Exploring Student's Perceptions of Project-Based Learning Using Google Sites E-Portfolios for Reflective Academic Essay Writing to Enhance Creativity

THESIS

Submitted in Partial Fulfillment of the Requirements for Gaining the Degree of Bachelor of English Language Education

Organized by:

Astuti Kusuma Wardani

NIM: 2103046083

EDUCATION AND TEACHER TRAINING FACULTY

UNIVERSITAS ISLAM NEGERI WALISONGO

SEMARANG

2025

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Name : Astuti Kusuma Wardani
Students' Number : 2103046083
State, that research entitled :

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Semarang, 5 May 2025
The Research

Astuti Kusuma Wardani
2103046083

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UNIVERSITAS ISLAM NEGERI WALISONGO SEMARANG
FAKULTAS ILMU TARBIYAH DAN KEGURUAN
Jl. Prof. Dr. Hamka (Kampus II) Ngaliyan Telp. 024-7601295 Fax. 024-7615387 Semarang 50185

To:

The dean of Education and Teacher Training Faculty

Walisongo State Islamic University

Semarang

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I inform you that I have given guidance, briefing, and correction to whatever extent necessary for the following thesis:

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Name of Student	:	Astuti Kusuma Wardani
Student Number	:	2103046083
Department	:	English Education

I state that the thesis is ready to be submitted to the Education and Teacher Training Faculty of Walisongo State Islamic University to be examined at the Munaqosyah session.
Wassalamu'alaikum Wr. Wb.

Semarang, 5 May 2025

Advisor 1,

Agus Mufohar, MA., Ph. D
NIP. 198408012019031007

Advisor 2,

Dr. Suwahono, M.Pd
NIP. 197205201999031004

RATIFICATION

KEMENTERIAN AGAMA REPUBLIK INDONESIA
UNIVERSITAS ISLAM NEGERI WALISONGO SEMARANG
FAKULTAS ILMU TARBIYAH DAN KEGURUAN
Jl. Prof. Dr. Hamka Km 2 Semarang 50185
Telepon 024-7601295, Faksimile 024-7601295 Semarang www.walisongo.ac.id

RATIFICATION

Thesis with the following identity :

Title	:	Exploring Students Perceptions of Using Google Sites E-Portfolios for Academic Essay Writing Reflection as a Project-Based Learning to Enhance Creativity
Researcher	:	Astuti Kusuma Wardani
Student Number	:	2103046083
Department	:	English Education

Had been recitified by the board of examiner of Education and Teacher Training Faculty Walisongo State Islamic University Semarang can be received as one any requiretment for gaining the Bachelor Degree in English Language Education.

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NIP. 198008032009012010

Examiner II

Vina Darissuravya, M.App Ling.
NIP.199206242020122008

Advisor

Agus Mutohar, MA., Ph. D.
NIP.198408012019031007

ABSTRACT

Title: **Exploring Student's Perceptions of Project-Based Learning Using Google Sites E-Portfolios for Reflective Academic Essay Writing to Enhance Creativity**

Writer: **Astuti Kusuma Wardani**
NIM: 2103046083
Study Program: Education and Teacher Training Faculty

This study explores student perceptions of using Google Sites for academic essay writing reflection within a Project-Based Learning (PJBL) framework, focusing on its role in enhancing creativity. The research involved 7 students from the English Language Education Department at UIN Walisongo Semarang, selected purposively based on variations in their creativity scores. Using a qualitative approach with interview thematic analysis, the study aimed to explore how project-based learning using Google Sites influenced student's creative processes in writing context. The findings revealed that students viewed PJBL using Google Sites as a helpful tool for organizing ideas, integrating multimedia, and reflecting on their writing process. They appreciated the platform's ability to enhance their creativity, particularly through the opportunity to personalize their e-portfolios and display their progress over time. However, students also noted limitations such as the lack of real-time feedback features and restrictions on collaborative editing. These constraints made it difficult to engage in simultaneous collaboration, which they felt would have enhanced the learning experience. PJBL using Google Sites proved to be an effective tool for fostering creativity, reflective thinking, and engagement in academic essay writing within a PJBL

framework. Despite some limitations in terms of collaboration and feedback, the platform supported students' creative development and provided a valuable opportunity for reflective learning in EFL writing instruction. The study suggests that addressing these limitations could further improve the effectiveness of Google Sites in supporting student-centered learning.

***Keyword**: Project Based Learning, Google Sites E-Portfolio, Creativity, Academic Essay Writing, Student's Reflective*

MOTTO

“1% to 100% need three month over”

“Learning is a journey guided by knowledge from the Almighty through reflection, effort, and purpose, we grow into the best version of ourselves from (QS. Al- ‘Alaq: 5): And He taught man that which he knew not."

DEDICATION

My dissertation is respectfully dedicated to:

1. My dear mother, I am grateful for all that you do. You consistently provide me with love, encouragement, and prayers for my achievements.
2. All of my special family who always makes my days and pray for my successfull.
3. Also for my uncle and aunty who always support me when I study.
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Semarang, 5 May 2025
The Researcher

Astuti Kusuma Wardani
2103046083

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURE

LIST OF APPENDICES

CHAPTER I

INTRODUCTION

A. Background

The integration of technology in education has brought significant changes to the way teaching and learning processes are conducted. One of the most notable approaches is Project-Based Learning (PJBL), which emphasizes active, student-centered learning through real-world projects. This method fosters critical thinking, problem-solving, and creativity, encouraging students to engage deeply with the subject matter. Within PJBL, academic essay writing serves as an essential task that requires students to organize their thoughts, present coherent arguments, and demonstrate their understanding of complex concepts.

In recent years, e-portfolios have gained traction as an effective tool for managing and reflecting on learning outcomes. Google Sites, as an accessible and user-friendly platform, offers an ideal space for students to create, store, and showcase their academic work. More specifically, Google Sites can be utilized as a platform for students to submit their academic essay writing reflections, enabling them to present their thought processes, self-assess their progress, and reflect on the learning journey.

Reflection, a key element in enhancing metacognitive skills, plays a crucial role in promoting creativity. It allows students to critically evaluate their work, identify areas of improvement, and build on their strengths. When applied to the context of academic essay writing in PJBL, reflection becomes a powerful tool for students to recognize how their writing evolves, how they can approach challenges creatively, and how their learning process contributes to the development of innovative ideas.

However, despite the growing use of Google Sites in educational settings, there is limited research on how students perceive the use of this platform for submitting and reflecting on academic essays in the PJBL framework. This study aims to explore students' perceptions of using Google Sites for academic essay writing reflection within Project-Based Learning, particularly focusing on its role in enhancing creativity. Understanding these perceptions can provide valuable insights into the effectiveness of digital tools in fostering reflective practices that support creative thinking in academic writing.

According to Gardner (1993), creativity is the capacity to produce something novel and beneficial. This is especially important when learning a language, as students are expected to communicate their ideas in unique ways. Although it might be difficult at times, developing these abilities helps students think

critically and use language in creative ways, which is very helpful in the learning process. Project-Based Learning is a successful strategy for encouraging creativity in the classroom. PJBL places a strong emphasis on learning by involving students in meaningful and pertinent real-world projects (Thomas, 2000). In addition to inspiring kids, this method fosters teamwork, creativity, and problem-solving. By encouraging students to apply their knowledge in practical settings, PJBL helps them develop their creativity and imagination.

This method fosters both creative and cognitive development, which makes it very advantageous for language learning. PJBL is a teaching approach that involves students in real-world, realistic projects that help them address challenging issues while honing their communication, teamwork, and critical thinking abilities. Students are encouraged to use their imagination and ingenuity to accomplish worthwhile activities in addition to developing their language proficiency. This dynamic, student-centered method fosters deeper learning and improves students' capacity for critical thought, teamwork, and creativity. Project-based learning (PJBL) is a model that organizes learning around projects.

Projects, as defined in PJBL teacher handbooks, are complicated assignments that are based on difficult questions or

problems, involve students in design, problem-solving, decision-making, or investigative activities, allow them to work comparatively independently for extended periods of time, and result in realistic products or presentations. Additional distinguishing characteristics in the literature include specific educational goals, instructor facilitation without direction, authentic evaluation, and authentic content. Reflection, adult skills integration, and cooperative learning (Diehl et al., 1999; Moursund, 1999).

Certain PJBL models supplement these features with a variety of special features. The use of an authentic ("driving") question, a community of inquiry, and cognitive (technology-based) tools are characteristics of "project-based instruction" (Krajcik et al., 1994); "Expeditionary Learning" adds community service, multidisciplinary themes, and comprehensive school improvement (Expeditionary Learning Outward Bound, 1999a).

PJBL initiatives are integral to the curriculum, rather than being supplementary. This standard has two related implications. Firstly, based on this specific aspect, projects represent the curriculum itself. In project-based learning, the project serves as the primary instructional method; students engage with and absorb the key ideas of the subject through this project. There are occasions when project-based tasks follow conventional teaching

methods, functioning to offer examples, illustrations, extra practice, or real-world applications for content delivered through alternative methods. Nonetheless, such "application" projects are not classified as instances of PJBL under this standard. Secondly, the central nature of this standard implies that projects where learners explore content beyond the defined curriculum, often referred to as "enrichment" projects, do not qualify as PJBL, regardless of their attractiveness or interactivity. PJBL initiatives center around questions or challenges that propel students to confront and wrestle with the core concepts and principles of a specific field. This standard requires careful consideration. The project definition (from the students' perspective) should be developed to establish a clear link between the tasks and the fundamental conceptual understanding that one aims to encourage (Barron et al., 1998).

This process is typically initiated with a central inquiry or a vaguely defined issue. PJBL initiatives can be organized around thematic concepts or the convergence of subjects from various fields, but this alone does not define a project (Stepien & Gallagher, 1993). The inquiries that students investigate, along with the tasks, deliverables, and presentations that engage them, must be "orchestrated in the service of an important intellectual purpose" (Blumenfeld et al., 1991).

Projects reflect realism rather than a conventional schooling atmosphere. They possess traits that contribute to a sense of genuine involvement for students. Such traits can encompass the subject matter, the activities involved, the roles assumed by students, the context in which the project unfolds, the collaborators involved in its execution, the end products created, the intended audience for these outputs, or the standards applied for evaluating the outcomes and performances. This variance delineates academic challenges, simulation challenges, and real-world challenges. PJBL embraces authentic challenges that center around genuine (rather than artificial) issues or inquiries, where proposed solutions can actually be applied (Gordon, 1998).

In addition to project-based learning, employing technology in educational settings has emerged as a crucial element in boosting student interest and innovation. One such technological instrument is the implementation of e-portfolios. Batson (2011) clarifies that e-portfolios provide learners with the chances to contemplate their educational experiences, display their inventive work, and highlight their academic achievements. A well-known platform for developing e-portfolios is Google Sites, which enables students to arrange and showcase their work in an interactive and captivating manner. According to Chen & Carver (2009), utilizing digital platforms like Google Sites in educational contexts

encourages creativity by offering students a variety of media such as text, images, and videos for articulating their thoughts. E-portfolios give students a venue to unleash their creativity and originality, allowing them to present their work in a manner that is both engaging and tailored to their personal style. The use of Google Sites E-Portfolio in learning English through project-based learning presents several advantages. This platform allows students to exhibit the results of their projects, reflect on their learning journey, and capture the inventive ideas and insights they have developed throughout the course of the project. Additionally, e-portfolios facilitate ongoing updates and improvements to student work, promoting critical thinking and enhanced self-expression. Thus, this digital resource acts not only as a tool for assessment but also as a channel for boosting creativity and imaginative expression in language acquisition.

While PJBL and e-portfolios generally offer advantages in boosting creativity and imagination, research examining the specific link between implementing Google Sites e-portfolios in PJBL and the advancement of students' creativity and imagination within EFL education remains sparse. Consequently, this research intends to explore the relationship between the application of Google Sites e-portfolios in PJBL and the improvement of creativity and imagination among students in EFL classrooms.

Gaining insight into how Google Sites E-Portfolios can foster creativity and imagination will be beneficial for teachers when crafting more dynamic and stimulating English language learning experiences. Additionally, this investigation holds the promise of aiding in the creation of curricula that are more effectively attuned to the integration of technology, thus motivating students to enhance their English language abilities in more inventive and comprehensive manners.

B. Research Questions

1. What are students perceptions of project-based learning implemented through Google Sites e-portfolios in reflective academic essay writing?
2. How does project-based learning using Google Sites e-portfolios enhance students creativity in academic writing?
3. What are the challenges and benefits students perceive from participating in project-based learning activities involving Google Sites?

C. Research Objectives

1. To explore students' perceptions of project-based leaving implemented through Google Sites e-portfolios inIN reflective academic essay writing.

2. To examine how project-based learning using Google Sites e-portfolios contributes to enhancing students' creativity in academic writing.

3. To identify the perceived challenges and benefits of participating in project-based learning activities that integrate Google Sites.

D. Significant of the Research

1. Theoretical Advantages

From a theoretical perspective, it aids in the advancement of Project-Based Learning (PJBL) theory, especially within the framework of English as a Foreign Language (EFL) instruction. By exploring how Google Sites e-portfolios enhance creativity and imagination, this study deepens the understanding of PJBL potential to foster creative skills in language learning. Additionally, the study contributes to the theory of technology integration in education by illustrating how tools like Google Sites can support creative and imaginative thinking in students. Furthermore, it advances reflection theory in language learning, showing how e-portfolios can encourage students to reflect not only on language skills but also on their personal and creative growth.

2. Academic Benefits

In the realm of academia, this study advances English as a Foreign Language instruction by presenting a novel method that integrates Project-Based Learning with e-portfolios to foster creativity and inventive thinking. The results can act as a benchmark for crafting more original and impactful educational programs. Additionally, this research lays the groundwork for

subsequent inquiries into how PJBL, e-portfolios, and the cultivation of creativity interact across different learning environments. Ultimately, this study provides crucial insights for teachers in the development of innovative, technology-based instructional approaches that captivate students and enhance educational outcomes. These contributions will enhance the existing body of work on language teaching and inform the evolution of English as a Foreign Language instructional technique.

CHAPTER II

REVIEW OF RELATED LITERATURE

A. Previous Research

Recent research has underscored the benefits of project-based learning (PJBL) in improving language development and involvement among learners of English as a foreign language (EFL). For example, Johnson and Smith (2020) revealed that PJBL was not only beneficial for enhancing students' language proficiency but also promoted skills like critical thinking and teamwork. Their results showed that those who engaged in PJBL tasks experienced a notable boost in their speaking and writing skills compared to peers who received traditional teaching methods.

Wang and colleagues (2023) explored how e-portfolios play a part in project-based learning to enhance innovation and analytical thinking among EFL students. Their research highlighted the use of Google Sites for creating e-portfolios as a means to facilitate student cooperation. However, although the study focused on enhancing critical thinking, it did not specifically link Google Sites with students' creativity within the EFL environment. This creates a chance for further investigation into how Google Sites e-portfolios could nurture both creativity and imagination as separate aspects of the learning experience.

The use of e-portfolios in education has gained traction in recent years, particularly as a means to enhance student reflection and self-assessment. Lee & Chang (2019) examined the implementation of e-portfolios in an EFL context and found that they significantly improved students' reflective practices. The study revealed that students who utilized e-portfolios were better

able to articulate their learning processes and outcomes, leading to greater self-awareness and motivation.

Cheng & Li (2022) explored the impact of project-based learning and e-portfolios on students' creativity in EFL contexts. Their findings indicated that the use of Google Sites for creating e-portfolios enhanced students' creativity in English language teaching. However, the study focused more on creativity than imagination and did not deeply examine how Google Sites could enrich both aspects in the EFL learning context. This gap suggests a need for research that specifically investigates the relationship between creativity and imagination through the use of Google Sites.

The importance of creativity and imagination in language learning has been emphasized in several recent studies. Tuan (2021) highlighted that fostering creativity in EFL classrooms can lead to improved language proficiency and greater student engagement. The study found that when students were encouraged to use their imagination in language tasks, they were more likely to produce original and meaningful language output.

Yang et al. (2021) investigated the use of Google Sites-based e-portfolios in project-based learning to enhance creativity and innovation among EFL students. Their results showed that e-portfolios supported student reflection and encouraged their imagination in English language teaching. However, while creativity and innovation were discussed, there was no in-depth exploration of how Google Sites e-portfolios specifically support students' imagination in EFL learning. This presents an opportunity for research that focuses on the relationship between Google Sites e-portfolios, creativity, and imagination.

Liu & Chen (2020) explored the influence of using Google Sites for creating e-portfolios on EFL students' creative thinking.

Their study indicated that Google Sites-based e-portfolios could stimulate creativity and support more effective project-based learning. However, despite discussing creative thinking, there was no exploration of how students' imagination develops within the context of EFL learning. This gap can be addressed by investigating the impact of Google Sites e-portfolios on both imagination and creativity, as well as how these two aspects interact in project-based learning.

Park & Choi (2021) examined how project-based learning and the use of Google Sites e-portfolios could support creativity development in EFL education. Their findings showed that the application of this technology enriched the learning experience and improved students' creative outcomes. However, the study did not delve into how students' imagination develops through Google Sites e-portfolios in project-based learning contexts. This gap suggests a need for research that clarifies how Google Sites e-portfolios help enhance students' imagination in EFL learning.

Tang & Li (2020) assessed the effectiveness of e-portfolios in enhancing both creativity and imagination among EFL learners. Their research indicated that e-portfolios developed using Google Sites provided a platform for students to express their creativity and improve their English language skills. However, while the study touched on both aspects, it lacked an in-depth exploration of how project-based learning connects these two dimensions. Your research could further elucidate the direct relationship between project-based learning and its impact on creativity and imagination through the use of Google Sites e-portfolios.

Despite the growing body of research on PJBL, e-portfolios, and creativity in EFL learning, several gaps remain. First, while many studies have explored the individual impacts of

PJBL and e-portfolios, there is limited empirical evidence examining their combined effects on students' creativity and imagination. Most existing research tends to focus on either creativity or imagination, often neglecting the interplay between the two. Second, while studies such as those by Wang et al. (2023) and Cheng and Li (2022) have highlighted the importance of e-portfolios in enhancing creativity, they do not sufficiently address how these tools can specifically foster imagination in EFL contexts. This lack of focus on imagination as a distinct construct presents an opportunity for further investigation. Third, existing research often emphasizes quantitative measures of language proficiency and creativity, overlooking qualitative aspects that could provide deeper insights into how students experience and express their creativity and imagination through project-based learning and e-portfolios. Finally, there is a need for studies that investigate the specific tools and strategies used within e-portfolios to foster creativity and imagination in project-based learning environments. Understanding how Google Sites, in particular, can be leveraged to enhance these dimensions of learning could provide valuable insights for educators.

The literature reviewed indicates a strong correlation between project-based learning, the use of e-portfolios, and the enhancement of creativity and imagination in EFL contexts. However, the identified gaps highlight the necessity for further empirical research that specifically examines the interplay between these elements. This study aims to address these gaps by exploring the correlation between project-based learning using Google Sites e-portfolios and students' creativity and imagination in EFL

learning. By focusing on how Google Sites can support both creativity and imagination, this research will contribute to a more comprehensive understanding of effective pedagogical strategies in EFL education.

Reflective writing has been recognized as a vital pedagogical tool to enhance students' critical thinking, writing skills, and metacognitive awareness, particularly in English as a Foreign Language (EFL) contexts. Several studies have investigated students' experiences and perceptions of reflective essay writing and the pedagogical implications it carries.

Sharif and Zainuddin (2016) explored students' perceptions of reflective essay writing and the feedback they received from instructors. Their findings revealed that while students acknowledged the significance of reflective writing for their academic growth, they often found the feedback provided by instructors insufficient in guiding the development of their reflective skills. This highlights a need for more structured and supportive feedback mechanisms within reflective writing practices.

Similarly, Abrouq (2024) conducted a mixed-methods study on the impact of reflective journal writing on Moroccan EFL Master's students' reflective thinking. The study demonstrated that reflective journal writing significantly improved students' abilities to engage in reflective thinking, thus reinforcing the pedagogical value of reflection in higher education. However, the focus remained largely on journal writing and did not specifically examine structured academic essay writing as a medium for reflection.

Further, Aliyu et al. (2024) investigated the use of reflective journal writing to develop undergraduate students' metacognitive awareness in ESL writing. Their findings emphasized that reflective journals can foster greater self-awareness and autonomy in writing processes. Nevertheless, the study primarily addressed general writing skills without targeting academic essay writing structures or specific task-based approaches.

Moreover, research by Ni'ma, Sumardi, and Tarjana (2020) analyzed students' perceptions of reflective journals as self-assessment tools to promote writing skills in an EFL class. They concluded that while reflective journals positively influenced students' writing development, challenges such as maintaining motivation were prevalent. The scope, however, was limited to personal reflections rather than critical academic essay writing integrated within project-based frameworks.

Lastly, Siahaan et al. (2021) examined the influence of reflective journal authentic assessments on students' writing competence and motivation. Their findings indicated a significant positive effect, yet the study centered on authentic assessments rather than exploring the role of digital platforms, such as Google Sites, in facilitating reflective academic writing tasks.

While existing studies underline the benefits of reflective journal writing for enhancing students' reflective thinking, metacognitive awareness, and writing competence, limited research has specifically addressed students' reflections on academic essay writing within a project-based learning (PJBL) context. Additionally, there is a scarcity of studies exploring the use of Google Sites as a digital platform for collecting academic essays and facilitating student reflection.

Thus, this study aims to bridge these gaps by investigating student perceptions of using Google Sites as a medium for academic essay writing reflection within a PJBL framework, with a particular focus on its potential to enhance students' creativity. By focusing on academic essay writing rather than general journaling and integrating a technological platform for submission and reflection, this study contributes a fresh perspective to the intersection of reflective practice, technology integration, and creative skill development in EFL education. Although existing research has consistently highlighted the benefits of project-based learning (PJBL), e-portfolios, and reflective writing in enhancing EFL students' language proficiency, critical thinking, and creative skills, several important gaps remain that warrant further exploration. First, while studies such as those by Johnson & Smith (2020) and Wang et al. (2023) have explored how PJBL and e-portfolios enhance language skills, teamwork, and innovation, they have not specifically examined how Google Sites can be used to support reflective academic essay writing as a means to foster creativity. Most prior research has treated writing and creativity as separate domains, with limited exploration of structured academic writing tasks (like essays) as vehicles for creativity development.
Second, several researchers, including Cheng & Li (2022) and Liu & Chen (2020), noted the potential of Google Sites e-portfolios in enhancing creativity. However, these studies often emphasized general project outcomes or digital portfolios, without a targeted focus on academic reflective writing. They also tended to explore creativity in broader, less structured tasks, rather than linking it directly to essay-based reflective practices embedded in PJBL. Third, studies on reflective writing in EFL contexts—such as those by Sharif & Zainuddin (2016), Abrouq (2024), and Aliyu et al.

(2024)—primarily focused on journal writing or instructor feedback, with little emphasis on academic essay writing as a reflective tool. These studies demonstrated the benefits of reflection for metacognitive development and self-awareness, but did not integrate this reflection within a technology-enhanced PJBL framework, nor did they explore its creative potential. Fourth, while researchers like Ni'ma et al. (2020) and Siahaan et al. (2021) acknowledged the value of reflective practices for improving writing competence and motivation, they often limited their scope to paper-based reflections or authentic assessments. The use of digital platforms such as Google Sites, particularly as a tool to combine academic reflection, creativity, and project-based learning, has not been sufficiently addressed in prior work.

There is a noticeable lack of research combining all the following elements: (1) reflective academic essay writing, (2) implementation of Google Sites as a digital portfolio platform, (3) within a PJBL framework, and (4) focusing specifically on student perceptions of how such practices enhance creativity. Most existing research isolates these components rather than examining their interconnection in a unified learning strategy.

To fill these gaps, this study investigates student perceptions of using Google Sites for academic essay writing reflection in a PJBL context, with the goal of enhancing creativity. By integrating structured academic writing, reflective practice, digital technology, and project-based pedagogy, this research offers a novel approach to understanding how creative thinking can be cultivated through reflective academic writing using e-portfolios in EFL education.

B. Literature Review

2.1 Project-Based Learning

Project-Based Learning (PJBL) is a constructivist instructional approach that emphasizes active, student-driven learning through the investigation of real-world problems and the development of tangible products. According to Thomas (2000), PJBL is not simply “doing projects” at the end of a lesson but is a comprehensive learning model where the project is the core of the curriculum. The process is structured in several sequential stages, often referred to as the PJBL syntax, which ensures that learning outcomes are achieved through inquiry, collaboration, and reflection.

1. Starting with a Driving Question or Challenging Problem

The first stage of PJBL involves introducing a driving question or challenging problem that is central to the entire learning process. This question should be open-ended, complex, and aligned with learning goals, stimulating students' interest and engagement. Larmer and Mergendoller (2010) define a driving question as one that "captures the heart of the project in clear, compelling language, which gives students a sense of purpose and direction." It serves as a catalyst for inquiry and guides students throughout their learning journey. The question is typically rooted in real-life contexts,

allowing students to see the relevance of their learning beyond the classroom.

2. Designing a Plan for the Project

Once the driving question has been established, students and teachers collaborate to develop a detailed plan for the project. This includes identifying learning objectives, selecting resources, outlining tasks, assigning group roles, and determining assessment criteria. According to Krajcik and Blumenfeld (2006), involving students in the planning process encourages autonomy, critical thinking, and accountability. During this phase, students are also encouraged to set personal learning goals and identify potential challenges they may encounter, promoting self-regulation and proactive problem-solving.

3. Creating a Schedule for Project Activities

After planning, the next step is to develop a schedule for implementing the project. This schedule should provide a clear timeline for each stage of the project, including research, development, review, revision, and presentation. Effective time management is essential for ensuring that the project progresses smoothly and meets deadlines. Markham et al. (2003) argue that scheduling teaches students organizational skills, helps them prioritize tasks, and fosters a sense of responsibility over their work.

Teachers play a key role in guiding students to balance flexibility with structure during this stage.

4. Monitoring the Progress of the Project

Throughout the implementation of the project, teachers continuously monitor student progress, providing support, resources, and formative feedback. The teacher acts as a facilitator rather than a lecturer, allowing students to take ownership of their learning while ensuring they remain focused and productive. According to Thomas (2000), effective monitoring involves observing group dynamics, checking for understanding, addressing misconceptions, and scaffolding learning when necessary. This stage also involves informal assessments to ensure students are meeting learning objectives and adapting as needed.

5. Assessing the Outcome

Upon completion of the project, students present their final product to an audience, which may include peers, teachers, parents, or community members. The product can take many forms—such as a written report, a multimedia presentation, a website, or a prototype—depending on the nature of the project. Assessment in PJBL is multifaceted, covering both the process and the product. Bell (2010) emphasizes the importance of using rubrics that assess collaboration, creativity, content knowledge, and presentation skills. Authentic assessment not only measures academic

achievement but also evaluates soft skills such as communication and teamwork.

6. Reflecting on the Learning Experience

The final stage of the PJBL syntax is reflection. Students are encouraged to reflect on what they have learned, the strategies they used, and how they overcame challenges during the project. This reflection helps consolidate knowledge, promote metacognition, and improve future performance. Kolodner et al. (2003) highlight that reflection is crucial in PJBL because it links students' experiences with academic content, fostering deeper understanding. In the digital age, platforms like Google Sites e-Portfolio can be used to facilitate reflection, allowing students to document their learning journey, showcase their work, and track their personal growth over time.

2.2 Google Sites E-Portfolio

Incorporating technology into Project-Based Learning (PJBL) has become an essential practice to foster creativity, collaboration, and digital literacy. One of the most effective tools for supporting the PJBL process is Google Sites, a platform that allows students to create digital portfolios to document their learning journey. Google Sites e-portfolios serve not only as a repository for students' work but also as a space for reflection,

collaboration, and presentation, aligning seamlessly with the syntax of PJBL.

The use of Google Sites e-portfolios begins as students encounter the driving question or challenging problem of their project. This platform provides a digital space where students can post the central question, outline project goals, and display initial brainstorming ideas. Google Sites allows for the inclusion of multimedia elements such as images, videos, and hyperlinks to research sources, which can stimulate further inquiry. This feature makes it easier for students to visualize and explore the driving question in a dynamic and engaging format. Furthermore, teachers can guide students in formulating the driving question by providing resources and links through the e-portfolio itself, enhancing accessibility and collaboration.

Once the project plan is developed, Google Sites e-portfolio offers a collaborative platform where students can collectively design their approach to solving the driving question. The digital environment allows students to create pages for different aspects of the project, such as research, tasks, roles, and milestones. Students can upload documents, share links to resources, and collaboratively edit the project plan, making it a dynamic and continuously evolving document. This aligns with Krajcik and Blumenfeld's (2006) assertion that student

involvement in planning and decision-making fosters critical thinking and responsibility. In addition, teachers can provide real-time feedback and suggestions through the platform's commenting features, ensuring students stay on track with their objectives.

Google Sites e-portfolio can also be used to create and manage a project timeline. By adding a calendar or timeline page to their portfolio, students can set deadlines for each task, track their progress, and adjust timelines as needed. This scheduling feature encourages time management skills, as students must prioritize tasks and ensure timely completion of each phase. The interactive nature of the platform allows for real-time updates, so students and teachers can monitor progress together. Markham et al. (2003) highlight the importance of time management and structure in PJBL, which is easily facilitated through Google Sites' customizable layout and organization tools.

During the project implementation phase, Google Sites acts as a central hub for tracking progress. Students can upload drafts, share results, and report challenges or successes on their e-portfolio pages. Teachers can monitor student progress by reviewing the e-portfolio, providing formative feedback, and offering guidance through comments and suggestions. Google Sites facilitates asynchronous communication, allowing students and teachers to interact despite time and space limitations. This

stage of monitoring is essential for maintaining momentum, ensuring that students remain focused on the project goals and are not sidetracked by minor setbacks. According to Thomas (2000), continuous monitoring through collaborative tools like Google Sites helps students maintain engagement and overcome obstacles.

The final product in PJBL is assessed not only for its academic content but also for its collaborative process. Google Sites e-portfolios allow students to present their completed projects, including multimedia elements such as presentations, videos, and interactive features. The e-portfolio serves as a platform for students to demonstrate their learning outcomes and showcase their work to a wider audience, such as peers, teachers, and even parents. In alignment with Bell's (2010) idea of authentic assessment, the e-portfolio allows for a holistic evaluation of both the product and the process. Teachers can use rubrics embedded in the portfolio to assess students' creativity, problem-solving skills, teamwork, and presentation abilities. Additionally, students can self-assess and reflect on their work, which fosters metacognitive skills and promotes a deeper understanding of the learning process.

Reflection is a core component of the PJBL model, and Google Sites e-portfolios provide an ideal platform for students to engage in this reflective practice. By adding a dedicated "Reflection" page, students can document their thoughts,

challenges, and learning experiences throughout the project. The digital portfolio allows students to revisit their initial ideas, compare them with the final outcomes, and track the growth of their skills over time. Kolodner et al. (2003) emphasize that reflection supports metacognition, helping students connect their project experiences with academic content. Through this process, students can better understand their strengths and areas for improvement, setting goals for future projects. The e-portfolio's ability to store and organize reflection entries over time also creates a longitudinal record of student development.

2.3 Student Creativity

Creativity is an essential component of learning, particularly in approaches like Project-Based Learning (PJBL), where students are encouraged to engage with real-world problems and develop innovative solutions. The theory of creativity encompasses various dimensions, and understanding these dimensions is crucial for fostering creativity in educational settings. Below is the syntax of creativity theory, outlining its key components and how they relate to the learning process.

Creativity is often defined as the ability to produce novel and useful ideas, solutions, or products that are original and appropriate to a given context (Runco & Jaeger, 2012). It involves

not only the generation of new ideas but also the evaluation and refinement of those ideas to ensure their relevance and usefulness. According to Amabile (1996), creativity in the context of education involves both intrinsic motivation and the use of cognitive processes such as problem-solving, ideation, and synthesis. Creativity is not just an innate trait but a skill that can be cultivated through exposure to challenges, diverse perspectives, and opportunities for self-expression.

The theory of creativity can be broken down into several components, each of which contributes to the overall creative process: Fluency: The ability to generate a large number of ideas or solutions in response to a given prompt. This is an essential aspect of creativity because it allows individuals to explore a wide range of possibilities and alternatives. In the context of PJBL, fluency can be seen in students' ability to generate multiple ideas for solving a driving question or addressing a project challenge (Guilford, 1956). Flexibility: The ability to shift perspectives and approach problems from different angles. Flexibility allows individuals to adapt their thinking in response to new information, changing conditions, or feedback. In PJBL, flexibility is particularly important as students need to pivot their approach as they engage with the complexities of real-world problems (Sternberg & Lubart, 1999). Originality: The ability to produce

ideas that are novel and uncommon. Originality is often what distinguishes creative individuals from others, as it reflects the uniqueness of their thought processes. In educational settings, fostering originality can lead to innovative solutions to project-based challenges (Runco, 2004). Elaboration: The ability to develop and refine ideas in great detail. Elaboration allows ideas to evolve and gain depth, making them more feasible and actionable. In the PJBL context, elaboration is crucial for transforming an initial concept into a final product or solution, whether it is a prototype, presentation, or report (Guilford, 1956).

Creativity involves both divergent thinking and convergent thinking, which are complementary cognitive processes. Divergent thinking refers to the ability to generate a wide variety of possible solutions to a problem or task. It is associated with the early stages of the creative process, where individuals explore many different avenues and possibilities (Guilford, 1956). On the other hand, convergent thinking involves narrowing down the possibilities to select the most effective solution. This stage is important for refining ideas and turning creative thoughts into practical and implementable outcomes. PJBL encourages both types of thinking: divergent thinking during the brainstorming and research phases and convergent thinking during the implementation and assessment phases.

According to Amabile (1996), motivation plays a significant role in creativity. Intrinsic motivation, which is driven by personal interest and enjoyment of the task, has been shown to enhance creative performance. In contrast, extrinsic motivation, such as external rewards or pressures, may hinder creativity if it reduces intrinsic motivation. In the PJBL framework, fostering intrinsic motivation is key to promoting creativity, as students are more likely to engage deeply and produce creative solutions when they feel personally connected to the project. Teachers can encourage intrinsic motivation by providing autonomy, meaningful tasks, and opportunities for students to explore their interests within the project.

Creativity is not a solitary activity but often involves collaboration and interaction with others. According to Sawyer (2006), creativity thrives in social environments where individuals can share ideas, provide feedback, and build upon each other's contributions. In PJBL, collaboration is essential, as students work together to solve complex problems, exchange perspectives, and co-create solutions. Collaborative creativity leads to more diverse and innovative ideas, as students with different backgrounds and skill sets bring unique perspectives to the table.

The environment plays a critical role in fostering creativity. A supportive and stimulating environment encourages risk-taking,

experimentation, and exploration. In educational settings, teachers can create a conducive environment for creativity by providing resources, reducing fear of failure, and offering constructive feedback (Csikszentmihalyi, 1996). In PJBL, the classroom environment should encourage students to take risks, experiment with new ideas, and learn from both their successes and failures. Furthermore, integrating digital tools like Google Sites e-portfolios enhances the creative process by allowing students to share, revise, and showcase their work in a flexible and interactive manner.

Creativity is a multidimensional process that is essential for solving complex, real-world problems in educational settings. The theory of creativity, as outlined by key scholars, emphasizes the importance of fluency, flexibility, originality, and elaboration as core components of creative thinking. In Project-Based Learning (PJBL), these components are cultivated through collaboration, divergent and convergent thinking, and fostering intrinsic motivation. The integration of digital tools such as Google Sites e-portfolios enhances this creative process, providing a platform for students to collaborate, reflect, and present their ideas. By understanding and applying creativity theory, educators can design learning environments that not only nurture creativity but also prepare students to think critically and innovatively in a rapidly changing world.

2.4 Student's Academic Essay Writing Reflection

1. Introduction to the Reflection

In this section, the student provides context for the reflection, including the purpose and scope of the essay.

2. Prewriting and Planning

This section focuses on how the student approached the initial stages of the essay, including planning and organizing the structure.

3. Writing the Draft

This section focuses on the actual writing process, reflecting on the drafting of the essay.

4. Revising and Feedback

This section involves reflecting on the revision process and feedback received from peers, instructors, or tutors.

5. Challenges Encountered

In this section, the student discusses the challenges faced during the writing process.

6. Personal Insights and Growth

This section looks at what the student has learned from the essay writing process and how it has contributed to their development as a writer.

7. Conclusion of the Reflection

The conclusion summarizes the main points of the reflection and outlines plans for future writing tasks.

2.5 Integrating Student's Creativity, Google Sites E-Portfolio and PJBL Academic Essay Writing Reflection

The integration of student creativity, Google Sites e-portfolios, and Project-Based Learning (PJBL**)** offers a powerful framework for enhancing student engagement, creativity, and reflection in academic writing. In this context, creativity is viewed as a key component that drives students' ability to think critically, explore innovative ideas, and solve complex problems. This framework not only helps students develop their academic skills but also encourages personal growth through reflective practices.

1. Student Creativity in Academic Essay Writing

Creativity in academic essay writing involves students' ability to generate original ideas, construct logical arguments, and express thoughts in a coherent and innovative manner. In the context of Project-Based Learning (PJBL), creativity plays a crucial role in how students engage with the driving question or problem, as they are encouraged to explore various perspectives and solutions. As students work through the PJBL process, they apply creativity in several ways:

a. Fluency: The ability to generate a large number of ideas related to the essay topic.
b. Flexibility: The ability to approach essay writing from multiple angles, considering different viewpoints.
c. Originality: The generation of novel arguments or analysis that showcase independent thinking.
d. Elaboration: The development of ideas in depth, providing detailed evidence and analysis.

In academic essay writing, fostering creativity allows students to move beyond formulaic writing styles and express their unique

perspectives. Encouraging creativity enhances the quality of written work and supports students in developing critical thinking skills, which are central to academic success.

2. Google Sites e-Portfolio as a Tool for Reflection and Creativity

Google Sites e-portfolios serve as a powerful tool for documenting and reflecting on the learning journey. In the context of PJBL, the e-portfolio becomes a digital space where students can track their progress, collect evidence of their work, and reflect on their learning experiences. This digital platform provides an opportunity for students to integrate their academic writing reflections and creative processes in a dynamic, accessible way.

a. Documentation of Process: Through their e-portfolios, students can document their brainstorming, research, and writing processes, including drafts, notes, and outlines. This provides a tangible record of the development of their academic essay and creative ideas.
b. Reflective Practices: The e-portfolio includes sections where students can reflect on their learning, identify challenges, and assess their creative growth. These reflections are crucial for improving self-awareness and helping students connect theory with practice. Reflection encourages metacognition, allowing students to critically evaluate their approach to the writing task, the solutions they developed, and the creative strategies they employed.
c. Creativity Enhancement: Google Sites allows students to incorporate multimedia elements such as images, videos, and hyperlinks, which enhance the creative expression in their e-portfolio. These elements offer students new ways to showcase their academic essays, reflect on their

learning, and demonstrate their creativity beyond traditional written formats.

3. Project-Based Learning (PJBL) as a Framework for Creativity in Writing

Project-Based Learning (PJBL) involves students working on a real-world problem or project over an extended period. The PjBL framework is characterized by a driving question or challenge, where students must apply their creativity to develop solutions. In the case of academic essay writing, PjBL encourages students to approach their writing as a process of inquiry, where they are not just responding to prompts but critically engaging with complex issues.

a. Collaboration: In PJBL, students often work in groups, which allows them to collaborate, share ideas, and refine their thoughts. The collaborative nature of PJBL helps stimulate creativity, as students bring diverse perspectives to the table. This can be particularly beneficial in academic essay writing, where multiple viewpoints can enrich the depth and quality of the analysis.
b. Critical Thinking: PJBL encourages students to think critically about the issue at hand and explore various solutions. For academic essay writing, this approach allows students to engage with their topic at a deeper level, using creative thinking to formulate original arguments and analyze sources.
c. Authenticity: PJBL emphasizes real-world relevance, which increases student engagement and motivation. When students see their writing as contributing to a broader issue or context, they are more likely to be invested in producing high-quality, creative work. The

real-world aspect of PJBL makes academic writing feel meaningful and purpose-driven, leading to more engaged and innovative writing processes.

4. Integrating Reflection in Academic Essay Writing

Reflection in academic essay writing is an essential aspect of the writing process, as it enables students to assess their progress, refine their ideas, and enhance their writing skills. By integrating reflection into the PJBL framework, students can use their e-portfolio as a space to critically analyze their work and development over time.

a. Self-Assessment: Students can regularly reflect on their writing progress, identifying areas for improvement and setting goals for future writing tasks. This practice promotes growth by encouraging students to take ownership of their learning.
b. Formative Feedback: Through the e-portfolio, students can share their writing with peers and teachers, receiving constructive feedback that helps them refine their ideas and improve the clarity and quality of their arguments. Reflecting on feedback is crucial for creative development in writing, as it allows students to revise and adapt their work based on external perspectives.
c. Longitudinal Reflection: As students continue to add to their e-portfolio, they can track their growth over time, reviewing earlier drafts and comparing them to their current work. This longitudinal reflection helps students recognize how their creativity and writing skills have evolved throughout the course or project.

Integrating student creativity, Google Sites e-portfolios, and Project-Based Learning (PJBL) provides a comprehensive

framework for enhancing academic essay writing. By encouraging creativity in writing, fostering reflection through e-portfolios, and utilizing the PJBL process, students develop critical thinking, problem-solving, and collaborative skills. This integrated approach not only enhances the quality of academic essays but also promotes deeper engagement, personal growth, and a more meaningful learning experience. Through the combination of creativity, digital reflection, and real-world inquiry, students are empowered to approach writing tasks innovatively and reflectively, ultimately becoming more effective and thoughtful writers.

F. Conceptual Framework

Variable X

Project-Based Learning (PBL) Using Google Sites E-Portfolio

a. Collaboration among students.
b. Inquiry-based tasks or real-world problems.
c. Active learning through creating, designing, and producing work.
d. Focus on skill development (communication, research, critical thinking).
e. Platform for organizing and displaying students' work.
f. Reflection and self-assessment of the learning process.
g. Integration of various multimedia elements (e.g., text, images, videos).
h. A tool for feedback and assessment from peers

Variable Y1

Creativity

a. Originality in ideas and work.
b. Ability to approach language tasks in innovative ways.
c. Expression through multimedia or artistic content in the e-portfolio.

CHAPTER III
RESEARCH METHODS

A. Research Design

This study adopts a qualitative research design to gain an in-depth understanding of students' perceptions and experiences regarding the use of Google Sites e-portfolios in reflective academic essay writing within a Project-Based Learning (PJBL) framework. Data are collected through semi-structured interviews, allowing participants to share their insights, feelings, and reflections in their own words. The collected data are then analyzed using thematic analysis to identify recurring patterns, themes, and meanings that emerge from students' narratives. This approach is considered appropriate for exploring the subjective and contextual factors that influence students' engagement and creativity development when participating in project-based learning activities that incorporate Google Sites as a reflective tool.

Variables of the Study:

Independent Variable (X): Use of Google Sites for Academic Essay Writing Reflection as Project-Based Learning

Dependent Variables (Y1): Student's creativity

B. Population and Sample

This study employed a qualitative research design with purposive sampling as the sampling technique. A total of 7 participants were selected based on specific criteria: they had previously engaged in Project-Based Learning (PJBL) using Google Sites e-portfolios as part of the Academic Essay Writing course. The purposive sampling approach was chosen to ensure that the participants possessed relevant experience and could provide rich, detailed insights into the use of e-portfolios in the learning process. The selection aimed to gather diverse perspectives from students who had been directly involved in creating reflective academic essays through Google Sites within a PJBL context. This targeted sampling strategy allowed the researcher to explore the participants' perceptions and experiences in depth, aligning with the qualitative nature of the study.

C. Data Type and Source

Primary Data:

1. Interviews with students about their experiences using Google Sites E-Portfolios in Project-Based Learning.

Secondary Data:

1. Literature and previous studies on Project-Based Learning, e-portfolios, creativity, and imagination in EFL learning.
2. Educational and technological theories supporting the research.

D. Data Collection Methods

Responses to the written interview will be collected directly from the platform (WhatsApp). These responses will be stored in a secure document for further analysis. If necessary, the data will be transcribed from text formats into coded data for thematic analysis.

E. Research Instruments

Responses to the written interview will be collected directly from the chosen online platform, namely WhatsApp, where participants will respond to a set of semi-structured interview questions in written text form. The interview instrument consists of open-ended questions designed to explore students' perceptions regarding the use of Google Sites for academic essay

writing reflection in Project-Based Learning and how this experience relates to the enhancement of their creativity. These questions are constructed based on relevant literature and theoretical frameworks involving Project-Based Learning, digital tools in education, and components of student creativity (such as fluency, flexibility, originality, and elaboration).

The questions are formulated to prompt participants to reflect on their learning experiences, express personal opinions, and describe specific examples or challenges they encountered. The use of written interviews allows students to respond thoughtfully at their own pace without the pressure of real-time verbal interaction.

The written responses collected via WhatsApp will be documented and compiled into a secure file for organization and analysis. If needed, the data will be carefully transcribed into a formal document, then coded and categorized using a thematic analysis approach to identify recurring patterns, themes, and insights that relate to the research questions. This qualitative instrument aims to complement the quantitative findings and provide a deeper understanding of student perspectives.

Tabel 3.1 **Interview Guideline of PJBL Google Sites E-Portfolio and Student's Creativity**

Variable	Theory	Indicators	Items of Instruments
Project-Based Learning using Google Sites	Vygotsky (1978)	Collaboration among students	"How was your experience collaborating with classmates in composing reflective academic essay writing through Google Sites e-Portfolio?"
	Dewey (1938)	Inquiry-based tasks or real-world problems	How did the Google Sites e-Portfolio help you explore and organize information related to the topic of your academic essay writing reflection?
	Thomas (2000) & Bell (2010)	Active learning through creating, designing, and producing work	"What elements did you create or develop on your own in the Google Sites e-Portfolio while composing your reflection (e.g., images, videos, hyperlinks, layout, etc.)?"
	Partnership for 21st Century Learning, (2007)	Focus on skill development (communication, research, critical thinking)	Was it easy for you to communicate your ideas in writing using the Google Sites e-Portfolio for reflection? Why?
	Barrett (2007)	Platform for organizing and displaying students' work.	Did the Google Sites e-Portfolio help you organize different parts of your essay reflection more easily? Please explain.
	Kolb's (1984)	Reflection and self-assessment of the learning process	How did the Google Sites e-Portfolio support you in reviewing your overall learning process in understanding academic essay writing?
	Mayer (2005)	Integration of various multimedia elements (e.g., text, images, videos)	How did you integrate various multimedia elements (text, images, videos) when creating your academic essay reflection in the Google Sites e-Portfolio?
	Nicol & Macfarlane-Dick (2006)	A tool for feedback and assessment from peers and instructors.	How was the process of giving or receiving feedback conducted through the Google Sites e-Portfolio platform?
Student's Creativity	Torrance (1974)	Originality in ideas and work	Did the Google Sites e-Portfolio provide you with enough space to showcase your unique writing style or approach? Please explain.
	Guilford (1967)	Ability to approach language tasks in innovative way	How did the features of Google Sites e-Portfolio encourage you to think more creatively in presenting your academic reflections?
	Gardner (1983) & Kress & van Leeuwen (2001)	Expression through multimedia or artistic content in the e-portfolio	How did you use multimedia or artistic content (such as images, videos, graphics) to express your ideas in your academic essay reflection on Google Sites e-Portfolio?

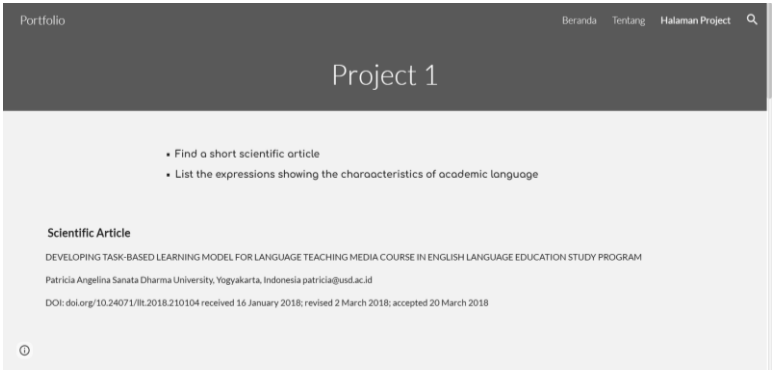

Figure 3.1 Sample Display of Google Sites E-Portfolio Used by Students

The picture illustrates a student-created Google Sites e-portfolio layout, showcasing a clean and structured digital interface designed for documenting learning progress and creative projects.

The homepage features a personalized title banner, navigation bar with various sections (such as “About Me”, “Projects”, “Reflections”, and “Gallery”), and embedded multimedia elements. Visual content like images and videos are arranged alongside written reflections, demonstrating how students integrate language skills and creativity within a user-friendly digital format. The site exemplifies how learners can take ownership of their educational journey, organize their artifacts, and express their imagination in English as a Foreign Language (EFL) learning.

F. Data Analysis Methods

The qualitative data in this study is obtained from students' written responses through online interviews conducted via WhatsApp. The analysis of this data employs thematic analysis, which is suitable for identifying, analyzing, and reporting patterns (themes) within textual data.

The steps for analyzing the interview data are as follows:

1. Familiarization with the Data
   The researcher will begin by reading and re-reading the written interview responses to become deeply familiar with the content. This process ensures an initial understanding of participants' perceptions and experiences.
2. Transcription and Organization
   The interview responses, though already in written form, will be compiled and reformatted if necessary to ensure consistency. Each participant's responses will be labeled with a code (e.g., P1, P2, etc.) to maintain anonymity.
3. Coding
   The next step involves systematically coding significant statements and expressions that relate to the use of Google Sites in Project-Based Learning and its impact on creativity. Codes are short phrases or labels that capture the essence of the data segments.
4. Generating Themes
   The codes will then be grouped into broader categories or themes that reflect the core ideas found across the interviews. These themes will represent patterns such as

perceived benefits, challenges, creative engagement, and reflection quality.

5. Reviewing and Refining Themes
   The identified themes will be reviewed to ensure they accurately represent the data and are distinct from each other. This step may involve merging, splitting, or renaming themes to better reflect participants' experiences.
6. Interpreting and Reporting Findings
   Finally, the researcher will interpret the themes in relation to the research questions and theoretical framework. Illustrative quotes from participants will be included in the findings to support the analysis and provide deeper insight into students' perceptions.

Throughout the analysis process, the researcher will aim for credibility and trustworthiness by maintaining detailed documentation, practicing reflexivity, and, if necessary, conducting member checks or peer debriefing to validate the interpretations.

CHAPTER IV

RESEARCH FINDING AND DISCUSSION

A. Overview of the Research Process

This study was conducted at UIN Walisongo Semarang in March 2025 using a qualitative research design. The research focused on exploring students' perceptions and experiences of using Google Sites e-portfolios in reflective academic essay writing within a Project-Based Learning (PJBL) framework. The participants consisted of 7 students who were selected through purposive sampling based on specific criteria namely, having previously completed PJBL tasks using Google Sites e-portfolios in the Academic Essay Writing course. Qualitative data were collected through semi-structured interviews and analyzed using thematic analysis. This process involved transcribing the interviews, coding the data, and identifying recurring themes to uncover deeper insights into how the integration of Google Sites within PJBL activities influenced students' engagement and creativity.

B. Research Findings

This chapter presents the findings from the interviews with seven participants who engaged in Project-Based Learning (PJBL) using Google Sites e-portfolios in the Academic Essay Writing course. The data were analyzed using thematic analysis to identify key patterns in the students' perceptions and experiences. Three main themes emerged from the data analysis: (1) Perceptions of Using Google Sites E-Portfolio; (2) Impact of PJBL on

Engagement and Creativity; and (3) Challenges Encountered During the Learning Process.

4.1 Perceptions of Using Google Sites E-Portfolio

Thematic analysis of the interview data revealed 11 distinct themes related to students' perceptions of using Google Sites e-portfolios in the context of Project-Based Learning for academic essay writing. These themes reflect a wide range of experiences, attitudes, and reflections shared by the participants. The themes are as follows:

Theme 1: Collaboration among Students

The interview findings revealed that collaboration was a key aspect experienced by students while using Google Sites in Project-Based Learning. This collaboration occurred not only through task division but also via discussions, peer feedback, and real-time joint editing. Participants shared that Google Sites allowed them to work simultaneously, exchange ideas, and provide comments effectively, even when working remotely. Table 4.1 summarizes the coded excerpts reflecting students' experiences related to collaboration.

Table 4.1 **Coded Interview Data on Student Collaboration through Google Sites**

Informant	Code	Quote/Excerpt
C.P.1.1	Working together by dividing tasks	"…we could divide the tasks among team members to collaborate effectively."
C.P.2.1	Collaborating in real-time	"…easier to access and work simultaneously with my classmates…"
C.P.3.1	Sharing and discussing ideas	"…we could exchange ideas about what to write and how to present it."

Informant	Code	Quote/Excerpt
C.P.4.1	Giving comments on peers' work	"…add comments or reflections on my classmates' Google Sites."
C.P.5.1	Delayed collaboration due to group waiting	"…had to wait for everyone to submit their parts… before combining them…"
C.P.6.1	Remote collaboration through feedback	"…exchange ideas and give direct feedback without having to meet in person…"
C.P.7.1	Each member had individual responsibilities	"…each person had their own role in completing different parts of the project."

As shown in Table 4.1, students experienced various forms of collaboration during the project. These included working together by dividing tasks (C.P.1.1), real-time collaboration (C.P.2.1), sharing and discussing ideas (C.P.3.1), and providing comments on peers' work (C.P.4.1). While most participants highlighted the benefits of immediate collaboration, some also noted challenges, such as delayed progress due to waiting for group members (C.P.5.1). Nonetheless, remote collaboration was still possible through feedback (C.P.6.1), and each member took responsibility for specific parts of the project (C.P.7.1). These findings demonstrate that Google Sites enabled flexible, interactive, and student-driven collaboration throughout the learning process.

Theme 2: Inquiry-Based Tasks or Real-World Problems

In relation to inquiry-based tasks, participants highlighted how Google Sites supported the organization and presentation of real-world content. Students found it helpful for exploring topics deeply and critically, particularly in terms of academic essay

writing. Features such as customizable templates, multimedia integration, and structured layout options enabled them to collect, manage, and present information more effectively. For example, participants noted the ease of organizing sources, adding visuals, and reflecting on their findings through a more systematic format. Table 4.1 displays the coded data reflecting students' experiences with inquiry-based or real-world learning tasks.

Table 4.2 **Coded Interview Data on Inquiry-Based Tasks or Real-World Problems**

Informant	Code	Quote/Excerpt
IB.P.1.1	Easy to use for organizing content	"Google Sites has simple and user-friendly features... templates for reflections or portfolios that students can fill in."
IB.P.2.1	Helps structure and enrich content	"...organize the information I wanted to present in a more neat and systematic way... add visuals and infographics..."
IB.P.3.1	Collect and manage references in one place	"...collect various sources like articles, videos, and essay examples, all stored in one easily accessible place."
IB.P.4.1	Uses multimedia to support content	"...organize information well by adding photos, videos, or hyperlinks."
IB.P.5.1	Structured layout for tasks	"...create sub-sections, allowing us to organize tasks according to our needs."
IB.P.6.1	Deep exploration and structured reflection	"...explore my essay topic more deeply and organize my research findings and reflections neatly on the site."
IB.P.7.1	Features inspired curiosity to explore topics	"...an initial appeal or curiosity factor that encouraged me to explore them."

As shown in Table 4.2, students reported that Google Sites was easy to use for organizing and presenting content (IB.P.1.1), and it helped them structure their ideas more systematically (IB.P.2.1). They appreciated being able to collect and manage various sources in one place (IB.P.3.1), and the ability to

incorporate multimedia elements such as images, videos, and hyperlinks to enrich their work (IB.P.4.1). The platform's structured layout supported the completion of tasks by allowing students to divide their content into sections (IB.P.5.1). Additionally, the site facilitated deeper exploration and reflection (IB.P.6.1) and sparked students' initial curiosity to engage further with their topics (IB.P.7.1). These insights highlight how the digital portfolio encouraged inquiry-based learning and enhanced students' engagement with real-world academic content.

Theme 3: Active Learning Through Creating, Designing, and Producing Work

Several students described how the process of designing their e-portfolios through Google Sites allowed them to engage actively in learning. They highlighted the ability to customize layouts, insert links, and collaborate in real time as key aspects that made the platform conducive to creativity and productivity. Participants noted that the platform's user-friendly interface and drag-and-drop functionality simplified the organization of content and enhanced their interaction with peers. This active involvement in designing and producing work cultivated a stronger sense of ownership and engagement with their academic tasks.

Table 4.3 **Coded Interview Data on Active Learning Through Creating, Designing, and Producing Work**

Informant	Code	Quote/Excerpt
AL.P.1.1	Google Sites is easy and user-friendly	"It was fairly easy, especially when using a laptop... Google Sites is simple and straightforward, so everyone can use it."
AL.P.2.1	Convenient features for adding and linking docs	"It was very convenient. What I liked the most was the ability to add links or hyperlinks to other documents..."
AL.P.3.1	Supports real-time collaboration	"With Google Sites, everything became easier because we could edit together in real-time."

Informant	Code	Quote/Excerpt
AL.P.4.1	Easy access and peer interaction	"It was easy to access and to add comments or reflections on my classmates' Google Sites."
AL.P.5.1	Technology simplifies summarizing	"User-friendly features... makes it easier for me to summarize materials."
AL.P.6.1	Drag-and-drop helps organize ideas	"With the drag-and-drop feature, I could arrange paragraphs, images, and videos in the order of ideas I wanted."
AL.P.7.1	Platform performance varies by device	"Sometimes it was easy, and sometimes not... easier to access on a laptop... phone can cause distortion."

Based on the data presented in Table 4.3, students perceived Google Sites as a user-friendly and accessible platform that supported their active learning process. The ease of use, particularly on laptops, enabled them to manage their tasks more efficiently. Features such as adding hyperlinks, real-time collaboration, and drag-and-drop organization were praised for enhancing productivity and creativity. Moreover, students appreciated the ability to interact with peers by giving comments and reflections, as well as the technology's role in simplifying summarization. However, some participants also noted that the platform's performance varied depending on the device used, indicating that technical limitations could occasionally hinder their experience. Overall, Google Sites contributed significantly to fostering engagement, creativity, and independence in completing academic tasks.

Theme 4: Focus on Skill Development (Communication, Research, Critical Thinking)

The table below presents the coded data under the theme Active Learning Through Creating, Designing, and Producing

Work. It highlights how participants engaged with the features of Google Sites while completing their project-based tasks. Students expressed that Google Sites was easy to use and accessible, particularly on laptops. They appreciated its convenient features for adding and linking documents, as well as its ability to support real-time collaboration.

Moreover, participants valued the ease of peer interaction through comments and reflections, and how the platform's user-friendly technology simplified the process of summarizing ideas. Tools like drag-and-drop further supported idea organization. Despite some challenges with performance differences across devices, the overall experience fostered creativity, interaction, and independent learning.

Table 4.4 **Coded Interview Data on Focus on Skill Development (Communication, Research, Critical Thinking)**

Informant	Code	Quote/Excerpt
SD.P.1.1	Communication	"It was fairly easy, especially when using a laptop, as the display is more spacious. Google Sites is simple and straightforward, so everyone can use it."
SD.P.2.1	Communication	"Yes, I found it easy to communicate my ideas because I could customize the pages and templates according to my preferences..."
SD.P.3.1	Critical Thinking	"Yes, it was quite easy. With Google Sites, I could organize my ideas in a structured way and immediately see the results..."
SD.P.4.1	Communication	"In my opinion, yes, because when using Google Sites, we can adjust it to match our preferred writing style, especially with the features that allow us to add hyperlinks, videos, and images."
SD.P.5.1	Communication	"I don't really enjoy writing reflections through an e-portfolio because it is not anonymous. Sometimes, I am afraid that my reflections might offend the lecturer."

Informant	Code	Quote/Excerpt
SD.P.6.1	Critical Thinking	"In my opinion, it was quite easy because Google Sites allowed me to organize text into structured sections, such as creating subheadings, bullet points..."
SD.P.7.1	Research / Communication	"Sometimes it was easy, and sometimes not, because Google Sites is easier to access on a laptop... when using a phone, there is sometimes a system error..."

Based on the data in Table 4.4, participants found Google Sites to be an effective tool for supporting active learning through the process of creating, designing, and producing work. Many appreciated its user-friendly interface, particularly when accessed via laptops, which made it simple and accessible for everyone (AL.P.1.1). The ability to conveniently add and link documents was frequently mentioned as a helpful feature (AL.P.2.1), along with its support for real-time collaboration, allowing students to work together seamlessly (AL.P.3.1). Additionally, participants highlighted the ease of accessing peer work and interacting through comments (AL.P.4.1), and the platform's technology was noted for simplifying tasks like summarizing materials (AL.P.5.1). The drag-and-drop functionality also helped organize ideas visually and logically (AL.P.6.1). However, some participants noted that the platform's performance varied depending on the device used, with laptops generally offering a better experience than mobile phones (AL.P.7.1). Overall, the features of Google Sites contributed to enhanced engagement, collaboration, and creativity in students' learning processes.

Theme 5: Platform for Organizing and Displaying Students' Work

Table 4.5 presents coded data illustrating how students utilized Google Sites as a platform to organize and display their academic work. Participants found the platform helpful in categorizing content using features like pages, subpages, hyperlinks, and drag-and-drop formatting. These tools enabled them to structure their reflections and essays clearly, manage components individually, and present their work in a visually coherent manner. Moreover, the ability to revise content easily and personalize page layouts enhanced both organization and creativity in presenting academic outputs.

Table 4.5 **Coded Interview Data on Platform for Organizing and Displaying Students' Work**

Informant	Code	Quote/Excerpt
P.P.1.1	Displaying Students' Work	"…if I wanted to change the background…, I could simply click a button… insert files from Google Drive."
P.P.2.1	Organizing Students' Work	"…add links or hyperlinks to other documents, receive feedback, and revise the content easily."
P.P.3.1	Organizing Students' Work	"…separate pages feature, I could clearly structure each component… allowing ideas to be organized…"
P.P.4.1	Organizing Students' Work	"…organize different parts of the reflection by adding them into separate pages…"
P.P.5.1	Displaying Students' Work	"…especially when writing personal reflections rather than group work… prefer writing essays individually."
P.P.6.1	Displaying Students' Work	"…drag-and-drop feature, I could arrange paragraphs, images, and videos…"
P.P.7.1	Organizing Students' Work	"…layout formats that allowed me to organize the content neatly… box designs made it easier…"

The responses in Table 4.5 reveal that participants perceived Google Sites as a practical tool for both organizing and displaying their academic work. Several participants emphasized the ease of structuring content through features such as separate pages and layout formatting, which helped them organize their reflections and assignments more systematically. Others appreciated the platform's display capabilities, including the ability to change backgrounds, insert media, and arrange content using drag-and-drop tools. These functions not only enhanced the clarity and coherence of their presentations but also supported personalized and flexible expression. Overall, the platform facilitated a more organized, interactive, and user-friendly learning experience.

Theme 6: Reflection and Self-Assessment of the Learning Process

Participants emphasized the benefits of using Google Sites for reflection and self-assessment throughout their learning journey. The platform provided accessible and organized spaces to review progress, revisit learning materials, and identify areas for improvement. As illustrated in Table 4.6, various participants expressed how the platform enhanced their ability to reflect on their academic growth and self-evaluate their performance.

Table 4.6 **Coded Interview Data on Reflection and Self-Assessment of the Learning Process**

Informant	Code	Quote/Excerpt
RS.P.1.1	Reflection	"…could simply copy the link and access it anytime… display all the materials or reflections…"
RS.P.2.1	Self-Assessment	"…revisit the materials and documents I had studied and track my own progress…"

Informant	Code	Quote/Excerpt
RS.P.3.1	Reflection & Self-Assessment	"…see my progress from the early drafts to the final pieces… more aware of my learning process."
RS.P.4.1	Reflection	"…makes it easier to study and review our work, allowing us to identify our writing style…"
RS.P.5.1	Self-Assessment	"…recheck assignment summaries… especially before exams… reviewing summarized materials…"
RS.P.6.1	Reflection	"…reviewing my site, I could reflect on my learning process from beginning to end."
RS.P.7.1	Reflection	"…content would automatically be saved… making it easy to review later."

Table 4.6 shows the responses from different participants regarding reflection and self-assessment. RS.P.1.1 appreciated the convenience of accessing materials and reflections anytime through shareable links. RS.P.2.1 used the platform to revisit studied materials and track personal progress. RS.P.3.1 highlighted the ability to monitor their development from early drafts to final outputs, leading to greater awareness of their learning process. RS.P.4.1 found that reviewing their work allowed them to recognize and assess their writing style. RS.P.5.1 pointed out the usefulness of reviewing summarized materials, especially for exam preparation. RS.P.6.1 emphasized that reviewing their site supported reflection on the entire learning journey. Lastly, RS.P.7.1 noted that the automatic saving of content made later review more convenient. These insights indicate that Google Sites effectively supported ongoing reflection and self-monitoring among students.

Theme 7: Integration of Various Multimedia Elements

The integration of multimedia elements emerged as a significant advantage in using Google Sites for students' digital

portfolios. All participants (P1, P2, P3, P5, P6, and P7) incorporated various multimedia components, such as images, videos, hyperlinks, graphs, and diagrams, into their projects. This integration not only enriched the visual presentation but also enhanced the interactivity and clarity of their reflections. The table below presents participants' responses regarding how multimedia was utilized within their e-portfolios.

Table 4.7 **Coded Interview Data on Integration of Various Multimedia Elements**

Informant	Code	Quote/Excerpt
VM.P.1.1	Use of Visual Elements	"…not too crowded… keep it simple but still visually engaging."
VM.P.2.1	Multimedia Integration	"…combined text for explanations and images for illustrations… sometimes included videos…"
VM.P.3.1	Multimedia Integration	"…combining text with images and videos… added relevant explanatory videos…"
VM.P.4.1	Multimedia Integration	"…embedding multimedia elements into the pages… aligned with the content…"
VM.P.5.1	Use of Multimedia	"…use multimedia elements to express my ideas and creativity… summarize materials…"
VM.P.6.1	Multimedia Integration	"…combined the main reflection text with illustrative images and short videos…"
VM.P.7.1	Multimedia Integration	"…select the video option… display the videos or images stored…"

As shown in Table 4.7, participant VM.P.1.1 emphasized the importance of keeping the layout simple yet visually appealing. VM.P.2.1 and VM.P.3.1 described combining text with illustrations and videos to better explain their content. VM.P.4.1 highlighted how embedding multimedia needed to align with the context of each page. Meanwhile, VM.P.5.1 used multimedia as a tool to express creativity and summarize materials. VM.P.6.1 explained that they paired reflective texts with images and short

videos for more illustrative expression. Lastly, VM.P.7.1 appreciated the ability to select and display stored videos or images. Overall, these responses reflect how multimedia integration improved the quality and effectiveness of students' digital portfolios.

Theme 8: A Tool for Feedback and Assessment from Peers and Instructors

Google Sites also functioned as a platform for gathering feedback and assessments from both peers and instructors. The mechanisms varied among participants—while some (e.g., P2, P3, and P6) received feedback directly through the platform or collaborative tools like Google Docs, others (e.g., P1 and P5) experienced feedback through offline means, such as in-class evaluations or WhatsApp messages. This table captures the various methods and contexts in which feedback was provided, highlighting how learners benefited from both structured and informal feedback loops.

Table 4.8 **Coded Interview Data on A Tool for Feedback and Assessment from Peers and Instructors**

Informant	Code	Quote/Excerpt
FA.P.1.1	Feedback Outside Platform	"…feedback was given directly in person or via WhatsApp groups."
FA.P.2.1	Peer Feedback via Docs	"…sharing link feature… collaborating through Google Docs… provide feedback…"
FA.P.3.1	Peer Feedback on Platform	"…classmates could directly comment on the pages… immediately know what needed to be improved."
FA.P.4.1	Feedback via Comments/Page	"…allow comments to be added or create a new page specifically dedicated to feedback."

Informant	Code	Quote/Excerpt
FA.P.5.1	Instructor Feedback in Class	"…feedback… focused on the completeness of the materials… direct evaluations in class…"
FA.P.6.1	Mixed Peer Feedback	"…friends gave feedback through the Google Sites comment feature or… group chat."
FA.P.7.1	Conditional Instructor Feedback	"…comment feature… if access was granted… teacher could give feedback…"

As shown in Table 4.8, FA.P.1.1 indicated that feedback was often delivered outside the digital platform, such as in person or via WhatsApp. FA.P.2.1 and FA.P.3.1 described receiving peer feedback through Google Docs and directly on the site, which enabled immediate responses and improvements. FA.P.4.1 noted the ability to create dedicated pages for feedback, enhancing the clarity of peer contributions. Instructor involvement also played a role—FA.P.5.1 emphasized classroom-based feedback, while FA.P.7.1 pointed out that instructor comments depended on granted access. Finally, FA.P.6.1 illustrated a mixed model, receiving feedback via both platform features and external messaging. These varied approaches demonstrate the adaptability of Google Sites in facilitating multiple feedback channels.

Theme 9: Originality in Ideas and Work

The interview findings revealed that participants utilized Google Sites to express originality in their ideas and work. Elements such as personal writing styles, access to diverse tools, and the freedom to customize layouts contributed significantly to their ability to showcase individuality. Several participants highlighted how the platform's features allowed them to integrate personal preferences into their digital creations.

Table 4.9 **Coded Interview Data on Originality in Ideas and Work**

Informant	Code	Quote/Excerpt
O.P.1.1	Personal Writing Influence	"…uniqueness of writing style is more influenced by personal ideas and writing habits…"
O.P.2.1	Diverse Tools Supporting Style	"…many layouts, formats… access to Google Forms and Docs… easier to receive feedback."
O.P.3.1	Platform Supports Originality	"…Google Sites provided enough space to show my personal writing style…"
O.P.4.1	Platform Limitation	"…to truly showcase a unique style… other platforms might offer more options…"
O.P.5.1	Freedom to Express Ideas	"…freedom to express ideas… I like to describe things in detail and do not like to be limited."
O.P.6.1	Customization for Originality	"…customize the theme, colors, layout… integrate text and media."
O.P.7.1	Template-Driven Imagination	"…templates for writing were diverse… allowed us to use our imagination…"

As expressed by participant O.P.1.1, the uniqueness of writing style is closely influenced by personal ideas and habits. Tools like Google Forms and Docs (O.P.2.1) were appreciated for facilitating feedback and supporting different styles. However, participant O.P.4.1 pointed out the platform's limitations in fully showcasing unique styles, compared to other platforms. On a more positive note, the freedom to express ideas (O.P.5.1), the ability to customize themes and integrate media (O.P.6.1), and the variety of templates available (O.P.7.1) were seen as valuable features that enhanced creativity.

Theme 10: Ability to Approach Language Tasks in Innovative Ways

The tenth theme highlights students' ability to approach language tasks in innovative and imaginative ways. Google Sites, with its wide range of features, encouraged learners to go beyond traditional methods in completing their Academic English Writing (AEW) tasks. Participants found that the platform allowed for creative expression, integration of multimedia, and flexible content presentation. As stated by participant P7, the platform's features sparked curiosity and encouraged deeper exploration and imagination in their work.

Table 4.10 **Coded Interview Data on Ability to Approach Language Tasks in Innovative Ways**

Informant	Code	Quote/Excerpt
A.P.1.1	Creative Portfolio Presentation	"…encouraged creative thinking in terms of portfolio design… enhance the presentation…"
A.P.2.1	Freedom & Media Integration	"…felt free to present my AEW tasks… integrate various media to make content more interactive…"
A.P.3.1	Innovative Content Delivery	"…add various multimedia elements… present information in a more interesting and interactive way…"
A.P.4.1	Expressive Feature Use	"…free to express our writing… inserting photos, adding captions, or embedding videos…"
A.P.5.1	Structural Innovation	"…page and sub-page features… inspire me with ideas… categorize what I want to write…"
A.P.6.1	Visual-Based Innovation	"…many customizable features… find new ways to express ideas… through visuals…"
A.P.7.1	Feature-Driven Creativity	"…many features… encouraged me to explore further… sparking my imagination…"

Participant A.P.1.1 noted that designing creative portfolios enhanced the overall presentation, encouraging original thinking. Similarly, A.P.2.1 appreciated the freedom to integrate different types of media to make tasks more engaging. Innovative methods of delivering content (A.P.3.1) and the expressive use of features like videos and captions (A.P.4.1) were also highlighted. A.P.5.1 was inspired by the structural options of the site, while A.P.6.1 emphasized visual-based features that supported new forms of expression. Finally, A.P.7.1 affirmed that the wide range of platform features fostered creativity and inspired imaginative thinking.

Theme 11: Expression Through Multimedia or Artistic Content

The eleventh theme centers on students' expression through multimedia or artistic content. Participants emphasized how Google Sites enabled them to enhance their reflections using various artistic elements. By embedding YouTube videos, inserting images, and utilizing visually appealing layouts, students were able to creatively convey their understanding. These digital features allowed for both informative and aesthetic expression, contributing to a richer, more personalized reflection process.

Table 4.11 **Coded Interview Data on Expression Through Multimedia or Artistic Content**

Informant	Code	Quote/Excerpt
E.P.1.1	Balanced Visual Use	"…used them sparingly… maintain a simple yet engaging appearance… pleasant and easy to read…"
E.P.2.1	Multimedia-Rich Customization	"…added images, videos, and graphics… included graphs and diagrams… adjusted fonts…"

Informant	Code	Quote/Excerpt
E.P.3.1	Visual Clarification Techniques	"…used images and videos… graphs to explain complex data… relevant to the topic…"
E.P.4.1	Artistic Content Integration	"…search for artistic content… then insert or embed it into my reflection writing…"
E.P.5.1	Embedded Educational Media	"…embed the video link… embed YouTube links… engaging learning materials…"
E.P.6.1	Visual-Aided Explanation	"…used images to clarify concepts… created simple graphics… embedded short YouTube videos…"
E.P.7.1	Visual Sequencing in Reflections	"…inserting images or videos either before or after the explanatory sentence…"

Participant E.P.1.1 highlighted the importance of maintaining a balanced use of visuals to keep content pleasant and readable. Meanwhile, E.P.2.1 appreciated the ability to customize their work using multimedia elements such as images and graphs. Participants like E.P.3.1 and E.P.6.1 focused on using visuals for clarification purposes, such as explaining complex concepts or embedding videos for better understanding. E.P.4.1 explored artistic content to enrich their reflections, while E.P.5.1 and E.P.7.1 pointed out the strategic embedding of educational media and visual sequencing to enhance meaning and structure. Overall, the multimedia tools offered on the platform significantly supported students in expressing their ideas both clearly and creatively.

4.2 Impact of PJBL on Engagement and Creativity

The thematic analysis revealed that the implementation of Project-Based Learning (PJBL) through Google Sites e-Portfolio had a significant impact on students' engagement and creativity in

the context of EFL learning. Most participants (P1, P2, P3, P4, P5, P6, and P7) expressed that the use of e-Portfolio made the learning process more enjoyable, interactive, and meaningful. They highlighted that working on projects in groups kept them actively engaged, as they had to collaborate, communicate, and coordinate their tasks to complete the project effectively.

In terms of creativity, participants such as P2, P4, and P6 mentioned that the flexibility of Google Sites allowed them to explore various ways to present their ideas, such as through text, images, videos, hyperlinks, and customized layouts. This freedom provided space for students to express their originality and imagination while reflecting on academic essay writing topics. Several participants (P1, P3, P5, and P7) also reported that integrating multimedia elements sparked their creativity, as they could combine visual and textual components to strengthen the impact of their messages.

Moreover, the collaborative nature of PJBL encouraged students to take inspiration from their peers, which further stimulated their creative thinking. For example, P3 and P5 mentioned that by sharing ideas and providing feedback, they were able to develop new perspectives and improve the quality of their work. The process of revising and refining their projects also played a key role in enhancing both their creativity and engagement, as participants like P4 and P7 became more invested in producing high-quality outcomes.

Overall, the findings suggest that PJBL using Google Sites e-Portfolio serves as an effective approach to foster both engagement and creativity among EFL students. It not only motivates them to participate actively in learning activities but also

provides them with opportunities to develop essential 21st-century skills, such as creativity, collaboration, and digital literacy.

4.3 Challenges in Implementing PJBL and Google Sites

Although the implementation of Project-Based Learning (PJBL) using Google Sites e-Portfolio brought numerous benefits, the thematic analysis also identified several challenges faced by students during the process. Participants (P1, P2, P3, P4, P5, P6, and P7) highlighted issues related to both technical and collaborative aspects that affected their learning experience.

One of the most common challenges mentioned by participants (P1, P3, P5, and P7) was the difficulty in using the technical features of Google Sites. Some students encountered problems when embedding multimedia elements such as videos and hyperlinks or when trying to customize the layout and design of their e-Portfolios. P3 and P5 reported that the platform sometimes lacked user-friendly tools, which required extra time and effort to learn.

Collaboration within groups was another challenge frequently mentioned. Participants like P2, P4, and P6 noted that coordinating tasks and maintaining consistent communication among group members was sometimes difficult. Differences in commitment levels, communication styles, and work pace occasionally led to misunderstandings and delays in project completion. For example, P2 explained that not all team members contributed equally, which placed additional pressure on the more active students.

Time management was also identified as a challenge. Several participants (P1, P4, P6) admitted that balancing the PJBL project with other academic responsibilities was demanding. They found it challenging to allocate sufficient time to plan, develop, and

revise their e-Portfolios while also preparing for other coursework and exams.

Despite these obstacles, many participants (P3, P5, P7) viewed the challenges as valuable learning opportunities. They reflected that overcoming technical difficulties and improving teamwork taught them important problem-solving and communication skills, which are crucial for both academic and professional settings. In summary, while PJBL using Google Sites e-Portfolio offers meaningful benefits, it also presents challenges that require students to develop resilience, adaptability, and effective collaboration strategies. Addressing these challenges through additional technical training and clearer group coordination mechanisms could further enhance the effectiveness of PJBL in EFL learning contexts.

C. Discussion

The analysis of interview data reveals that the integration of Google Sites e-Portfolios in project-based learning (PBL) not only facilitated academic reflection but also significantly contributed to fostering students' creativity in essay writing tasks. The findings are interpreted in light of the research questions and theoretical framework as follows:

First, the use of Google Sites promoted collaboration, which aligns with one of the core elements of PBL—working in teams to solve problems and construct knowledge. Participants mentioned that the platform enabled seamless group work, such as dividing tasks and editing together in real time. This interaction fostered social learning and encouraged the exchange of creative ideas, thus enriching students' engagement and reflective thinking.

Second, the platform supported inquiry-based learning, allowing students to explore real-world problems and gather relevant information. By embedding hyperlinks, visual materials, and external sources into their reflections, students demonstrated deeper involvement with academic content. This reflects how digital tools like Google Sites can empower learners to actively investigate and contextualize their knowledge.

Third, Google Sites stimulated creativity through design freedom, as students actively engaged in customizing layouts, color schemes, font styles, and multimedia integration. These design choices were not merely aesthetic; they served as tools for idea expression, allowing students to present reflections that were meaningful, original, and aligned with their personal voice. This finding resonates with Amabile's (1996) componential theory of creativity, particularly the domain-relevant and task motivation components.

Moreover, students reported that the process of creating and curating e-portfolios helped them develop critical thinking and organizational skills. By segmenting content through sub-pages and arranging information thematically, students improved the clarity and coherence of their writing. This structured approach enhanced their ability to communicate academic ideas effectively, which is a key goal in EFL academic writing instruction.

Although feedback mechanisms varied, students generally valued peer and instructor input, whether received directly through Google Sites or alternative channels like WhatsApp. The ability to revise reflections based on feedback contributed to an iterative learning process, encouraging students to refine their work and deepen their self-awareness as writers.

Finally, the findings reveal that Google Sites allowed students to express individuality. Most participants highlighted how the platform offered space for originality and imagination, with features that encouraged innovation in presenting ideas. This autonomy in content creation and visual storytelling not only enriched the learning experience but also helped students internalize the subject matter more deeply.

These findings suggest that PJBL using Google Sites e-Portfolios can be a powerful pedagogical tool to support creativity, engagement, and reflective learning in academic writing contexts.

CHAPTER V

CONCLUSION AND SUGGESTION

A. Conclusion

This study explored students' perceptions of Project-Based Learning (PJBL) through Google Sites e-Portfolios in reflective academic essay writing, focusing on how this approach enhanced their creativity. Students generally perceived the use of Google Sites in PJBL tasks as beneficial to their creative development. They highlighted the flexibility of the platform, which allowed them to personalize their e-portfolios and express their ideas in unique ways. Through the integration of multimedia and the ability to organize their work visually, students felt more engaged and motivated, which they believed contributed to their overall creativity in writing.

In terms of enhancing students' creativity in academic writing, the use of Google Sites e-Portfolios was seen as a key factor in fostering creative thinking. Students reported that the platform enabled them to reflect deeply on their writing process and encouraged them to think critically and imaginatively when structuring their essays. The reflective nature of the platform allowed students to revisit and revise their work, helping them to refine their ideas and develop more original and nuanced arguments. Many students felt that this process of continual reflection and revision played a central role in enhancing their creative writing skills.

Despite the positive impacts on creativity, students also reported challenges that influenced their experience with Google Sites e-Portfolios. A common concern was the lack of real-time

collaboration on the platform, as students had to take turns editing their e-portfolios. This slowed down the collaborative process and made teamwork more difficult. Furthermore, students noted that the absence of an integrated feedback feature within the platform hindered the immediacy and interactivity of receiving feedback from their instructors. While the overall impact on creativity was positive, these challenges suggest areas for improvement in the platform to better support collaborative and feedback-driven learning.

B. Suggestion

Based on the findings of this study, several suggestions can be made to improve the use of Google Sites e-Portfolios in Project-Based Learning (PJBL) for enhancing creativity in academic essay writing. First, it is recommended that Google Sites incorporate real-time collaboration features to allow students to work simultaneously on their e-portfolios. This would improve teamwork and allow for a more dynamic and interactive collaborative experience, which is crucial for group projects and peer learning. By enabling students to co-edit and contribute to the platform simultaneously, the learning process could be more efficient and engaging.

Additionally, the platform could benefit from integrating a feedback mechanism that enables immediate and interactive communication between students and instructors. Providing an in-built space for real-time comments and suggestions would facilitate more timely and effective feedback, which is essential for students' development. Instant feedback would also encourage students to reflect on and refine their work more efficiently, thus enhancing their learning experience and creative output.

Lastly, future iterations of Google Sites e-Portfolios could explore incorporating more tools for multimedia integration and creative expression. While the current platform allows for the inclusion of multimedia elements, expanding the range of creative tools could help students further develop their originality. Features such as interactive widgets, embedded media, and advanced customization options would give students more freedom to express their ideas in diverse and innovative ways, further enhancing the creative potential of their academic writing.

C. Implication

This study shows that Project-Based Learning (PJBL) using Google Sites e-Portfolios can boost students' creativity in academic essay writing. Students felt more creative as they reflected on their work, organized their ideas, and presented them in a personalized way through the platform. PJBL helped them engage more deeply with their writing and think more creatively. However, some challenges were noted, such as the difficulty of collaborating in real-time and the lack of integrated feedback features in Google Sites. These issues made the collaborative process slower and feedback less immediate. To improve the learning experience, educators could consider finding ways to solve these issues, like using additional tools for collaboration or providing quicker feedback. With proper guidance, PJBL using Google Sites can effectively support students' creativity and enhance their academic writing skills.

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APPENDICES

Appendix 1 – Interview Guideline

Variable	Theory	Indicators	Items of Instruments
Project-Based Learning using Google Sites	Vygotsky (1978)	Collaboration among students	"How was your experience collaborating with classmates in composing reflective academic essay writing through Google Sites e-Portfolio?"
	Dewey (1938)	Inquiry-based tasks or real-world problems	How did the Google Sites e-Portfolio help you explore and organize information related to the topic of your academic essay writing reflection?
	Thomas (2000) & Bell (2010)	Active learning through creating, designing, and producing work	"What elements did you create or develop on your own in the Google Sites e-Portfolio while composing your reflection (e.g., images, videos, hyperlinks, layout, etc.)?"
	Partnership for 21st Century Learning, (2007)	Focus on skill development (communication, research, critical thinking)	Was it easy for you to communicate your ideas in writing using the Google Sites e-Portfolio for reflection? Why?
	Barrett (2007)	Platform for organizing and displaying students' work.	Did the Google Sites e-Portfolio help you organize different parts of your essay reflection more easily? Please explain.
	Kolb's (1984)	Reflection and self-assessment of the learning process	How did the Google Sites e-Portfolio support you in reviewing your overall learning process in understanding academic essay writing?
	Mayer (2005)	Integration of various multimedia elements (e.g., text, images, videos)	How did you integrate various multimedia elements (text, images, videos) when creating your academic essay reflection in the Google Sites e-Portfolio?
	Nicol & Macfarlane-Dick (2006)	A tool for feedback and assessment from peers and instructors.	How was the process of giving or receiving feedback conducted through the Google Sites e-Portfolio platform?
Student's Creativity	Torrance (1974)	Originality in ideas and work	Did the Google Sites e-Portfolio provide you with enough space to showcase your unique writing style or approach? Please explain.
	Guilford (1967)	Ability to approach language tasks in innovative way	How did the features of Google Sites e-Portfolio encourage you to think more creatively in presenting your academic reflections?
	Gardner (1983) & Kress & van Leeuwen (2001)	Expression through multimedia or artistic content in the e-portfolio	How did you use multimedia or artistic content (such as images, videos, graphics) to express your ideas in your academic essay reflection on Google Sites e-Portfolio?

Appendix 2 – Interview Data Transcript

Interview data for gain individual perception and experience of the participant in using the e-Portfolio as part of a project-based learning approach. These insights serve as qualitative data that support the investigation of how digital platforms like Google Sites can enhance creativity, reflection, and skill development in EFL learning.

1. Researcher: How was your experience collaborating with classmates when composing reflections on academic essay writing through the Google Sites e-Portfolio?

C.P.1.1	In one course, we were assigned to create reflections on the material or submit assignments through Google Sites. We had the freedom to be creative with the page design, homepage appearance, font styles, and so on. Since it offers various features, we could divide the tasks among team members to collaborate effectively
C.P.2.1	I found it easier to access and work simultaneously with my classmates when completing the Academic Essay Writing (AEW) tasks.
C.P.3.1	Working with classmates was really fun for me. We could exchange ideas about what to write and how to present it. With Google Sites, everything became easier because we could edit together in real-time.
C.P.4.1	My experience using Google Sites to compile reflections was quite convenient. It was easy to access and to add comments or reflections on my classmates' Google Sites.
C.P.5.1	It was actually quite troublesome. Usually, when creating an e-portfolio through Google Sites, we had to wait for everyone to submit their parts of the assignment before combining

	them into sub-sections under the main titles. Personally, I prefer using Google Drive.
C.P.6.1	It was quite enjoyable because we could exchange ideas and give direct feedback without having to meet in person, simply by sharing the Google Sites link and leaving comments.
C.P.7.1	The experience of working together was somewhat helpful because each person had their own role in completing different parts of the project.

2. Researcher: How did the Google Sites e-Portfolio help you explore and organize information related to the topic of your academic essay reflection?

IB.P.1.1	Google Sites has simple and user-friendly features, even for beginners. The homepage usually contains course and student information, and we can easily change or add pages just by clicking a button. It also provides several templates for reflections or portfolios that students can fill in.
IB.P.2.1	Google Sites helped me organize the information I wanted to present in a more neat and systematic way. Additionally, my peers were able to provide feedback on the sections I worked on, and I could easily access and revise tasks and information. What I liked the most was the ability to add visuals and infographics to my e-portfolio.
IB.P.3.1	The Google Sites e-Portfolio was very helpful in exploring and organizing information related to the academic essay writing topics. For example, when I wanted to write about "the importance of structure in essays," I could collect various sources like articles, videos, and essay examples, all stored in one easily accessible place. Collaboration with classmates also became easier because we could edit

	together and complement any missing information. Whenever I found a useful source, I could immediately add a hyperlink, allowing readers to access more information easily. With all these features, the process of exploring and organizing information became more enjoyable and well-structured.
IB.P.4.1	Through Google Sites, we can express our writing and organize information well by adding photos, videos, or hyperlinks.
IB.P.5.1	It was quite helpful because there is a menu option to create sub-sections, allowing us to organize tasks according to our needs.
IB.P.6.1	It was very helpful because I could explore my essay topic more deeply and organize my research findings and reflections neatly on the site.
IB.P.7.1	The available features made me want to explore further, and they definitely had an initial appeal or curiosity factor that encouraged me to explore them.

3. Researcher: What elements did you create or develop on your own in the Google Sites e-Portfolio while composing your reflection (e.g., images, videos, hyperlinks, layout, etc.)?

AL.P.1.1	I often added images related to the course material for the cover page. I also changed the background of the pages with more colorful designs and customized the font by making it bold or italic. Sometimes, I also inserted Google Drive links.
AL.P.2.1	I added images and included hyperlinks to other assignments or to several articles that were related to my tasks in the e-portfolio.

AL.P.3.1	In Google Sites, I created several elements myself, such as illustrative images, short videos, and hyperlinks to other sources. I also arranged the layout to make it more visually appealing.
AL.P.4.1	I used images, hyperlinks, and what I liked the most was exploring the different layout options available on Google Sites.
AL.P.5.1	I usually like to develop the layout of my Google Sites pages to make them look tidier. I also enjoy adding images as backgrounds to make them look more aesthetic.
AL.P.6.1	I added illustrative images relevant to the essay topic, hyperlinks to additional reference sources, and adjusted the layout to make my reflection look more appealing and less monotonous.
AL.P.7.1	Everything mentioned in the question was available and could be developed as desired.

4. Researcher: Did you find it easy to communicate your ideas in writing using the Google Sites e-Portfolio for your reflection? Why?

SD.P.1.1	It was fairly easy, especially when using a laptop, as the display is more spacious. Google Sites is simple and straightforward, so everyone can use it.
SD.P.2.1	Yes, I found it easy to communicate my ideas because I could customize the pages and templates according to my preferences. I could also add images and supporting documents, and I could easily access and revise them whenever necessary
SD.P.3.1	Yes, it was quite easy. With Google Sites, I could organize my ideas in a structured way and immediately see the

	results, making it faster to understand and refine what I wanted to communicate.
SD.P.4.1	In my opinion, yes, because when using Google Sites, we can adjust it to match our preferred writing style, especially with the features that allow us to add hyperlinks, videos, and images.
SD.P.5.1	I don't really enjoy writing reflections through an e-portfolio because it is not anonymous. Sometimes, I am afraid that my reflections might offend the lecturer.
SD.P.6.1	In my opinion, it was quite easy because Google Sites allowed me to organize text into structured sections, such as creating subheadings, bullet points, and adding supporting visuals.
SD.P.7.1	Sometimes it was easy, and sometimes not, because Google Sites is easier to access on a laptop, but laptops are not always carried everywhere, unlike phones, which we always have. However, when using a phone, there is sometimes a system error where the text we've written can become distorted.

5. Researcher: Did the Google Sites e-Portfolio help you organize the different parts of your essay reflection more easily? Please explain.

P.P.1.1	Yes, it was quite easy. For example, if I wanted to change the background of a page, I could simply click a button to upload an image, and it was just as easy to insert files from Google Drive.
P.P.2.1	Yes, it was very convenient. What I liked the most was the ability to add links or hyperlinks to other documents, receive feedback, and revise the content easily.

P.P.3.1	It was very convenient. With the separate pages feature, I could clearly structure each component, such as introduction, body, and conclusion, allowing ideas to be organized systematically without confusion. I could also add sub-pages for specific topics, making the information more focused and accessible.
P.P.4.1	Yes, we can organize different parts of the reflection by adding them into separate pages or by dividing the essay reflection into different sections as needed or desired.
P.P.5.1	Yes, it is quite convenient, especially when writing personal reflections rather than group work, because I prefer writing essays individually.
P.P.6.1	Yes, it was very convenient. With the drag-and-drop feature, I could arrange paragraphs, images, and videos in the order of ideas I wanted.
P.P.7.1	It was very helpful because it provided layout formats that allowed me to organize the content neatly, and there were box designs that made it easier to structure everything.

6. Researcher: How did the Google Sites e-Portfolio support you in reviewing your learning process in understanding academic essay writing as a whole?

RS.P.1.1	Once the reflections were published on Google Sites, I could simply copy the link and access it anytime. When clicked, it would display all the materials or reflections that had been organized and named accordingly.
RS.P.2.1	I was able to revisit the materials and documents I had studied and track my own progress in learning Academic Essay Writing.
RS.P.3.1	Google Sites became a great platform for reflecting on everything I had learned. I could see my progress from the

	early drafts to the final pieces, making me more aware of my learning process.
RS.P.4.1	Using Google Sites makes it easier to study and review our work, allowing us to identify our writing style over time.
RS.P.5.1	Sometimes, I recheck assignment summaries through the e-portfolio because it is more concise. Especially before exams, I prefer reviewing summarized materials through the e-portfolio.
RS.P.6.1	By reviewing my site, I could reflect on my learning process from beginning to end.
RS.P.7.1	By opening the link that had been attached or published, the content would automatically be saved on the Google Site, making it easy to review later.

7. Researcher: How did you integrate various multimedia elements (text, images, videos) when creating your academic essay reflection on the Google Sites e-Portfolio?

VM.P.1.1	It depended on the need; I tried not to make it too crowded. I preferred to keep it simple but still visually engaging.
VM.P.2.1	I created a cover slide followed by the content, combining text for explanations and images for illustrations. To make it more interactive, I sometimes included videos or hyperlinks to supporting documents.
VM.P.3.1	I really enjoyed combining text with images and videos. For instance, I added relevant explanatory videos to support the writing, making the reflections more lively and engaging.
VM.P.4.1	By embedding multimedia elements into the pages we create, aligned with the content of our writing.

VM.P.5.1	With user-friendly features, I usually use multimedia elements to express my ideas and creativity, making it easier for me to summarize materials.
VM.P.6.1	I combined the main reflection text with illustrative images and short videos as additional examples.
VM.P.7.1	It was quite easy you just had to select the video option, click on the video section, and it would display the videos or images stored on your computer or phone.

8. Researcher: How did you receive feedback through the Google Sites e-Portfolio?

FA.P.1.1	I have never received feedback directly through Google Sites. Usually, feedback was given directly in person or via WhatsApp groups.
FA.P.2.1	By using the sharing link feature after publishing and collaborating through Google Docs, we were able to provide each other with feedback and review the assignments.
FA.P.3.1	The feedback process was easy; my classmates could directly comment on the pages I created. This way, we could immediately know what needed to be improved.
FA.P.4.1	We can allow comments to be added or create a new page specifically dedicated to feedback.
FA.P.5.1	So far, the feedback I have received from lecturers has mainly focused on the completeness of the materials and the grades given. Sometimes, the lecturer also provides direct evaluations in class regarding my e-portfolio content.
FA.P.6.1	Usually, my friends gave feedback through the Google Sites comment feature or by sending messages via the group chat.

FA.P.7.1	There was a comment feature that, if access was granted to the teacher, would automatically allow them to give feedback. If it was not activated, the teacher would not be able to provide feedback.

9. Researcher: Did the features of Google Sites allow you to express your uniqueness or writing style?

O.P.1.1	Yes, to some extent, but not significantly. For me, the uniqueness of writing style is more influenced by personal ideas and writing habits rather than external factors like Google Sites.
O.P.2.1	Yes, I believe it was sufficient because there were many layouts, formats, and templates available to choose from. I also had access to Google Forms and Docs, which made it easier to receive feedback.
O.P.3.1	Yes, Google Sites provided enough space to show my personal writing style. I could choose colors, fonts, and layouts that matched my personality.
O.P.4.1	Perhaps for creating a simple e-portfolio, yes; however, if we want to truly showcase a unique style in writing or layout, there might be other platforms that can offer more options for creativity.
O.P.5.1	Yes, it gives me enough freedom to express ideas in writing and designing the layout, especially because I am the type who likes to describe things in detail and do not like to be limited.
O.P.6.1	Yes, because I could customize the theme, colors, layout, and the way I integrated text and media.
O.P.7.1	Yes, quite a lot, because the templates for writing were diverse and varied, which allowed us to use our imagination to create different variations and make it unique.

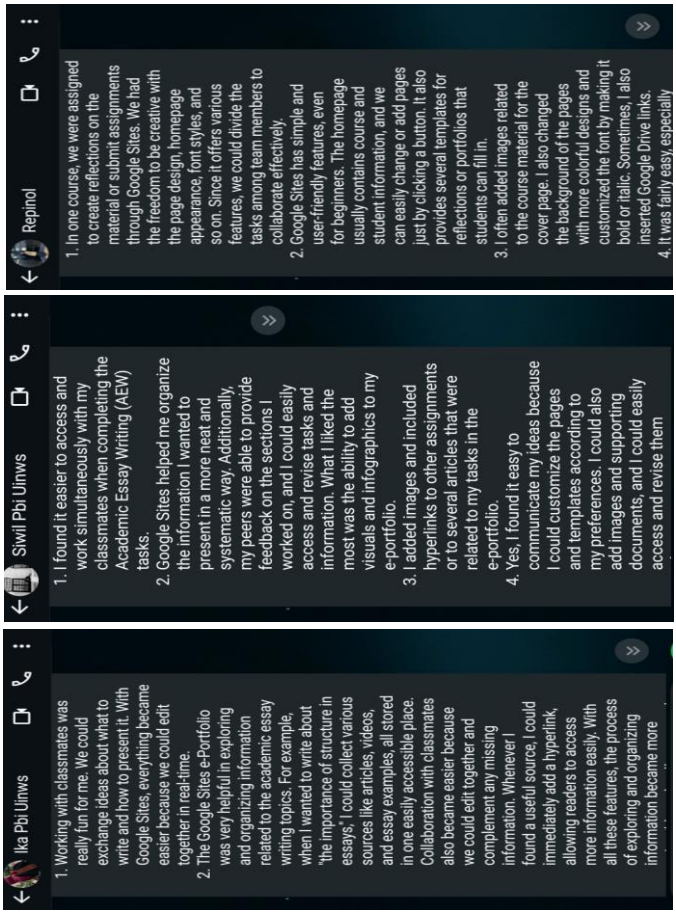
10. Researcher: How did the features of Google Sites e-Portfolio encourage you to think more creatively when presenting your academic reflections?

A.P.1.1	It encouraged creative thinking in terms of portfolio design. I could add different elements as needed to enhance the presentation without overdoing it.
A.P.2.1	I felt free to present my AEW tasks and reflections. I was also able to integrate various media to make the content more interactive and dynamic.
A.P.3.1	With the ability to add various multimedia elements like images, videos, and graphics, I could present information in a more interesting and interactive way. For example, I could insert explanatory videos or infographics to clarify key points in my reflection.
A.P.4.1	We are free to express our writing using the various features available, such as inserting photos, adding captions, or embedding videos into our work.
A.P.5.1	The page and sub-page features are enough to inspire me with ideas. I can categorize what I want to write without getting confused about where to place the relevant materials.
A.P.6.1	Since there are many customizable features, like changing layouts or adding graphics, I was encouraged to find new ways to express my ideas, not just through text but also through visuals.
A.P.7.1	As I mentioned earlier, the many features available on Google Sites encouraged me to explore further, sparking my imagination to create more variations in my writing.

11. Researcher: What kind of elements did you add to your Google Sites e-Portfolio to express your reflections (e.g., images, videos, hyperlinks, etc.)?

E.P.1.1	I used them sparingly to maintain a simple yet engaging appearance, ensuring the content was still pleasant and easy to read.
E.P.2.1	I added images, videos, and graphics that were relevant to the material or concepts I presented. I also sometimes included graphs and diagrams, inserted hyperlinks, and edited the overall appearance by adjusting fonts, writing styles, and layouts.
E.P.3.1	I often used images and videos to express ideas. For instance, I used graphs to explain complex data and added images that were relevant to the topic.
E.P.4.1	I would search for artistic content that matches my style through other platforms, and then insert or embed it into my reflection writing in the e-portfolio.
E.P.5.1	I usually use multimedia elements when necessary. For example, if I have a video of me teaching and want to reflect on it, I will embed the video link in my e-portfolio so that the lecturer can evaluate it. If I need to create teaching materials, and I get bored with using PowerPoint, I usually embed YouTube links to add more engaging learning materials instead of relying solely on plain text.
E.P.6.1	I used images to clarify concepts, created simple graphics to show the relationship between ideas, and embedded short YouTube videos as examples.
E.P.7.1	By inserting images or videos either before or after the explanatory sentence.

Appendix 3 – Documentation of Interview



Albert
Business Account
1. The experience of working together was somewhat helpful because each person had their own role in completing different parts of the project.
2. The available features made me want to explore further, and they definitely had an initial appeal or curiosity factor that encouraged me to explore them.
3. Everything mentioned in the question was available and could be developed as desired.
4. Sometimes it was easy, and sometimes not, because Google Sites is easier to access on a laptop, but laptops are not always carried everywhere, unlike phones, which we always have. However, when using a phone, there is sometimes a system error where the text we've written can become distorted.
5. It was very helpful because it provided layout formats that allowed me to organize the content neatly, and there were box designs that made it easier to structure everything.
nanik Pbi C Uinws
typing...
1. It was quite enjoyable because we could exchange ideas and give direct feedback without having to meet in person, simply by sharing the Google Sites' link and leaving comments.
2. It was very helpful because I could explore my essay topic more deeply and organize my research findings and reflections neatly on the site.
3. I added illustrative images relevant to the essay topic, hyperlinks to additional reference sources, and adjusted the layout to make my reflection look more appealing and less monotonous.
4. In my opinion, it was quite easy because Google Sites allowed me to organize text into structured sections, such as creating subheadings, bullet points, and adding supporting visuals.
5. Yes, it was very convenient. With the drag-and-drop feature, I could arrange paragraphs, images, and videos in the order of ideas I wanted.
Erika Pbi Uinws
1. It was actually quite troublesome. Usually, when creating an e-portfolio through Google Sites, we had to wait for everyone to submit their parts of the assignment before combining them into sub-sections under the main titles. Personally, I prefer using Google Drive.
2. It was quite helpful because there is a menu option to create sub-sections, allowing us to organize tasks according to our needs.
3. I usually like to develop the layout of my Google Sites pages to make them look tidier. I also enjoy adding images as backgrounds to make them look more aesthetic.
4. I don't really enjoy writing reflections through an e-portfolio because it is not anonymous. Sometimes, I am afraid that my reflections might offend the lecturer.
5. Yes, it is quite convenient, especially when writing personal reflections rather than group
Aura Pbi Uinws
1. My experience using Google Sites to compile reflections was quite convenient. It was easy to access and to add comments or reflections on my classmates' Google Sites.
2. Through Google Sites, we can express our writing and organize information well by adding photos, videos, or hyperlinks.
3. I used images, hyperlinks, and what I liked the most was exploring the different layout options available on Google Sites.
4. In my opinion, yes, because when using Google Sites, we can adjust it to match our preferred writing style, especially with the features that allow us to add hyperlinks, videos, and images.
5. Yes, we can organize different parts of the reflection by adding them into separate pages or by dividing the essay reflection into different sections as needed or desired.
6. Using Google Sites makes it easier to study and review our work, allowing us to identify our

Appendix 4 – Curriculum Vitae

CURRICULUM VITAE

Personal Data

Name	: Astuti Kusuma Wardani
Place of Birth	: Nganjuk, East Java
Date of Birth	: June, 24th 2001
Religion	: Islam
Gender	: Female
Address	: Jl. Asem, Kerepkidul, Kec. Bagor, Kab. Nganjuk
Email	: astutikusuma06@gmail.com

Formal Education

1. TK Pertiwi Kerepkidul (2006-2008)
2. SDN Kerepkidul 2 (2008-2014)
3. SMPN 1 Nganjuk (2014-2017)
4. SMAN 1 Nganjuk (2017-2020)
5. UIN Walisongo Semarang (2021)

Semarang, 5 May 2025

The Researcher

Astuti Kusuma Wardani

2103046083