i>t</i> -test for equality of means						
		<i>F</i>	Sig.	<i>t</i>	df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference	
									Lower	Upper
Pretest	Equal variances assumed	0.00	0.94	0.33	98	0.73	0.08	0.23	-0.39	0.55
	Equal variances not assumed			0.33	97.76	0.73	0.08000	0.23	-0.39	0.55
Posttest	Equal variances assumed	2.59	0.11	17.03	98	0.00	5.02000	0.29	4.43	5.60
	Equal variances not assumed			17.03	96.02	0.00	5.02	0.29	4.43	5.60

gauge the participants' vocabulary knowledge, motivation, and attitudes after the interventions.

**4.5. Data Analysis Procedures.** The collected data were analyzed using SPSS, version 23. The researchers, at first, calculated the basic descriptive statistics, including mean (*M*) and standard deviation (*SD*). Next, they ran inferential statistics, including an independent-sample *t*-test. In other words, they used two independent-sample *t*-tests to reveal if there was any statistically significant difference between the experimental group and the control group considering the gains of vocabulary knowledge and learning motivation. Additionally, they measured the participants' attitudes words using e-portfolios through the calculation of the mean of the participants' responses.

## 5. Results

As noted above, the first research question explored if e-portfolios led to significant improvement in the Afghani intermediate EFL learners' vocabulary learning. The researchers employed two independent-sample *t*-tests to answer this research question. However, prior to running the parametric tests, the researchers checked the normality assumption. For this purpose, they used a Kolmogorov-Smirnov test. Since the results indicated that the values of the obtained significance for the pretest vocabulary (0 = 0.18) and for the posttest vocabulary (0.24) were greater than the significance level (0.05), the researchers concluded that the collected data were normally distributed and they could use the independent-sample *t*-test. The results of the descriptive statistics are presented in Table 1.

As reported in Table 1, the mean (*M*) score on the vocabulary pretest for the experimental group was 11.62, whereas the *M* score for control was 11.54. On the vocabulary posttest, the experimental group earned the *M* score of 16.75, while the control group earned the *M* score of 11.73. To see if there was a statistically significant difference between the *M* scores of the participants on the pretest vocabulary and the posttest vocabulary, the researchers considered the *p* value in the Sig. (2-tailed) column of the *t*-test table below.

As presented in Table 2, since the value of Sig 0.72 is larger than the significance level of 0.05, it was concluded that there was not a statistically significant difference between the experimental group and the control group concerning the gains of vocabulary knowledge on the pretest. However, as reported in Table 2, since the value of Sig 0.00 is less than the significance level of 0.05, it was concluded that there was a statistically significant difference between the experimental group and the control group concerning gains of vocabulary knowledge on the posttest. It means that, due to the effects of the e-portfolios, the experimental group's scores significantly improved at the end of the interventions.

As noted above, the second research question explored if e-portfolios significantly affected the Afghani intermediate EFL learners' motivation learning. The researchers used two independent-sample *t*-tests to answer this research question. However, at first, they checked if normality assumption was met. For this purpose, they ran a Kolmogorov-Smirnov test. Since the results indicated that the values of the obtained significance level for the pretest motivation (0.35) and for the posttest motivation (0.13) were greater than the significance level (0.05), they assured that the normality assumption was

TABLE 3: Results of descriptive statistics for the pretest motivation and posttest motivation.

	Groups	N	Mean	Std. deviation	Std. error mean
Pretest motivation	Experimental group	50	33.58	5.59	0.79
	Control group	50	31.86	6.59	0.93
Posttest motivation	Experimental group	50	58.96	9.61	1.35
	Control group	50	32.30	6.31	0.89

TABLE 4: Results of independent-samples *t*-test comparing the pretest motivation and posttest motivation scores.

		Levene's test for equality of variances		<i>t</i> -test for equality of means						
		<i>F</i>	Sig.	<i>t</i>	df	Sig. (2-tailed)	Mean difference	Std. error difference	95% confidence interval of the difference	
									Lower	Upper
Pretest motivation	Equal variances assumed	2.03	0.15	1.40	98	0.16	1.72	1.22	-0.70	4.14
	Equal variances not assumed			1.40	95.44	0.16	1.72	1.22	-0.70	4.14
Posttest motivation	Equal variances assumed	0.10	0.74	16.39	98	0.00	26.66	1.62	23.43	29.88
	Equal variances not assumed			16.39	84.64	0.00	26.66	1.62	23.42	29.89

TABLE 5: Results of the participants' attitudes toward using e-portfolios.

	Mean	Standard deviation	Percent
1. I like the idea of utilizing portfolio assessment rather than conventional evaluation.	4.40	1.12	95.12
2. Portfolio assessment is worthwhile.	4.24	1.05	92.15
3. Portfolio assessment should be the type of assessment utilized in many of the teacher education courses.	4.50	1.25	96.45
4. Portfolio assessment in the classroom helps students establish an appropriate career path.	4.62	1.32	97.00
5. I believe that developing a portfolio makes students more reflective.	4.38	1.07	94.40
6. Portfolio assessment motivates me to succeed.	4.80	0.98	99.02
7. I would like to use portfolio assessment when i become a teacher.	4.78	0.95	98.23
8. I think portfolio assessment makes learning easy.	4.56	1.16	93.14
9. I believe that students are empowered by using portfolio assessment.	4.42	1.52	97.15
10. Students have a greater opportunity to express what they have learned in portfolio assessment.	4.34	1.33	91.25

met well. They could use the independent-sample *t*-test. The results of the descriptive statistics are reported in Table 1.

As given in Table 3, the *M* score on the pretest motivation for the experimental group was 33.58, whereas the *M* score for control was 31.86. On the posttest motivation, the experimental group earned the *M* score of 58.96, while the control group earned the *M* score of 32.30. To see if there was a statistically significant difference between the *M* scores of the participants on the pretest motivation and the posttest motivation, the researchers considered the *p* value in the Sig. (2-tailed) column of the *t*-test table below.

As presented in Table 4, since the value of Sig 0.15 was larger than the significance level of 0.05, it was concluded that there was not a statistically significant difference between the experimental group and the control group concerning the gains of motivation learning on the pretest. However, as reported in Table 4, since the value of Sig 0.00 is

less than the significance level of 0.05, it was concluded that there was a statistically significant difference between the experimental group and the control group concerning gains of motivation on the posttest. That is, the experimental group's motivation learning significantly improved due to the positive effects of the e-portfolios.

As mentioned above, the third research question surveyed the Afghani intermediate EFL learners' attitudes toward integrating e-portfolios in English learning. The results are presented in Table 5.

As reported in Table 5, around 95 percent of the participants liked the idea of utilizing portfolio assessment rather than conventional evaluation. Around 92 percent of the participants agreed that portfolio assessment is worthwhile. Around 96 percent of the participants opined that portfolio assessment should be the type of assessment utilized in many of the teacher education courses. Around 97

percent of the respondents believed that portfolio assessment in the classroom helps students establish an appropriate career path. Around 94 percent of the participants believed that developing a portfolio makes students more reflective. Around 99 percent of the students maintained that portfolio assessment motivates them to succeed. Around 98 percent of the students asserted that they would like to use portfolio assessment when they become teachers. Around 93 percent of the participants thought that portfolio assessment makes learning easy. Around 97 percent of the respondents believed that they are empowered by using portfolio assessment, and around 91 percent of the respondents believed that they had a greater opportunity to express what they have learned in portfolio assessment. Of particular note is the fact that item 6 received the biggest value and item 10 earned the smallest value. Finally, the participants asserted that they had very positive attitudes toward using e-portfolios.

## 6. Discussion

As mentioned above, the first research question explored if the e-portfolios led to any significant improvement in Afghani intermediate EFL learners' vocabulary learning. The results evidenced that the experimental group outperformed the control group concerning their gains of vocabulary knowledge. Additionally, the second research question inspected whether e-portfolios significantly affected Afghani intermediate EFL learners' motivation toward learning. The findings documented that there was a statistically significant difference between the two groups in terms of motivation at the end of the interventions. Furthermore, the third research question examined the Afghani intermediate EFL learners' attitudes toward integrating e-portfolios in English learning. Based on the results, it may be argued that the experimental group who were trained based on the principles and procedures of e-portfolios could develop substantially their vocabulary knowledge, raise significantly motivation learning, and shape positive attitudes toward e-portfolios. In other words, aligning with the results of the study, it may be argued that the implementation of e-portfolios using Mahara created a fruitful learning environment in which the participants could develop their vocabulary knowledge. Accordingly, as the students could promote their vocabulary knowledge by handling the new key words, their motivation might have been raised. This, in turn, may have acted as a major source for the participants to shape positive attitudes toward e-portfolios.

The results of the study are consistent with those of Erice and Ertaş [25], revealing that e-portfolios significantly improved their participants' writing skills at the end of the intervention. Additionally, the findings of the study are in line with those of Chye et al. [26]. They found that the participants who were more self-determined, motivated, and enjoyed L2 learning and teaching had positive attitudes toward e-portfolios. Further, the findings of the study are congruent with those of Cepik and Yastibas [27], revealing that the participants had positive attitude toward the e-

portfolios as it was really useful in their writing skills. Besides, the results of the study lend support to Yastibas and Yastibas [14] who found that e-portfolios could be used to raise L2 learners' self-regulated learning. Furthermore, the results of the study lend credence to those of Akbari and Erfani [28], indicating that both wiki and e-portfolios were more effective in developing the participants' writing skills than the conventional methods. Moreover, the findings of the study are in line with those of Ngui et al. [30]. They discovered that e-portfolios could be used as an effective assessment tool to promote L2 learning. Finally, the results of the study advocated the findings of Pourdana and Tavassoli [31]. In addition, the results of the study lend credence to the findings of Biglari et al. [35]. They found that the portfolio assessment significantly improved Iranian EFL learners' writing skills and autonomy. They uncovered that e-portfolios had positive effects on both lower-level skills such as word choice/grammar, sentence structure, and mechanics and higher-level skills like development and organization.

To recap the discussion, in line with the findings of the study, it may be argued that e-portfolios created beneficial learning activities because they might have inspired the EFL learners to use English in contexts outside of the classroom. In other words, the students were required to employ English communicatively and autonomously because they were expected to share their tasks in a manner that they have independently designed and organized [36]. The use of language in such a manner may have caused the EFL learners' perspectives about e-portfolios to be shifted positively. Another line of discussion for the findings, as Gonzalez [37] stresses, can be ascribed to view that the EFL learners might replace the notion that the language is a classroom topic and a collection of linguistic rules with the view that the language is used to transmit ideas [36, 38]. Moreover, based on the results of the study, e-portfolios might allow the teacher to maintain tabs on the students' progress by storing copies of their efforts. As a result, he could monitor their progress and determine whether or not they have made any improvements.

Another line of discussion for the findings of the study may be attributed to the view that the e-portfolios might act as a recursive and metacognitive activity that might have engaged the participants in reflection on their vocabulary development [39]. Along with Lam [40], it may be argued that as the activities accomplished by the participants using the e-portfolios might keep their attention close to the different aspects of vocabulary development, they might have raised their self-idealization and led to active engagement. Additionally, it may be argued that this development of self-idealization and active engagement might have been more intensive because the learning activities were presented with rich and interesting digital resources in the information and communication technology [41–43].

To present more reasons for the findings of the study, we can refer to social constructivism theory of learning [44]. In line with this theory, it may be argued that the e-portfolios could create a useful learning environment in which the



participants could proactively construct the required knowledge of the target vocabulary through establishing social interactions instead of being the passive receipt of the intended knowledge. In other words, according to the results of the study, it may be argued that e-portfolios might encourage the participants to view vocabulary development as a socially situated process [45]. Moreover, aligning with the results of the study, it may be argued that e-portfolios might have demanded the participants to actively engage in making a bridge between the current gap in their vocabulary knowledge and the intended one [39]. These all may have contributed to increasing the learners' motivation learning and shaping positive attitudes toward the e-portfolios.

The final reason that may be suggested for the findings of the study is that since the e-portfolios included collection, selection, and reflection on the learning tasks, it might have engaged the learners cognitively, emotionally, and bodily. As stressed by Fredricks et al. [46], it may be argued that the behavioral engagement made the learners actively participate in terms of engagement in on-task behavior and social activities. This, accordingly, might have caused promising outcomes for the learners. Also, the emotional engagement might entail the participants' positive and negative reactions to the classroom tasks, classmates, the teacher's feedback, and the learning environment. This, in turn, may have positively affected their motivation and willingness to communicate in L2, and the cognitive engagement might direct the learners' attention and investment to the correct way. This, subsequently, might have mediated their thoughtfulness and openness to mastery of the challenging vocabulary and self-regulated learning.

## 7. Conclusions and Implications

As mentioned above, this study explored the effects of the e-portfolios on Afghani EFL learners' vocabulary learning, motivation learning, and attitudes. The findings evidenced that the experimental group outperformed the control group concerning the gains of vocabulary learning and motivation learning on the posttest. Additionally, the results documented that the students shaped positive attitudes toward the implementation of the e-portfolios at the end of the interventions. Based on the results of the study, it can be concluded that since the e-portfolios allowed the participants to collect, select, and reflect on their performances, they could grow self-assessment, independence, and critical thinking [47]. This, in turn, could create a learning environment in which the participants could develop substantially their vocabulary knowledge, raise significantly their motivation learning, and shape positive attitudes toward the use of the e-portfolios.

The findings of the study may recommend some implications for relevant stakeholders. The first implication of the results of the study is for teacher trainers. They should accommodate new teaching approaches and techniques such as the e-portfolios in their educational materials such that student teachers become familiar with them. The second implication of the findings of the study is for educational policy-makers in the ministry of education. They need to

hold preservice and in-service workshops for EFL teachers to make them familiar with the principles and procedures of the e-portfolios. At these workshops, the EFL teachers are supposed to gain the required knowledge and skills to implement it in their classes. The third implication of the findings of the study is for school principals and language institute owners. If they aim to improve the quality of instruction in their educational centers, they have to equip them with new educational technologies like Mahara. In this way, both EFL teachers and EFL learners can benefit from them to pave the road for efficient L2 learning. The fourth implication of the findings of the study goes for EFL teachers. They are supposed to improve their professional competence by accommodating and practicing new teaching approaches and techniques like the e-portfolios in their instructions. The last implication of the results of the study is for EFL students. They should promote their digital literacy to be able to use the new technologies like Mahara. By benefiting from such new apps, they can foster their L2 development by receiving more input, having more interaction, and generating more output.

Considering the limitations imposed on the present study, some suggestions for further research are presented. First, as this study was run at just one private language institute in Mazār-i-Sharīf, Afghanistan, further studies need to be conducted in other parts of the country to increase the generalizability of the findings. Second, since the participants of this study were limited to males, future studies can include females to expand the external validity of the results. Third, because this study addressed the effects of the e-portfolios on vocabulary learning, more studies are needed to explore the effects of e-portfolios on other language components, such as grammar, pronunciation, and orthography. Fourth, since this study was confined to two psychological factors, motivation and attitudes, future studies can explore the effects of the e-portfolios on other psychological factors like self-efficacy, as well as willingness to communicate among EFL learners. In addition, since this study was cross-sectional, a longitudinal study is needed to explore the effects of e-portfolios on L2 learning in a long period of time. Last but not least, as this study used a quantitative design, further studies are required to include qualitative designs such as interviews and observations to disclose how the e-portfolios affect EFL learners' achievement.

## Data Availability

The data that support the findings of this study are included in the paper.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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