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Google classroom-based e-portfolio to enhance receptive language skills: User reflections on co-taught ESP courses at a Bangladeshi university

Mir Md. Fazle Rabbi[1]
Muhammad Tofazzel Hossain[2+]
Md. Mohib Ullah[3]

[1]*Department of Humanities and Social Sciences, Dhaka University of Engineering and Technology, Gazipur, Bangladesh.*
[1]*Email: mfrabbi2000@duet.ac.bd*
[2]*Department of English, Southeast University, Bangladesh.*
[2]*Email: tofazzel.hossain@seu.edu.bd*
[3]*Department of English Language and Literature, International Islamic University Chittagong, Chattogram, Bangladesh.*
[3]*Email: mohib@iiuc.ac.bd*

(+ Corresponding author)

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ABSTRACT

Technological advancements have significantly influenced Generation Z and Generation Alpha; therefore, educational institutions are prioritizing digital literacy over traditional learning methods. Bangladeshi universities are progressively adopting educational technology. However, limited studies exist on Google Classroom-based (GC-based) e-portfolios to improve receptive English skills in ESP contexts. E-portfolios can engage learners outside classrooms with Google Classroom serving as an e-portfolio platform where teachers upload materials, and students maintain their learning records. This study explores teacher and student reflections on using GC-based e-portfolios to improve listening and reading skills. Based on Rogers' Diffusion of Innovation theory, this mixed-methods study collected data through survey questionnaires, interviews, and an observation checklist. The study included six teachers and 140 engineering students from a reputed Bangladeshi private university across three co-taught ESP courses, utilizing carefully designed course materials. Findings suggest e-portfolios encourage participants to be more active in teaching-learning processes, with a stronger inclination towards listening exercises than reading assignments. Survey results indicate that most participants (58.3% students and 83% teachers) consider that GC-based e-portfolios enhance students' listening skills. Interview results from 30 students and six teachers support this finding. The study suggests that integrating face-to-face classroom activities and e-portfolios in GC is preferred by most participants.

Contribution/ Originality: This study documents the application of e-portfolios to enhance listening and reading skills in ESP contexts. As a relatively new concept in Bangladesh, this study is the first to explore user reflections on implementing a Google Classroom-based e-portfolio to improve ESP learners' receptive skills.

1. INTRODUCTION

Technological advancements have significantly influenced not only our daily lives but also the educational system through the integration of innovative tools and teaching methodologies. Generation Z (Gen Z) and Generation Alpha (Gen Alpha), often referred to as 'the future' (Tlili et al., 2022), are exposed to new technologies in their surrounding environments (Naseri & Motallebzadeh, 2016). Since students of these generations prefer to learn new skills independently, teachers feel the need to utilize new technologies to engage them in active learning (Dhinakaran, Partheeban, Ramesh, Balamurali, & Dhanagopal, 2020). Keeping pace with the world, Bangladeshi educational institutions have also adopted technology to disseminate knowledge both inside and outside the classroom. The

necessity of relying on online classes increased during the COVID-19 pandemic. "The move was driven by the need for continuing education in the context of the pandemic and the lack of a better alternative, although teachers were presumably unfamiliar with remote teaching pedagogies" (Khan, Bashir, Basu, & Uddin, 2023). Over time, teachers and students in Bangladesh have become familiar with popular online and blended learning platforms, such as Google Classroom, Zoom, Google Meet, and other learning management systems (LMS). The post-COVID education system returns to traditional face-to-face classrooms. However, educational institutions recognize that blended learning platforms can serve as an alternative to traditional teaching, learning, and assessment methods.

Google Classroom (GC) began its journey on May 6, 2014, as a flipped classroom that can be utilized as a blended platform for teaching and learning. It has no spatial or temporal limitations, requires no maintenance after installation, and can be applied widely to address the challenges of a traditional classroom (Huang, Liu, Chen, & Tsai, 2021; Syakur, Sugirin, & Widiarni, 2020). Furthermore, studies evaluating the efficacy of Google Classroom in a combination of face-to-face and online educational settings revealed that its user-friendliness and absence of a time limit enable it to integrate seamlessly with in-person classes (Abuzant, Ghanem, Abd-Rabo, & Daher, 2021). On the other hand, an e-portfolio is the online version of a portfolio that keeps a record of a student's activities in a cumulative individual folder. It provides a space for students to engage in introspection on their learning experiences, exhibit their accomplishments, and evaluate their progress, thereby fostering the development of metacognitive abilities (Chen & Crook, 2020; Ismail, 2023; Jafari & Ghavifekr, 2021). Additionally, it makes feedback and communication between teachers and students easier (González-Rivera & Mena, 2021; Huang & Liang, 2021). Therefore, using an e-portfolio can be beneficial for both teachers and students, making learning and teaching more productive endeavors.

Furthermore, in co-teaching, two or more teachers from similar or different disciplines collaborate to teach the same subject to the same group of students. According to Goetz (2000), it can be defined as a group of two or more teachers employed together to plan, conduct, and evaluate the learning activities for the same group of learners. According to Shafer (2000), when two or more instructors, either from closely related disciplines or from separate fields, collaborate on the same course, it is referred to as co-teaching. In this study, teachers of two different disciplines (engineering and English language teaching) co-teach ESP courses to undergraduate students of the engineering departments of a recognized private university in Bangladesh. Mostafavi, Mohseni, and Abbasian (2021) and Anqi, Sweeheng, and Thein (2024) found that ESP is the most suitable approach for teaching English to Iranian engineering students and Chinese student-athletes, respectively, in their studies. Hence, the present study has been conducted in an ESP course as the students belong to engineering departments and they have specific language needs. The engineering teacher and English teacher cooperate to prepare ESP materials for reading and listening, utilize GC as an online learning platform in conjunction with in-person classes, and assess students' e-portfolios as part of formative assessment.

However, the application of a GC-based e-portfolio for improving ESP students' receptive language skills among ESP students is a relatively novel approach to English language teaching in Bangladesh. Although the literature suggests that GC has been adopted in Bangladeshi educational contexts, its function as an e-portfolio for improving receptive skills in co-taught ESP contexts has not been examined. Hence, this study examines the reflections of teachers and students on the Google Classroom-based e-portfolio for enhancing reading and listening skills in co-taught ESP courses at a Bangladeshi university.

2. LITERATURE REVIEW

The post-pandemic world has acknowledged the necessity of technology in all aspects of life, especially in the education sector. As Pareek (2023) mentions, "The COVID-19 pandemic has brought about a transformative impact on education, elevating the role of technology in teaching and learning across various disciplines, including English language education" (p. 627). Language teachers relied on different technological tools in and outside the classroom during the pandemic, and the practice continues even after the pandemic. Bangladeshi academic institutions, like the

rest of the world, rely on online and hybrid modes of education in addition to traditional face-to-face learning. For example, Afrin (2020) and Hossain (2021) observed that Zoom Cloud Meeting, Google Classroom, and Facebook were used as language learning platforms during the pandemic in Bangladesh. Zhang and Tur (2024) studied 221 publications related to e-portfolio implementation in higher education during the COVID-19 pandemic and found that e-portfolios enable self-regulated and autonomous learning. The primary obstacles include technical glitches, unfamiliarity with e-portfolios, and a lack of proper guidelines. They recommended integrating e-portfolios within a post-pandemic educational setting. Yang and Wong (2024) conducted an in-depth literature review of e-portfolio implementation in higher education, examining 17 research articles. They suggested policy-related support, student-oriented pedagogy, and measures to prevent plagiarism. Considering the advantages and challenges associated with e-portfolios, this study aims to explore the application and user reflections of a GC-based e-portfolio to enhance receptive skills (reading and listening) in English.

2.1. E-Portfolio

A portfolio is a focused collection of an individual's work that showcases their efforts, growth, and accomplishments in one or more areas. It has the potential to expose its creator and understand the learning process involved in an educational context. Likewise, an e-portfolio is a "personalized, web-based collection of work, responses to work, and reflections that are used to demonstrate key skills and accomplishments for a variety of contexts and time periods" (Lorenzo & Ittelson, 2005). According to Lam (2023), there are three rationales behind opting for e-portfolio: first, e-portfolio is a feasible approach to revolutionize language teaching; second, delivering lessons on digital media is an irreversible trend in the technological era; and third, e-portfolio and portfolio are considered significant embodiments of the assessment for learning movement, where students are motivated to regulate their learning by themselves with e-assessment feedback. Various platforms have been used for e-portfolios; to name a few, MS OneNote (Nasseif, 2021), Facebook (Barrot, 2021), Foliotek, LiveText, TaskStream, Open-Source System, Tk20, TrueOutcomes, and Blackboard Portfolio Platform (Sweat-Guy & Buzzetto-More, 2007) are noteworthy. Since Google Classroom (GC) is free, easy to use, and operational in both complete online and blended modes, the researchers relied on this platform for the e-portfolio in this study. The studies of Rumpanpetch (2025), Guo and Li (2024), Butakor (2024), Bozorgian, Kazemi, Deylami, and Nushi (2024), Alshahrani, Mohamed, Mukhtar, and Asma'Mokhtar (2023), Hanukaev (2023) and Le, Bo, and Nguyen (2023) observe that an e-portfolio positively contributes to learning in Thailand, China, Ghana, Iran, Saudi Arabia, Norway, and Vietnam, respectively. Therefore, in this paper, the researchers highlight the use of GC-based e-portfolio to develop Bangladeshi university students' receptive language skills.

2.2. Google Classroom

Multiple functions, such as 'Announcement,' 'Assignment,' 'Quiz Assignment,' 'Question,' and 'Material,' as well as the assessment process, make GC appropriate for use as an entirely online or blended platform for teaching and learning. Earlier research has proven GC to be an effective language-learning platform. Research on Google Classroom's effectiveness in improving listening skills supports its utility in language education (Nhat, 2021), speaking (Isda, Purwati, & Imran, 2021), reading (Susanti, Junining, & Hamamah, 2021), and writing proficiency (Torabi, 2021) is remarkable. The literature has documented the efficacy of GC in improving both receptive and productive language skills in various countries; however, the focus of this study is to adapt GC as an e-portfolio platform to enhance receptive language skills in Bangladesh.

2.3. Theoretical Framework

For any Bangladeshi user, the application of e-portfolio and GC as teaching-learning tools is a unique idea. Hence, there is room to explore how Bangladeshi language instructors and students reflect on GC and e-portfolio to

improve students' English language proficiency in reading and listening skills. Rabbi (2025) applies Rogers' theory on the diffusion of innovation to examine user perceptions of GC as an e-portfolio for developing productive language skills. The present study replicates this theoretical framework by examining user reflections on the GC-based e-portfolio to enhance receptive language skills. According to this theory, any unique concept is accepted or refused by the user in five stages (Figure 1).

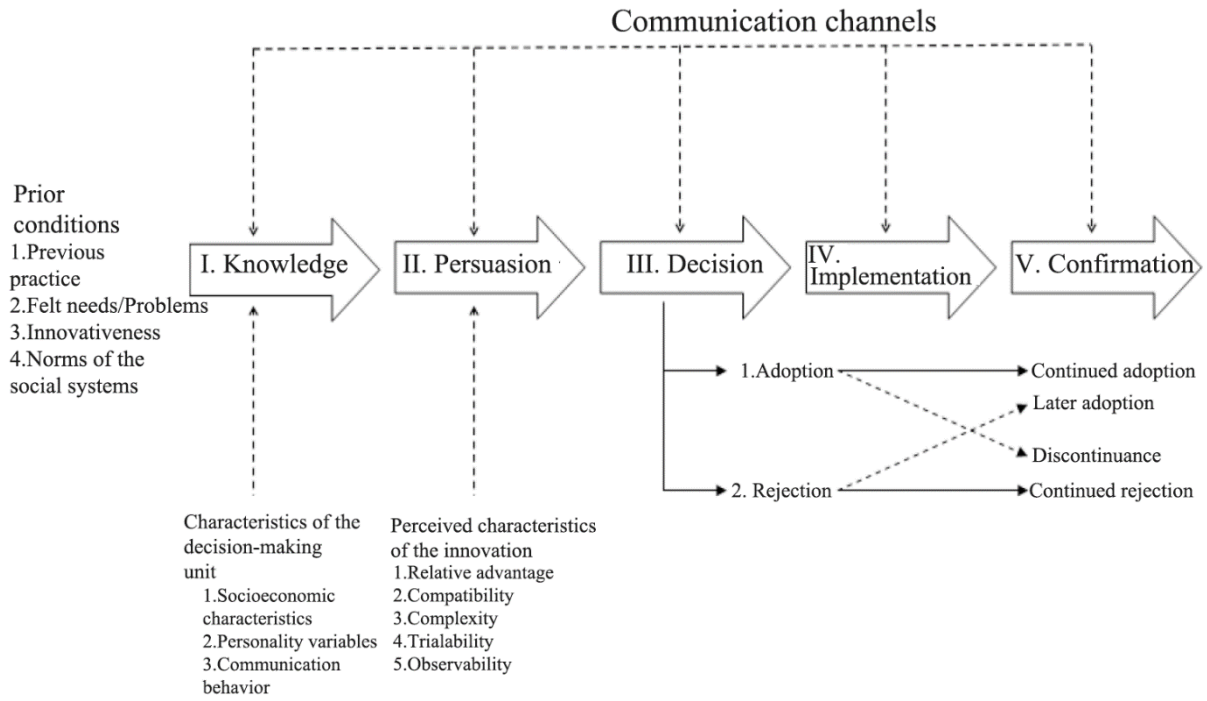

Figure 1. Model of stages in the innovation-decision process (Rogers, 2003).

Note: From Diffusion of Innovations (p. 169), by Rogers (2003).

In the initial stage, knowledge is generated as a user encounters the invention and comprehends its functionality. In the next stage, the user is influenced to develop either a positive or negative inclination toward the invention. The process of decision-making occurs during the third stage, wherein the user is involved in various activities that serve as sources of motivation for either accepting or rejecting the innovation. The fourth stage involves applying the invention, where the user begins to utilize it. The user affirms the innovation in the concluding stage, but they may reconsider their prior decision if they encounter contradictory evidence regarding the innovation (Rabbi, 2025).

Drawing upon Rogers' model as a theoretical framework, the primary focus of this study is to examine the reflections of both teachers and students on the application of GC as an e-portfolio to enhance the receptive language skills of tertiary-level English as a Foreign Language (EFL) students. Both GC and e-portfolio meet the fundamental requirements outlined in Rogers' theory. The current investigation was conducted at a privately owned Bangladeshi university, where GC is utilized as a flipped classroom approach. However, using an e-portfolio to enhance receptive language skills is a novel approach. The success stories of GC in educational institutions, the need to rely on technological tools following the pandemic, and the social system of Bangladesh are the prior conditions that encourage GC users to welcome e-portfolios as a positive innovation. The decision-making unit's features, for example, the no-cost aspect of GC and its ease of use, encourage administrators and teachers to step into the initial stage of the decision-making process for innovation. In the second stage, persuasion, administrators and teachers endorse the use of GC as an e-portfolio to improve English reading and listening skills. In the third stage, teachers and administrators adopt the idea of a GC-based e-portfolio for developing receptive language skills. In the fourth stage, the teachers and the students apply the innovative idea of a GC-based e-portfolio (Rabbi, 2025). The present

study focuses on the final stage, where teachers and students share their opinions after implementing the reading and listening e-portfolios. If users develop favorable attitudes toward e-portfolios, they will continue to utilize them. If not, they will discontinue their use.

2.4. Use of Google Classroom in Bangladesh

Google Classroom (GC) has been used as a platform for blended teaching and learning since its inception in 2014. (Iftakhar, 2016). Initially, when GC could only be used with institutional accounts, it had limited users in Bangladesh. Over time, Google made it free for all, and the number of users increased. (Iftakhar, 2016) identified various characteristics of GC, with a particular focus on users' overall reflections on this educational platform. The study involved seven language instructors and 35 EFL learners at the university level. The language instructors were suspicious that a significant portion of students' submissions had been copied, plagiarized, and presented with no alterations. The student participants expressed a lack of enthusiasm regarding GC. However, Iftakhar conducted her study in 2016 when users had restricted access to many of GC's functions. Rabbi, Zakaria, and Tonmoy (2017) conducted research with 40 first-year tertiary students to investigate how a language instructor can help students develop their listening skills using GC and the effects it has on the students. The researchers concluded that students' listening skills improved when they completed listening tasks online regularly. However, this study overlooked the respondents' thoughts on using GC. Islam and Ferdousi (2019) analyzed the future of Google Classroom and the obstacles consumers encounter. The majority of students and ten instructors who participated in this study supported Google Classroom as a platform for language learning. As a data collection instrument, the researchers used only a survey questionnaire. This study would yield more comprehensive results if additional methods, such as interviews and focus groups, were employed. Saidu and Al Mamun (2022) conducted a study on Bangladeshi and Nigerian teachers at the tertiary level. The study examined the perspectives of teachers regarding the use of Google Classroom and the variables that influenced their acceptability and behavioral intentions towards adopting it as a learning management system platform. A total of 54 teachers (27 from each country) participated in the study, and the findings indicate that Bangladeshi teachers exhibit a greater inclination towards accepting this platform compared to their Nigerian counterparts. However, this study used only a survey questionnaire to investigate user reflections. The study's results could be more inclusive if the researchers had used additional tools, such as focus group discussions and interviews, in conjunction with the survey questionnaire.

2.5. Reading E-Portfolio

Fathali and Okada (2016) conducted a study in Japan aimed at investigating the impact of a web-based e-portfolio on enhancing learners' reading skills. The study involved 212 undergraduate EFL students enrolled in a non-English major course. Participants were divided into an experimental group and a comparison group. The experimental group practiced reading after class using a web-based e-portfolio developed with two Google applications: Google Drive as the personal learning environment (PLE) and Google Sites as the collaborative virtual learning environment (VLE) (Fathali & Okada, 2016). In contrast, students in the comparison group received the same reading materials for practice but did not have access to web-based Out-of-Class Language Learning (OCLL) environments. The performance of both groups was evaluated through pre-tests and post-tests, revealing that the experimental group outperformed the comparison group in reading proficiency. Additionally, twenty students randomly selected from the experimental group were interviewed regarding their experience with the web-based reading e-portfolio. The majority reported an increase in their reading proficiency attributed to the use of the e-portfolio. However, the study could have benefited from incorporating other data collection methods, such as survey questionnaires and focus group discussions, to gain a more comprehensive understanding of students' opinions on using the e-portfolio. Furthermore, teachers' perspectives were not considered in this study, which could have provided valuable insights into the implementation and effectiveness of the e-portfolio in the learning process.

Mama (2023) conducted another study in Morocco on reading e-portfolios. The study aimed to explore the impact of an e-portfolio as a tool for formative assessment. 32 EFL undergraduate students of the English department participated in the study. The researchers divided them equally into an experimental and a control group. They employed a pre-test and a post-test as tools for the study. The tests were conducted on both groups before and after the experiment to assess students' reading proficiency in literal, inferential, and evaluative comprehension. However, the participants of the experimental group received an e-portfolio-based formative assessment for four weeks. In contrast, the control group received a traditional assessment method at the end of the experiment. A post-test was used to assess the performance of both groups. The findings revealed that the experimental group developed reading skills in all three comprehension tasks, whereas the control group improved only in literal comprehension. Hence, this study validated that applying e-portfolio-based assessment has a positive impact on learners' reading comprehension skills. However, the study neglected to consider the reflections of teachers and students on using e-portfolios. Additionally, it did not specify the platform used for the reading e-portfolio assessment.

2.6. Listening E-Portfolio

Liang, Hui-Ying, and Ya-Ming (2013) conducted a study in China on the application of e-portfolio to improve listening proficiency. In this study, the researchers proposed the application of an e-portfolio and identified related problems and solutions. The proposed e-portfolio consists of three parts: the teacher module, the student module, and the network module. As platforms, they suggested QQ Zone, QQ Group, Blog, or microblog (a Chinese version of Twitter), along with various websites to access teaching materials. The teacher module includes the teacher's CV, teaching documentaries, teaching strategies, and other relevant materials. The student module provides a space for students to prepare individualized learning plans and include exercises of different types. The network module comprises a class forum, material sharing, online problem-solving, evaluation, and feedback. The researchers identified financial motivation for teachers as the major obstacle in implementing co-teaching; besides that, willingness to embrace technology was considered a minor issue. They proposed employing young teachers and offering lucrative financial benefits to those in charge of e-portfolios as potential solutions. However, if the researchers suggested implementing co-teaching on a trial basis, recording reflections of teachers and students, and addressing errors, it would be a practical approach to applying an e-portfolio for listening skills development.

Bailusha (2015) conducted a study in Palestine to explore the effect of e-portfolio on improving undergraduate English majors' listening skills. Fifty students participated in this study, and they were divided equally into a control group and an experimental group. The experimental group had the opportunity to practice their English listening skills in the language laboratory and prepare the e-portfolio. In contrast, the control group practiced their English listening skills in the traditional classroom with a tape recorder. The researcher administered a pre-test to ensure that participants in both groups had similar proficiency levels. After the experiment, the researcher conducted a post-test with the same test paper. The results of the post-test revealed that the experimental group outperformed the control group in terms of visualizing the topic, note-taking, and identifying supporting details. However, the researcher did not mention the platform used for the listening e-portfolio. The researcher explored only the effects of applying an e-portfolio on students' listening skills development. If she documented user reflections about using the e-portfolio, the study would be more comprehensive.

While the current literature indicates the potential of e-portfolios for language skill development and documents the use of GC in Bangladesh, no prior study has specifically examined GC as an e-portfolio platform to improve both receptive skills (reading and listening) in co-taught ESP courses, nor has any research systematically examined both student and teacher perspectives of such implementation in the Bangladeshi tertiary context using a mixed-methods approach. The present study addresses these critical gaps in the literature.

The study aims to examine user reflections on the GC-based e-portfolio, with the following research questions:

1. How do teachers commonly reflect on their experience with GC as an e-portfolio?

2. How do students commonly reflect on their experience with GC as an e-portfolio?
3. How do teachers reflect on their experience with GC as a reading e-portfolio?
4. How do students reflect on their experience with GC as a reading e-portfolio?
5. How do teachers reflect on their experience with GC as a listening e-portfolio?
6. How do students reflect on their experience with GC as a listening e-portfolio?

The literature review has thoroughly examined the current corpus of research about e-portfolios and Google Classroom. Through the process of synthesizing and critically assessing a wide range of sources, this review has established a strong foundation for the remaining stages of this research initiative.

3. METHODS

This section provides an in-depth examination of the methodologies employed in the study, outlining the specific experimental protocol, procedures for data collection, and analytical techniques used to address the research objectives effectively. This study employs an extensive approach that combines qualitative and quantitative methods to achieve a thorough and detailed understanding of user reflections on the application of a GC-based e-portfolio.

3.1. Participants

The study was conducted at a private university where students and teachers rely on GC as a platform for blended learning and teaching. Therefore, all participants are familiar with the main functionalities of GC. One hundred fifty students enrolled in ESP elementary courses across three engineering departments, and six teachers (three engineering teachers and three English teachers) participated in this study. The student participants, aged between 19 and 21, were in their first year, second semester of the BSc in Engineering program. Among them, 90 were male, and 60 were female students. All teachers held a Master's degree in relevant fields and had a minimum of three years of teaching experience at the tertiary level. However, 140 students completed their e-portfolios. Six teachers and 140 students participated in the survey. All teachers and 30 randomly selected students from the survey participants were interviewed.

3.2. Use of Google Classroom as an E-Portfolio

A review of previous studies shows that GC has been applied in various ways to enhance language skills. The present study examines its use as an e-portfolio designed to enhance students' reading and listening skills. For this purpose, the teachers created two distinct Google Classrooms, one for reading and the other for listening e-portfolios. Throughout the four-month trimester, students uploaded their reading and listening tasks using the 'Assignment' feature in GC.

For the reading e-portfolio, the English and engineering co-teachers, working as a duo, select the materials and prepare the tasks. Tasks mainly include MCQ, True/False, Gap Filling, Vocabulary, Questions for Short Answers, and Summarising based on reading comprehension. Students upload their answers in a Word document file within the specified deadline, and the teachers comment on the answers after assessment. A total of 16 assignments are uploaded to the e-portfolio for final assessment.

Similarly, for the listening e-portfolio, the co-teachers find suitable engineering-related listening materials from YouTube, TED Talks, and other online resources. Tasks include Multiple Choice Questions (MCQ), True/False, Gap Filling, Matching Information, and Listening for the main idea. Students listen to the audio/video clips, complete the tasks, and record the number of times they play the clips to finish the tasks. Teachers provide the correct answers and comments on students' performance.

Two expert ELT practitioners reviewed the reading and listening tasks and shared their opinions. Based on their views, the tasks were modified to ensure face validity.

3.3. Research Tools for Empirical Investigation

Syatriana, Saiful, Ariana, and Dzilarsy (2025) employed semi-structured interviews as the primary data collection tool to explore Indonesian students' perspectives on the use of e-portfolios. However, given the nature and objective of the present study, the researchers opted for a mixed-methods concurrent triangulation design for its empirical examination. The purpose of this design is "to obtain different but complementary data on the same topic" to gain a clear understanding of the research problem (Morse, 1991). This study employed three data collection tools: survey questionnaires, interviews, and observations. In line with the research questions, data were collected using the following instruments: 1) a student survey questionnaire, 2) student interviews, 3) a teacher survey questionnaire, 4) teacher interviews, and 5) observations of the Google Classrooms created by the teachers. The consent of the participants was obtained in written form. Through face validity and a pilot study, the survey questionnaires and interview questions were validated. Two ELT specialists initially reviewed the questionnaires. Subsequently, inappropriate and poorly worded questions were identified through a pilot study conducted with 20 students and two teachers. The validity of the questionnaires for data collection was determined based on comments from experts and the results of the pilot study.

The survey questionnaire demonstrated good internal consistency (Cronbach's $\alpha = 0.82$), indicating that the questionnaire items reliably measure user reflections on Google Classroom as an e-portfolio. However, to achieve legitimate and accurate research conclusions, the quantitative data from the survey questions given to teachers and students were analyzed using Microsoft Excel to determine the relative frequencies and percentages of responses based on a three-point Likert scale. The qualitative data gathered through interviews were audio-recorded and transcribed for analysis. A checklist was used to inspect the Google Classrooms. The credibility and consistency of the findings were ensured through data triangulation, which incorporated information from student questionnaires and interviews, teacher questionnaires and interviews, and observations of teacher-student interactions within the Google Classrooms.

4. RESULTS AND DISCUSSION

This section presents the comprehensive findings derived from an in-depth analysis of the study. Through rigorous data collection and meticulous analysis, this study has examined user reflections on the GC-based e-portfolio to improve ESP reading and listening skills. These findings not only contribute to a deeper understanding of user attitudes but also lead to a thought-provoking discussion that contextualizes the findings within the existing body of literature.

4.1. Results of the Survey Questionnaire

The teacher survey questionnaire and student survey questionnaire are designed to be similar to achieve appropriate triangulation of the results.

Each questionnaire includes three preliminary questions about the participants' engagement with GC, followed by seven questions exploring general reflections on GC as an e-portfolio, seven questions addressing its use for the reading e-portfolio, and another seven focusing on the listening e-portfolio. All participating teachers report that they assign tasks, provide feedback, and evaluate students' e-portfolio submissions through GC.

As shown in Table 1, most students (79.5%) and teachers (83%) agree that creating or assessing an e-portfolio in GC attracts them as active learners or teachers. A large proportion of respondents also believe that using the e-portfolio helps students submit their assignments more punctually. Nevertheless, many participants (60.5% students and 83% teachers) admit that their use of GC is primarily due to institutional enforcement. The view is further supported by the opinion of more than half of the respondents who find face-to-face classes more convenient than relying entirely on GC.

Table 1. General reflections on using GC as an E-Portfolio.

SL	Survey items	Students' response			Teachers' response		
		Agree	Undecided	Disagree	Agree	Undecided	Disagree
1.	Making/Assessing e-portfolios in GC attracts me as an active learner/Teacher	79.5%	13.1%	7.2%	83%	17%	0%
2.	Students participate more effectively in GC than in face-to-face classes	50.3%	20.4%	29.1%	17%	50%	33%
3.	Students can hand over their reading and listening assignments on time by using the e-portfolio	63.3%	22.6%	8.02%	67%	0%	33%
4.	The university authority forces me to use GC	60.5%	27.0%	12.41%	83%	0%	17%
5.	Making/Assessing e-portfolios in GC is time-intensive	76.6%	12.41%	10.9%	17%	50%	33%
6.	Face-to-face classroom-based activities are easy to complete/Assess	63.5%	13.8%	22.6%	67%	17%	17%
7.	Blending face-to-face classes and GC-based e-portfolio best supports students' reading and listening skills	73%	13.8%	12.4%	83%	0%	17%

Some variations appear between students' and teachers' reflections. About half of the students report being more involved in GC than in face-to-face classes, while most teachers disagree. Likewise, many students (76.6%) feel that submitting assignments in GC requires more time, but few teachers (17%) share this view. These contrasting opinions highlight differing experiences between the two groups of participants. Notably, both students and teachers largely agree that combining face-to-face teaching with GC-based e-portfolio contributes to improving students' reading and listening skills. The skill-based section is divided into two parts: reflections on the reading e-portfolio and the listening e-portfolio. Each part includes seven statements. Both teachers and students are asked to indicate their level of agreement or disagreement with these statements using a Likert scale.

Table 2. User reflections on using GC for the reading E-Portfolio.

SL	Survey items	Students' response			Teachers' response		
		Agree	Undecided	Disagree	Agree	Undecided	Disagree
1.	Students participate willingly	54%	36.4%	9.4%	33%	17%	50%
2.	Reading on-screen makes it easier for students than reading printed texts	42.3%	40.1%	17.5%	50%	33%	17%
3.	Understanding a text becomes faster for students	50.3%	43.7%	5.8%	17%	50%	33%
4.	Students get the general idea of a text more efficiently on screen than on printed text	46.7%	42.3%	10.9%	17%	33%	50%
5.	Students can find specific information from a text easily if they read it on screen	52.5%	36.4%	10.9%	50%	17%	33%
6.	Students can do the intensive reading (e.g., summarising) effectively on screen	46.7%	41.6%	11.6%	17%	50%	33%
7.	Recurrent submission of reading assignments in the e-portfolio improves students' reading skills	36.4%	9.4%	54%	33%	17%	50%

As per Table 2, students and teachers express contrasting views regarding the use of GC for the reading e-portfolio. Although more than half of the students believe they participate in e-portfolio activities willingly, understand a text more quickly, and can engage in intensive reading effectively on screen due to the e-portfolio, most teachers disagree. However, there are some similarities in the opinions of teachers and students. The majority of them believe that reading on-screen makes it easier for students than reading printed texts, and students can find specific information from a text easily if they read on screen. Finally, the majority of participants believe that frequent submission of assignments in the e-portfolio does not significantly improve students' reading skills.

Table 3. User reflections on using GC for the Listening E-Portfolio.

SL	Survey items	Students' response			Teachers' response		
		Agree	Undecided	Disagree	Agree	Undecided	Disagree
1.	Students participate willingly	54.7%	25.5%	19.7%	67%	17%	17%
2.	Students have more flexibility in listening to audio clips repeatedly outside the classroom than in a classroom setting.	59.8%	24.8%	15.3%	67%	33%	0%
3.	Uploading listening assignments on a variety of accents in the e-portfolio is helpful.	55.4%	22.6%	21.8%	50%	33%	17%
4.	Doing and uploading assignments in an e-portfolio is time-consuming and tedious for students.	37.9%	13.8%	48.1%	33%	17%	50%
5.	Students may take the opportunity to get help from their friends, as they do not need to answer promptly.	23.3%	21.1%	55.4%	67%	33%	0%
6.	Students become independent and active listeners of English because of the e-portfolio.	54.7%	25.5%	19.7%	67%	17%	17%
7.	Uploading listening assignments frequently in the e-portfolio enhances students' listening skills.	58.3%	29.1%	12.4%	83%	0%	17%

According to Table 3, the majority of teachers and students share similar opinions regarding the use of e-portfolios for listening skills development. It is a common belief among the participants that students participate willingly in the listening e-portfolio. They benefit from greater flexibility in listening to audio clips repeatedly outside the classroom compared to in-class settings, and the use of the e-portfolio fosters independence and active listening in English. However, a discrepancy exists between the opinions of teachers and students. Most teachers (67%) believe that students may seek help from friends or other sources since they do not need to answer promptly. Conversely, the majority of students (55.4%) think the opposite. Finally, it is a widely held belief among respondents that submitting listening assignments frequently in the e-portfolio enhances students' listening skills.

4.2. Results of Interviews

Interviews are conducted with 30 randomly selected students and all six teachers, based on six questions, to ensure proper data triangulation. All participants report using every feature provided in GC. For example, S16 (Student 16) says, "I use the 'Assignment' feature to upload assignments," and T3 (Teacher 3) says, "I use the 'Assignment' feature to comment on students' work." T6 comments, "I use the 'Material' feature to upload course materials, lesson plans, and syllabi."

4.2.1. Teacher Reflections on GC-Based E-Portfolio

As the findings of the interview suggest, four teachers observe and evaluate students' assignments in the e-portfolio in GC enthusiastically, as it enables them to maintain contact with their students beyond classroom hours. For example, T3 (Teacher 3) comments, "I cannot manage the time to check every student's assignment during my class time. Google Classroom allows me to evaluate students' tasks at my convenience. So, I enjoy checking students' assignments on Google Classroom." T6 suggests, "I like to evaluate students' e-portfolios as they store all the assignments in one paperless platform, keeping a record of individual students' performance." However, two teachers feel that they use GC because the administration compels them. T1 comments, "I prefer face-to-face discussion," and T5 says, "I like the traditional way of giving and checking assignments because evaluating the reading and listening e-portfolios in GC is time-consuming for me."

4.2.2. Student Reflections on GC-Based E-Portfolio

According to the findings of students' interviews, 18 students suggest that they prepare their e-portfolios in GC willingly. For example, S9 (Student 9) comments, "E-portfolio is fun. I can work on the given tasks in my comfort zone." S21 says, "I complete the listening and reading tasks for my e-portfolio willingly as I don't feel any peer pressure to submit the assignments on time during the class hour." S16 reports, "Submitting assignments for my e-portfolio is interesting as I compete with myself. I can observe and keep track of my progress in the e-portfolio." In contrast, 12 students suggest that they prepare their e-portfolios in GC forcefully. S10 comments, "I submit my assignments in an e-portfolio because they are evaluated." S3 says, "I am uncomfortable using GC." Again, S5 is unwilling to submit assignments in the e-portfolio as she comments, "Due to server problems and loadshedding, I cannot submit assignments on time, which would be possible if I could submit the assignments in person."

4.2.3. Participants' Comparative Reflections on Reading E-Portfolio

Four teachers suggest that reading an e-portfolio does not play any significant role in improving students' reading skills. As reasons, T5 mentions, "students take more time in reading a text online," and T6 says, "there is a scope for cheating as students can check the dictionary and take help from others while answering the questions online in the e-portfolio." Fifteen students also opine that reading an e-portfolio does not improve their reading skills significantly. As reasons, S13 mentions, "reading a textbook on screen is time-consuming and tedious for me," and S3 says, "I feel reading a text in print and reading a text on screen do not make any significant difference." However, one teacher and 15 students believe that a reading e-portfolio can improve students' reading skills. For example, S16 comments, "reading a text on screen helps me find specific information easily." T6 says, "Students are bound to read texts online for the e-portfolio. It helps them grasp the general idea of a text quickly." Overall, only two teachers and six students are of the view that GC is a suitable platform for teaching and learning reading skills.

4.2.4. Participants' Comparative Reflections on Listening E-Portfolio

Five teachers and 21 students opine that listening tasks for the e-portfolio significantly improve students' listening skills in English. As reasons, T1 comments, "Students get the opportunity to practice listening in a familiar environment without feeling shy." S16 says, "I get used to varieties of accents in English while doing my listening tasks for the e-portfolio." S25 comments, "Frequent online submission encourages me to listen to audio clips in English regularly. Consequently, my listening skills improve day by day." All the interviewees commented that GC is suitable for teaching and learning listening skills.

4.2.5. Participants' Suggestions on Improving GC-Based E-Portfolios

As the participants suggest, the teacher should:

a. Be technically competent and dynamic (T1).

b. Provide constructive feedback on student tasks. Although it will be time-consuming, it will ultimately benefit students in the long term (T2).
c. Choose assignment topics carefully to prevent students from easily finding ready-made answers online or from other resources (T4).
d. Avoid depending solely on Google Classroom; instead, blend traditional face-to-face sessions with GC-based instruction (T6).
e. Be determined to respond to inquiries of the students on Google Classroom whenever they reach out (S8).
f. Engage students with stimulating ESP tasks for their e-portfolios; if not, they may lose motivation and interest (S16).

The students should:

a. Maintain honesty and refrain from any form of cheating in their assignments (T3).
b. Notice the progress of individual performance (T6).
c. Submit the assignments on time and regularly (S4).
d. Adhere to the teacher's instructions carefully (S16).

4.3. Observation of Google Classrooms

With the teachers' consent, the researchers examine the Google Classrooms (GCs) that the teachers created using an observation checklist. It is found that the teachers created their GCs during the first week of the four-month trimester, and the observation take place on the 16th week. The findings reveal that the number of assignments ranges from 12 to 16 across the two e-portfolios of different GCs. Every teacher utilizes the 'Assignment' and 'Announcement' tools, while course materials, including handouts, video links, and web resources, are uploaded through the 'Material' and 'Announcement' tools. Teachers use ESP reading materials that relate to students' levels of proficiency in engineering contexts. Most of the reading materials are derived from texts that students encounter in other engineering courses. For the listening e-portfolio, most topics cover engineering concepts that students were studying in that trimester or would study in their upcoming trimester. Interaction between teachers and students occurs mainly through the comment section, where teachers provide detailed and constructive feedback. Student comments are relatively few, but teachers consistently guide the students on their submissions. The assignment instructions are clear, well-organized, and written in understandable English.

4.4. Synthesis of Research Findings

The classroom observations support the survey's general questions concerning participants' engagement in GC. Evidence from all three data sources, questionnaires, interviews, and classroom observations, confirms that the 'Announcement,' 'Assignment,' and 'Material' features are the most frequently used.

Findings from the survey and interviews indicate that both teachers and students generally regard GC as more effective for developing university students' receptive language skills through listening e-portfolios than through reading e-portfolios. Consistently, a substantial portion of respondents express a stronger preference and a more positive attitude toward GC-based listening e-portfolios compared to GC-based reading e-portfolios.

4.5. Discussion

This study aims to investigate the reflections of teachers and students regarding GC-based reading and listening e-portfolios. The gaps identified in previous research have been explored and addressed in the current study. Iftakhar (2016) found that Students exhibited limited enthusiasm to use GC for language learning purposes. In contrast, the findings of the present study indicate a steady rise in the enthusiasm of both students and teachers toward adopting GC as a tool for language instruction and learning. The current study suggests that there has been a gradual increase in the interest of both students and teachers in using GC as a platform for language learning. The research conducted

by Rabbi et al. (2017) did not incorporate the perspectives of the users, which have been addressed in this study. According to the studies conducted by Islam and Ferdousi (2019) and Saidu and Al Mamun (2022), both teachers and students perceive Google Classroom as beneficial for language teaching and learning. Both studies employed survey questionnaires as the only research tool. On the contrary, the current study applied a survey questionnaire, interviews, and an observation checklist to enhance the validity and reliability of the research findings. Although this study identifies users' favorable opinions of GC-based listening e-portfolios, a significant proportion of the participants exhibit a negative disposition regarding the GC-based reading e-portfolio.

The study of Fathali and Okada (2016) employed a pre-test and post-test to investigate the impact of a reading e-portfolio. Selected students from the experimental group were also interviewed. However, the study did not utilize any survey questionnaires or focus group discussions. Conversely, the present study employed a survey questionnaire and e-portfolio observation as tools for data collection to enhance validity and reliability. Mama (2023) also used a pre-test and post-test to assess the impact of reading an e-portfolio as a tool for assessment. Although the study found that a reading e-portfolio can be suitable for formative assessment, it did not consider user reflections. The third and fourth research questions of this study focused on investigating the reflections of Bangladeshi students and teachers on the application of GC-based reading e-portfolios. The findings suggest that Bangladeshi participants exhibit an unfavorable attitude toward GC-based reading e-portfolios, which contradicts the findings of the aforementioned studies.

The study by Liang et al. (2013) proposed the application of a listening e-portfolio, but it did not emphasize user reflections. The present study, on the contrary, employed a GC-based listening e-portfolio and recorded the reflections of both teachers and students on its use. Bailusha (2015) identified a positive impact of a listening e-portfolio is evident in her study, but the user reflections are overlooked, which are addressed in the present study. The final two research questions in this study aimed to investigate the reflections of Bangladeshi teachers and students on the application of GC as a listening e-portfolio. The current study's findings indicate that Bangladeshi students and teachers exhibit a favorable disposition towards using a GC-based e-portfolio to enhance their listening skills. This finding aligns with the findings of Kurniawan, Anastasia, Efriza, and Rahmadani (2025) who found that Indonesian students express a positive attitude towards e-portfolios, as they demonstrate students' learning achievements and competence. Again, the finding of this study aligns with the finding of Majola (2025), which suggests, "through co-teaching and co-learning, students become knowledge creators and active users of e-portfolio" (p.71).

5. IMPLICATIONS

The findings of this research point to several important implications for classroom practice, theory, and educational policy in English language teaching.

Implications for teaching and learning: The research indicates that e-portfolios created by Google Classroom lead to more self-reliant work on the part of students and keep them engaged in doing listening tasks. Similar to the findings of Pettenati, Martinelli, and Tancredi (2025) the results of the current study suggest that teachers working in ESP or EAP programs may benefit from incorporating e-portfolios into their assessment practices as a tool for continuous and formative assessment. At the same time, the less favorable responses toward reading tasks suggest that teachers should not rely exclusively on digital reading activities. Instead, they may combine online tasks with printed materials and provide explicit guidance on how to approach digital reading effectively. The co-teaching model, where language and subject specialists collaborate, also appears to be a valuable approach for creating meaningful tasks that connect with learners' disciplinary studies.

Implications for theory: Utilizing Rogers' Diffusion of Innovation model, this paper demonstrates how the introduction of new educational technology also necessitates an attitudinal shift among teachers and students alike. By underscoring the potential of e-portfolios in enhancing receptive skills, the findings contribute to existing research

in CALL and portfolio-based learning, where the emphasis has often been placed on productive skills, such as writing. This suggests that future theoretical work on blended learning should consider how digital tools can differently affect reading and listening compared with speaking and writing.

Implications for policy and practice: For institutions and policymakers, the results indicate that GC-based e-portfolios could be integrated as a practical alternative form of assessment in higher education. Therefore, teacher training programs should emphasize digital skills, task design, and strategies for giving constructive feedback through e-portfolios. As students and teachers appreciated a blended model over an online-only approach, program designers are encouraged to adopt a complementary model where e-portfolios extend, rather than replace, face-to-face instruction. The findings of the present study align with those of Castillo, Cid-Cid, and Guede Cid (2024), which suggest that an e-portfolio for language education is beneficial for both students and teachers, as it fosters a more effective classroom setting that promotes a better learning atmosphere. The success of listening e-portfolios in the present study also implies that the approach can be transferable to many other courses and subject matters. The research suggests that, when judiciously incorporated into blended learning, e-portfolios can be highly effective in supporting language improvement. Nevertheless, their success requires careful pedagogical design, strong theoretical underpinnings, and institutional support.

6. CONCLUSION

This research investigates the reflections of teachers and students on GC-based e-portfolios to develop receptive English language skills in a co-taught ESP course at a Bangladeshi university. The findings of this study reveal that Google Classroom serves as an effective tool for designing and assessing both reading and listening e-portfolios. Nonetheless, feedback from teachers and students indicates a stronger preference for using Google Classroom to improve listening e-portfolios rather than reading ones when it comes to enhancing receptive language skills. Further research projects can be undertaken to address the challenges associated with the utilization of GC-based reading e-portfolios. Additional studies can further investigate the appropriateness of utilizing a GC-based e-portfolio at the primary and secondary education levels. The adoption of technology includes both advantages and disadvantages. As an educational tool, GC has both positive and negative aspects. The responsibility lies with the user to utilize the features of the e-portfolio created in Google Classroom. While Bangladeshi university users perceive Google Classroom as an engaging and convenient platform, the traditional in-person classes continue to retain their allure. The prevailing viewpoint among students and teachers is that integrating GC-based e-portfolios alongside traditional face-to-face classroom instruction is the optimal approach for fostering the development of receptive language skills.

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Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
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