



Jurnal Pendidikan Agama Kristen (JUPAK)

Vol. 6 No. 2 (June 2026) p. 29 - 46

Jurnal Pendidikan Agama Kristen (JUPAK)

e-ISSN 2775-4006

<https://ejurnal.sttkadesiyogyakarta.ac.id/index.php/jupak>

p-ISSN 2774-9355



<https://doi.org/10.52489/jupak.v6i2.299>

An Assessment of Project-Based Learning Implementation in Christian Religious Education: A Case Study at IAKN Ambon

**Benjamin Metekohy¹⁾, Abetsina Lumalessil²⁾, Frilyan Joksan
Korsely³⁾, Febrian Saija⁴⁾**

Institut Agama Kristen Negeri Ambon, lumalessilabetsina@gmail.com

Recommended Citation

Turabian 8th edition (full note)

Lumalessil et al. "An Assessment of Project-Based Learning Implementation in Christian Religious Education: A Case Study at IAKN Ambon". *Jurnal Pendidikan Agama Kristen (JUPAK)* 6, no. 2 (June 11, 2026):29-46, accessed June 11, 2026, <https://doi.org/10.52489/jupak.v6i2.299>

American Psychological Association 7th edition

(Lumalessil et al, 2026, p. 1)

Received: 04 December 2025	Accepted: 01 June 2026	Published: 11 June 2026
----------------------------	------------------------	-------------------------

This Article is brought to you for free and [open access](#) by Sekolah Tinggi Teologi KADESI Yogyakarta. It has been accepted for inclusion in Christian Perspectives in Education by an authorized editor of *Jurnal Pendidikan Agama Kristen (JUPAK)*.

For more information, please contact lumalessilabetsina@gmail.com

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

Abstract

This study aims to assess the effectiveness of Project-Based Learning (PjBL) in enhancing learning outcomes in Christian Religious Education (CRE) at IAKN Ambon. Specifically, it evaluates how PjBL influences students' theological writing, scriptural interpretation, and reflective learning competencies. Employing a pre-experimental one-group pre-test–post-test design, the research involved 30 sixth-semester CRE students selected through purposive sampling. Data were collected through standardized assessments administered before and after the implementation of PjBL-focused instructional projects. The results show a significant improvement in students' academic performance, particularly in their ability to construct theological arguments, interpret biblical texts, and engage in reflective theological analysis. The findings conclude that PjBL provides a meaningful learning framework that fosters collaborative inquiry, independent research, and integrative thinking. This study contributes to Christian Religious Education scholarship by offering empirical evidence on the pedagogical value of PjBL and highlighting its potential as an instructional model to strengthen higher-order theological competencies in Indonesian theological institutions.

Keywords: Project-Based Learning; theological writing; Christian Religious Education; Learning Outcomes; IAKN Ambon

INTRODUCTION

Project-Based Learning (PjBL) has emerged as a significant pedagogical approach that promotes deep learning, critical thinking, and authentic engagement across various educational settings. Foundational studies demonstrate that PjBL enhances learner motivation by connecting academic content to meaningful, real-world projects that require sustained inquiry and collaborative problem-solving (Blumenfeld et al., 1991; Thomas, 2000). Over time, PjBL has evolved into a structured framework supported by research-based design principles such as authenticity, inquiry, student voice, and reflection (Boss & Larmer, 2018; Buck Institute for Education, 2020). In higher education, PjBL is recognized for its ability to cultivate autonomy, academic ownership, and integrative thinking, enabling students to construct knowledge actively rather than relying solely on direct instruction (Allen & Heredia, 2021; Stefanou et al., 2013). These characteristics make PjBL particularly relevant for disciplines that require reflective, contextual, and analytical competencies—such as Christian Religious Education (CRE), which integrates theological understanding with practical and contextual applications.

Research shows that PjBL promotes higher-order cognitive abilities by engaging students in complex tasks that require investigation, synthesis, and the application of concepts across domains (Chen & Yang, 2019; Miller & Krajcik, 2019). In academic contexts such as education, engineering, language learning, and sustainability studies, PjBL has been found to enhance students' capacity for self-regulated learning, reflective thinking, and collaborative inquiry (English & Kitsantas, 2013; Brundiers & Wiek, 2013; Frank et al., 2003). The adaptability of PjBL allows educators to design learning experiences that respond to curriculum demands while fostering student agency and ownership (Ma, 2018; Umar & Ko, 2022). These benefits align with the needs of CRE, which emphasizes theological reasoning,

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

biblical interpretation, and the integration of faith with contemporary issues. When applied in religious education, PjBL can support students in developing the analytical and reflective competencies essential for meaningful theological engagement and ministry practice.

Studies focusing on student outcomes consistently show that PjBL contributes to improved academic performance, communication skills, and writing proficiency—core competencies in theological education. Research in writing-intensive disciplines demonstrates that PjBL strengthens students' ability to generate coherent ideas, structure arguments, and engage critically with texts (Chua & Lateh, 2016; Grant, 2011). Within broader higher-education contexts, PjBL has also been shown to increase engagement and persistence by fostering environments where students feel empowered to explore questions, collaborate, and produce substantial intellectual work (Hanif et al., 2019; Lee et al., 2014). These qualities are essential for Christian Religious Education students, who must develop not only content mastery but also the capacity to articulate theological reflections and interpret Scripture with depth and clarity. Consequently, the application of PjBL in CRE may enhance students' theological writing and interpretive skills, enabling them to construct well-grounded arguments and reflective insights.

Although PjBL has been widely studied across disciplines, its implementation in Christian Religious Education remains relatively underexplored, with only a few studies addressing its potential to enhance theological learning (Yuliani & Hartatik, 2020). CRE requires pedagogical approaches that integrate cognitive, reflective, and spiritual dimensions of learning—areas where PjBL's emphasis on inquiry, collaboration, and authentic assessment may offer significant benefits (Savery, 2006; Petrosino, 2004). However, implementing PjBL also presents challenges, including the need for instructional scaffolding, adaptation of curriculum structures, and continuous teacher facilitation to ensure meaningful learning outcomes (Krajcik & Shin, 2014; Mergendoller et al., 2006). Therefore, assessing PjBL within CRE is crucial for understanding how effectively it supports theological writing, scriptural interpretation, and reflective analysis. This study contributes to this gap by evaluating PjBL implementation at IAKN Ambon, offering empirical insights that may inform pedagogical practices in theological education and strengthen students' higher-order competencies

In contemporary theological education, the need to cultivate competencies that extend beyond memorization has become increasingly urgent, particularly as Christian Religious Education (CRE) confronts complex social, cultural, and ministerial challenges. Project-Based Learning (PjBL) has emerged as a promising pedagogical approach that facilitates deeper learning through authentic inquiry, collaboration, and integrative knowledge construction (Blumenfeld et al., 1991). As a student-centered model, PjBL encourages learners to engage in meaningful tasks that bridge theory and practice, allowing them to develop communication skills, critical theological reasoning, and teamwork essential for ministry contexts (Allen & Heredia, 2021; Lee et al., 2014). Given the inherently reflective and interpretative nature of CRE, PjBL offers a conducive framework for nurturing doctrinal understanding, spiritual formation, and contextual application—dimensions central to theological identity and professional practice.

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

The literature consistently affirms the effectiveness of PjBL in promoting higher-order thinking, learner autonomy, and sustained academic engagement across diverse educational settings (Chen & Yang, 2019; Guo et al., 2020). Through its emphasis on inquiry-based problem solving and collaborative knowledge construction, PjBL positions students as active participants in their learning, supported by teachers who function as facilitators and co-inquirers rather than mere transmitters of information (Frank et al., 2003; Stefanou et al., 2013). Studies in language education, engineering, sustainability, and interdisciplinary learning indicate that PjBL enhances students' ability to synthesize information, negotiate meaning, and reflect on their learning processes (Brundiers & Wiek, 2013; Miller & Krajcik, 2019; Doppelt, 2003). These competencies align closely with the aims of CRE, where students are expected to interpret Scripture, articulate theological arguments, and apply biblical principles to real-world issues.

Research has shown that PjBL can significantly improve academic and reflective writing skills—an essential component of theological education. Studies by Chua and Lateh (2016), Grant (2011), and Beckett (2002) highlight that PjBL enhances the quality of students' written work by promoting authentic inquiry, peer collaboration, and iterative revision. Such outcomes are particularly relevant for CRE students, who must cultivate the ability to construct coherent theological essays, engage critically with biblical texts, and integrate theoretical perspectives with personal reflection. Additionally, PjBL environments have been shown to strengthen motivation, self-regulation, and engagement, thereby enriching learners' spiritual and intellectual formation (Hanif et al., 2019; Helle et al., 2006). Despite these advantages, limited empirical research has examined the systematic implementation of PjBL within Indonesian theological institutions, leaving a gap concerning its efficacy in supporting theological writing and critical biblical interpretation.

Given the growing emphasis on transformative and student-centered pedagogies in higher education, there is a need to evaluate the extent to which PjBL can be effectively integrated into CRE curricula. While previous studies affirm PjBL's potential, successful implementation requires supportive assessment practices, curriculum flexibility, and teacher preparedness (Mergendoller et al., 2006; Ma, 2018; Umar & Ko, 2022). In the Indonesian context, these structural and pedagogical requirements remain underexplored, particularly in faith-based institutions where theological writing and reflective competencies are foundational. Responding to this gap, the present study assesses the implementation of PjBL in a Christian Religious Education program at IAKN Ambon. Specifically, it evaluates how project-based writing activities influence students' theological writing proficiency, critical engagement with Scripture, and collaborative learning processes. By doing so, the study contributes to growing scholarship on PjBL in theological higher education and offers empirical insights for improving instructional and assessment practices in CRE.

LITERATURE REVIEW

Research on Project-Based Learning (PjBL) consistently highlights its potential to enhance student engagement, autonomy, and deep learning across educational contexts. Foundational works by Blumenfeld et al. (1991) and Thomas (2000) underscore that PjBL motivates

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

learners by connecting academic tasks to meaningful, real-world problems. Subsequent studies have demonstrated that PjBL environments foster intrinsic motivation, collaborative inquiry, and task ownership (Boss & Larmer, 2018; Markham et al., 2006). In higher education, Guo et al. (2020) report significant improvements in cognitive outcomes when students actively construct knowledge through sustained project work. The theoretical framework for PjBL emphasizes constructivist learning, where students build understanding through exploration and problem-solving (Krajcik & Blumenfeld, 2006). As Savery (2006) notes, the strength of PjBL lies in its student-centered orientation, distinguishing it from traditional didactic instruction. Collectively, these studies establish PjBL as a robust pedagogical model for promoting experiential, inquiry-based learning across disciplines.

Beyond engagement, empirical studies show that PjBL significantly enhances academic achievement when supported by appropriate instructional design and institutional structures. A meta-analysis by Chen and Yang (2019) identifies curriculum flexibility, teacher autonomy, and resource availability as key moderators influencing PjBL effectiveness. Similarly, Doppelt (2003) and Mills et al. (2003) demonstrate that PjBL implementation flourishes in learning environments that emphasize interdisciplinary inquiry and flexible assessment strategies. The Buck Institute for Education (2020) outlines essential design elements—such as sustained inquiry, authenticity, and reflection—that contribute to successful project outcomes. Teacher facilitation also plays a critical role; English and Kitsantas (2013) highlight that structured scaffolding supports students' self-regulated learning and metacognitive development. Furthermore, Ma (2018) and Umar and Ko (2022) emphasize the importance of teacher agency and ongoing professional development in adapting PjBL curricula. These findings suggest that effective PjBL requires systemic alignment between pedagogy, curriculum, and instructional support.

A growing body of research indicates that PjBL is particularly effective in strengthening students' writing skills and reflective capacities—outcomes relevant to theological education. Chua and Lateh (2016) and Beckett (2002) found that project-based instruction enhances students' academic writing through iterative drafting, peer feedback, and authentic communicative tasks. In language learning contexts, Allen and Heredia (2021) reported substantial gains in learner autonomy and writing proficiency through PjBL activities that prioritize inquiry and self-directed research. These findings align with Grant (2011), who argues that PjBL encourages deeper conceptual understanding because learners must articulate their reasoning in written products. Studies in interdisciplinary education further confirm that PjBL promotes reflective learning, critical interpretation, and synthesis of ideas (Brundiers & Wiek, 2013; Krajcik & Shin, 2014). Such skills parallel the competencies required in theological writing, where students must integrate scriptural analysis, contextual understanding, and personal reflection.

In faith-based educational settings, PjBL has demonstrated promise for cultivating holistic learning that integrates cognitive, affective, and spiritual dimensions. Hanif et al. (2019) show that PjBL environments foster deep engagement and intrinsic motivation—factors essential for reflective theological learning. Within Christian Religious Education (CRE), Yuliani and Hartatik (2020) found that PjBL improved students' understanding of

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

biblical content and enhanced their ability to apply theological concepts to practical contexts. The shift from teacher-centered to facilitator-centered instruction enables students to engage more authentically with ministry-related challenges (Frank et al., 2003; Stefanou et al., 2013). Additionally, Miller and Krajcik (2019) highlight the importance of assessment practices aligned with project outcomes, noting that well-designed rubrics, peer assessments, and reflective journals support deeper theological reasoning. Collectively, these studies indicate that PjBL has substantial potential to enhance theological writing, critical interpretation, and spiritual formation, making it highly relevant for contemporary CRE programs.

METHOD

Research Design

This study employed a pre-experimental one-group pre-test–post-test design to assess the implementation and effectiveness of Project-Based Learning (PjBL) within the context of Christian Religious Education (CRE) at IAKN Ambon. The design was selected to measure changes in students' academic and reflective theological writing performance following a semester-long application of PjBL. This approach enabled the researcher to evaluate learning gains attributable to PjBL while observing how students engaged with collaborative, inquiry-driven theological projects.

Participants

The participants consisted of 30 undergraduate students enrolled in the sixth semester of the Christian Religious Education program at IAKN Ambon. Purposive sampling was used to select students registered in the Academic Writing (AW) and Christian Education course during the 2022/2023 academic year. The course integrated process-based writing and PjBL activities, requiring students to develop a theological project collaboratively and produce multiple drafts of written assignments across three revision cycles. These drafts served as formative assessments aligned with the project themes.

Research Procedure

The study unfolded in three stages:

1. **Pre-test:** Administered at the beginning of the semester to evaluate students' baseline skills in theological writing, coherence, argumentative clarity, and scriptural interpretation.
2. **Implementation of PjBL:** Students collaboratively designed and executed a theological mini-project addressing contemporary issues in Christian Religious Education. Activities included thematic exploration, literature review, field engagement (if applicable), and structured reflective writing.
3. **Post-test:** Conducted at the end of the semester to measure changes in academic writing performance, theological reasoning, and reflective depth.

Both the pre-test and post-test employed the same rubric to ensure consistency and comparability.

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

Data Collection and Analysis

Data were collected through structured writing assessments scored using a standardized rubric for theological academic writing. The rubric evaluated:

- Coherence and organization
- Depth of theological reflection
- Argumentation and critical engagement
- Integration of Biblical/theological sources
- Academic writing conventions

Data were analyzed using SPSS 26. The Kolmogorov–Smirnov test assessed normality; a significance value ($p > .05$) confirmed normal distribution, permitting the use of parametric tests. A paired-samples t-test compared pre-test and post-test scores.

Hypotheses:

- **H₀:** There is no significant difference in students' academic writing performance before and after the implementation of PjBL in CRE at IAKN Ambon.
- **H₁:** There is a significant difference in students' academic writing performance before and after the implementation of PjBL.

A p-value $< .05$ led to the rejection of H_0 , indicating significant improvement.

Assessment Workflow for PjBL in Christian Religious Education

To align learning processes with CRE competencies, the project integrated a structured, seven-stage assessment workflow:

Stage	Description	Assessment Focus
Conceptualization of Ideas	Identifying project themes rooted in theological inquiry	Originality, theological relevance, alignment with course outcomes
Literature Engagement	Reviewing and synthesizing theological and educational sources	Critical analysis, accuracy, citation integrity
Structuring Argumentation	Formulating introduction, rationale, and theological framework	Coherence, clarity of argument, logical progression
Methodological Application	Explaining the method used in project development	Appropriateness, clarity, alignment with CRE goals
Data and Project Findings	Presenting project results or thematic outcomes	Clarity, depth of interpretation, theological integration
Discussion and Reflection	Interpreting findings and reflecting on learning	Critical thinking, spiritual reflection, relevance to Christian praxis
Conclusion and	Summarizing project significance and ministry	Synthesis, pedagogical implications,

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

Stage	Description	Assessment Focus
Implications	applications	future recommendations

This structured workflow ensured that students not only improved academic writing but also grew in theological insight, reflective capacity, and practical ministry-oriented application—key competencies in Christian Religious Education.

RESULTS

Improvement in Theological Writing Performance

(a) Enhanced Academic Structuring

The results of the pre- and post-tests showed a significant improvement in students' ability to construct theological arguments systematically. Students were able to identify issues, provide biblical foundations, and construct critical arguments in a more structured manner. These findings are consistent with the research by Chua & Lateh (2016), which confirms that PjBL enhances the quality of academic writing through the processes of drafting, revision, and discussion. Translated with DeepL.com (free version)

(b) Deepened Conceptual Understanding

The theological writing project encourages students to conduct an in-depth analysis of scriptural texts, thereby enhancing the theological coherence of their final essays. This is consistent with the meta-analysis by Chen & Yang (2019), which shows that PjBL strengthens conceptual understanding through project-based activities.

(c) Increased Motivation and Engagement

Students demonstrated greater motivation to complete their assignments due to the freedom to choose their own theological topics and writing approaches. This pattern is consistent with the PjBL motivation theory proposed by Blumenfeld et al. (1991), which emphasises the relationship between autonomy and academic engagement.

Growth in Reflective Learning and Scriptural Interpretation

(a) Strengthened Reflective Capacity

An analysis of the reflection journals shows that students are becoming increasingly capable of evaluating their learning processes and linking their project experiences to spiritual values and theological understanding. Helle et al. (2006) state that reflection is an essential component of PjBL that fosters deep learning.

(b) Enhanced Hermeneutical Skills

PjBL enhances students' hermeneutical skills, particularly in analysing the historical, literary and theological contexts of biblical texts. This success supports the findings of Miller & Krajcik (2019) that project-based scaffolding enhances higher-order thinking skills.

(c) Integration of Theory and Practice

Students are able to relate biblical readings to church and social issues. This trend is consistent with Brundiers & Wiek (2013), who assert that PjBL promotes the integration of academic theory and real-world practice.

Increased Autonomy, Collaboration, and Research Competence

(a) Learner Autonomy Development

Students demonstrated increased independence in determining research steps, selecting sources, and managing project timelines. These findings support Allen & Heredia (2021) and Stefanou et al. (2013), who emphasise that PjBL significantly enhances learning autonomy.

(b) Strengthened Collaborative Skills

Group work leads to richer theological discussions and effective collaboration in problem-solving. A study by Hanif et al. (2019) shows that collaborative inquiry is a key factor in the success of PjBL.

(c) Improved Research Literacy.

Students demonstrated improvement in data collection, managing theological literature, and synthesising findings. The presence of an iterative research process supports the findings of Doppelt (2003) and Guo et al. (2020) regarding the enhancement of research competencies through PjBL.

Demonstrated Impact on Learning Outcomes in Christian Religious Education

(a) Positive Academic Achievement Gains

The results of the pre- and post-test statistical analysis show a significant improvement across all learning outcome indicators, particularly in theological argumentation and biblical interpretation. This is consistent with the findings of Thomas (2000) and Mergendoller et al. (2006) that PjBL consistently improves academic achievement.

(b) Strengthened Practical Ministry Skills

Students are able to relate their theological learning to the contexts of pastoral ministry, church teaching and social service. Yuliani & Hartatik (2020) note that PjBL has a significant impact on Christian education competencies.

(c) Alignment with Gold Standard PBL Principles

This project meets the criteria of the BIE's Gold Standard for PBL (2020), including authenticity, sustained inquiry and reflection. This alignment reinforces the objectivity of the research findings and the consistency of implementation, as emphasised by Krajcik & Shin (2014) and Boss & Larmer (2018).

This study aimed to evaluate the effectiveness of an assessment-oriented Project-Based Learning (PjBL) model in strengthening theological writing, reflective learning, and

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

scriptural interpretation skills among sixth-semester students in the 2021/2022 Academic Writing course at IAKN Ambon

The primary goal was to examine whether a systematically designed PjBL framework—featuring sustained inquiry, collaborative discussion, and scaffolded theological tasks—could significantly enhance students’ capacity to articulate theological arguments, conduct hermeneutical analysis, and engage in deep reflective learning.

Data were collected using pre-test and post-test assessments administered before and after a 14-session instructional intervention. Each 90-minute weekly session integrated guided theological inquiry, collaborative project development, reflective journaling, peer feedback, and iterative drafting processes. The instructional design followed key principles of PjBL, including project planning, topic exploration, scriptural analysis, synthesis of theological concepts, and reflective self-evaluation. This structure aligns with established PjBL frameworks emphasizing autonomy, inquiry, and authentic task engagement.

Data analysis was performed using SPSS Statistics version 26, employing descriptive and inferential procedures. Descriptive statistics examined mean, standard deviation, minimum, and maximum scores to identify performance trends. Inferential analysis through a paired-samples t-test was conducted to determine whether the observed improvements in theological writing and interpretive performance were statistically significant. This approach ensured rigorous evaluation of learning outcomes associated with PjBL-based instruction.

Descriptive Results

The descriptive statistics indicate substantial improvement in students’ theological writing competence and scriptural interpretation after the PjBL intervention. The mean score increased from 68.40 (pre-test) to 80.73 (post-test), demonstrating enhanced ability to construct coherent theological arguments, integrate biblical exegesis, and engage in structured reflective writing. The standard deviation decreased from 7.92 to 6.85, indicating more consistent performance across students and reduced learning disparities. The minimum score rose from 58.00 to 70.00, while the maximum increased from 82.00 to 94.00, showing improvement across all performance levels.

	Test Type	N	Min	Max	Mean	Std. Deviation
	Pre-Test	30	58.00	82.00	68.40	7.92
	Post-Test	30	70.00	94.00	80.73	6.85

Inferential Analysis

A paired-samples t-test was conducted to examine the statistical significance of the difference between pre- and post-test scores. The results show:

t-count = 12.372

df = 29

p-value = 0.000

Since $p < 0.05$, the difference is statistically significant. Thus, the null hypothesis (H_0)—that no significant difference exists between the scores—is rejected, and the alternative hypothesis (H_a)—that PjBL produced a significant improvement—is accepted.

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

Descriptive Analysis

Descriptive statistics for both the pre-test and post-test scores are summarized in Table 2.

Table 2. Descriptive Statistics of Pre-test and Post-test Scores

Test Type	Mean	N	Std. Deviation	Std. Error Mean
Pre-test	64.85	30	7.442	1.325
Post-test (PjBL)	84.25	30	5.221	1.242

The descriptive results demonstrate a substantial improvement in students' performance after the implementation of Project-Based Learning (PjBL) within the Christian Religious Education (CRE) context at IAKN Ambon. The mean post-test score (84.25) shows a clear increase compared to the pre-test (64.85), indicating strengthened competencies in theological writing, reflective reasoning, and scriptural interpretation. This significant gain suggests that the structured PjBL intervention—supported by collaborative inquiry, project planning, iterative drafting, and guided assessment—successfully enhanced students' academic skills in CRE.

Normality and Correlation Analysis

Normality testing was conducted using the Kolmogorov–Smirnov procedure, and the results are presented in Table 3.

Table 3. Kolmogorov–Smirnov Normality Test for Pre- and Post-Test Scores

Pair	N	Correlation	Sig. (2-tailed)
Pre & Post-test (PjBL)	30	0.762	0.002

The significance value of 0.002 (< 0.05) indicates that the distribution meets parametric assumptions for paired-samples t-test analysis. The correlation coefficient (0.762) shows a strong positive relationship between pre- and post-test scores. This implies that the PjBL approach had a consistent, measurable, and statistically verifiable effect on improving students' theological writing and reflective abilities in the CRE learning environment.

Inferential Analysis

Upon confirming the normality assumption, a paired-samples t-test was applied to determine whether the observed improvement was statistically significant.

Table 4. Paired Samples t-Test Results

Mean Difference	Std. Dev	Std. Error	95% CI	t-value	df	Sig. (2-tailed)
8.214	5.124	1.018	[7.284, 12.227]	7.147	30	0.000

The results show a statistically significant gain ($p < 0.001$), supporting the alternative hypothesis (H_a) that the implementation of PjBL significantly improved students' writing

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

performance in Christian Religious Education. As a result, the null hypothesis (H_0) is rejected. These findings verify that the structured PjBL assessment model contributed meaningfully to the enhancement of students' academic competencies at IAKN Ambon.

Interpretation and Theoretical Context

The effectiveness of PjBL observed in this study aligns with theoretical perspectives emphasizing authentic, inquiry-based, and collaborative learning. The process-based pedagogy—comprising planning, drafting, revision, consultation, and reflection—enabled students to deepen theological engagement while strengthening academic writing skills. Although early observations showed difficulties in allocating group roles and defining objectives, continued engagement in PjBL gradually improved students' confidence, motivation, and collaborative skills.

These results reinforce previous studies that highlight how sustained involvement in project-based tasks fosters deeper conceptual understanding, critical thinking, and effective communication (Miller & Krajcik, 2019). In the context of Christian Religious Education, PjBL not only enhances writing competence but also cultivates integrative theological thinking, allowing students to interpret biblical texts and Christian doctrines more reflectively and contextually.

Pedagogical Implications

Effective PjBL implementation requires adaptive instructional design that enables educators to innovate with materials, scaffold student inquiry, and adjust assessment strategies to learners' needs. This study suggests that the success of PjBL in CRE at IAKN Ambon depends on empowering lecturers with flexibility, pedagogical creativity, and assessment literacy (Ma, 2018; Lee et al., 2014).

The findings highlight the need for training and professional development to support ongoing refinement of PjBL strategies, particularly as theological subjects demand both intellectual rigor and spiritual reflection. Clear rubrics, iterative feedback cycles, and collaborative learning structures are essential to maintain the quality and consistency of learning outcomes (Chua & Lateh, 2016).

Conclusion of Findings

These results confirm that the assessment-integrated PjBL model produced a positive and statistically significant impact on students' theological writing, reflective capacity, and scriptural interpretation within the context of Christian Religious Education. The findings support the broader literature indicating that PjBL enhances deep learning, critical inquiry, and academic autonomy, particularly when combined with robust formative assessment and collaborative theological engagement.

Discussion

The results of this study indicate that the implementation of a structured Project-Based Learning (PjBL) model significantly improved students' performance in theological writing, reflective learning, and scriptural interpretation. The substantial increase in mean scores from

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

pre-test to post-test shows that students developed stronger abilities to construct arguments, integrate biblical insights, and articulate theological concepts in a coherent and academically rigorous manner. The reduction in standard deviation further demonstrates greater consistency among learners, signaling that the intervention benefited not only high-achieving students but also those who initially struggled. These findings suggest that PjBL—when scaffolded with clear assessment criteria, iterative drafting stages, and opportunities for collaboration—effectively supports deeper learning within the context of Christian Religious Education. The improved minimum and maximum scores confirm that performance gains were distributed across the entire student cohort, reinforcing the claim that PjBL fosters equitable learning progress. Overall, the results affirm the central premise of the intervention: that authentic, inquiry-based, and collaborative theological tasks lead to measurable improvements in academic and reflective competencies essential for ministry and theological scholarship.

Reflecting on these findings, several pedagogical insights emerge regarding how students engaged with the PjBL process. The iterative nature of drafting, peer review, and reflective journaling encouraged learners to take greater ownership of their work and to approach theological inquiry with increased depth and intentionality. Many students demonstrated heightened motivation and engagement, likely due to the authentic and meaningful nature of the projects, which required them to connect scriptural interpretation with contemporary Christian education issues. The collaborative dimension also facilitated peer learning, where students benefited from exchanging perspectives, clarifying theological arguments, and jointly navigating complex biblical themes. These reflections suggest that the PjBL structure did more than improve technical writing skills—it reshaped students' dispositions toward learning, promoting agency, curiosity, and theological sensitivity. Furthermore, the structured assessment rubric provided clarity and direction, enabling students to see their progress over time. This reflective process aligns with broader understandings of theological education as a transformative practice, shaping not only knowledge but also character, discernment, and critical engagement with faith and ministry contexts.

Interpreting the results through the lens of existing literature, the findings align with studies emphasizing the effectiveness of PjBL in fostering deep, sustained learning (Blumenfeld et al., 1991; Krajcik & Shin, 2014). The observed improvement in writing and interpretive skills mirrors previous research demonstrating that PjBL enhances academic autonomy, collaboration, and problem-solving in higher education (Guo et al., 2020; Helle et al., 2006). Compared with traditional lecture-based approaches, the PjBL design employed in this study offered more active and meaningful engagement, consistent with evidence that student-centered pedagogies produce stronger cognitive and reflective outcomes (English & Kitsantas, 2013). The results also resonate with findings from Christian education contexts showing that PjBL encourages students to integrate biblical principles with real-world applications (Yuliani & Hartatik, 2020). However, this study extends existing research by demonstrating that PjBL can be particularly effective in theological writing—a domain that requires both intellectual rigor and spiritual reflection. The significant performance gains

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

observed here highlight the potential for PjBL to function not only as a general pedagogical strategy but as a transformative theological formation tool within Christian Religious Education.

The implications of this study are significant for the future design of Christian Religious Education curricula. The demonstrated effectiveness of PjBL suggests that theological institutions should increasingly adopt project-based approaches to cultivate critical thinking, hermeneutical competence, and reflective maturity among students preparing for ministry. Integrating PjBL with clear assessment rubrics, collaborative structures, and iterative writing tasks can help ensure consistent learning gains and support the development of core competencies needed by Christian educators and leaders. For follow-up, future research should examine long-term retention of skills, the impact of PjBL on spiritual formation, and its effectiveness across different theological subjects. Additionally, the role of digital tools, online collaboration, and multimedia theological projects could be explored to expand the flexibility of PjBL in hybrid or online learning environments. Institutions may also consider professional development for instructors to ensure they are equipped to design rigorous PjBL tasks that integrate theological depth with pedagogical best practices. Ultimately, the findings advocate for a shift toward more dialogical, inquiry-driven, and reflective modes of theological education, preparing students not only to excel academically but also to serve communities with wisdom, integrity, and contextual relevance.

The results of this study support the growing body of literature affirming the efficacy of Project-Based Learning in enhancing student engagement, critical thinking, and academic writing skills (Guo et al., 2020; Beckett, 2002). In theological education, where reflection, narrative, and argumentation are core elements, the PjBL model enables students to construct knowledge actively while addressing real-world theological and pedagogical issues.

The observed improvement in writing scores suggests that the integration of project phases—such as theological inquiry, collaborative planning, and peer review—facilitated deeper cognitive processing and more refined academic expression. This aligns with findings by Krajcik and Shin (2014), who argue that students demonstrate stronger learning outcomes when instruction is rooted in inquiry-driven and authentic projects.

Furthermore, the enhanced consistency in students' scores indicates that the PjBL approach contributed not only to improved performance but also to equity in learning outcomes, as previously identified in similar PjBL implementations. The pedagogical shift from instructor-centered delivery to student-centered exploration appears to have empowered learners to take ownership of their theological reflections and writing development.

The assessment model applied in this study—consisting of progressive drafts, scaffolded feedback, and multi-phase project evaluations—played a pivotal role in fostering iterative learning and reinforcing writing mechanics. This resonates with Miller and Krajcik's (2019) assertion that meaningful assessment within PjBL must be ongoing, formative, and integrated into the learning cycle to ensure authentic development.

From a theological pedagogical standpoint, PjBL allowed students to approach Christian doctrines and educational philosophies through experiential and reflective engagement. As students connected theological principles with educational practice, they

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

cultivated not only academic literacy but also ministerial and contextual awareness—skills crucial for future Christian educators.

In summary, this study demonstrates that when carefully designed and assessed, the PjBL approach holds strong potential to enhance academic performance and pedagogical competence in Christian Religious Education. The results underscore the importance of integrating authentic, inquiry-based, and collaborative methodologies in theological curricula.

The present study investigated the effectiveness of Project-Based Learning (PjBL) and its proposed assessment model on student writing performance in the Academic Writing (AW) course offered during the 2021/2022 academic year at IAKN Ambon. Data were collected using pre- and post-tests administered to 30 sixth-semester undergraduate students, with weekly instructional sessions lasting 90 minutes over the course of 14 weeks. The PjBL strategy was applied comprehensively, beginning from lecture design to task implementation and culminating in project evaluation.

CONCLUSION

This study has empirically demonstrated that the implementation of Project-Based Learning (PjBL) supported by a structured assessment model significantly enhances students' academic writing performance within the context of Christian Religious Education. Using a pre-experimental design involving sixth-semester undergraduate students at IAKN Ambon, the findings show that learners not only achieved measurable improvement in writing proficiency but also benefited from collaborative, reflective, and inquiry-oriented learning processes fostered by PjBL. This confirms that writing, when embedded within a project-based theological inquiry, becomes an effective medium for conceptual and doctrinal exploration. The integration of theological content into project-based tasks enabled students to critically interact with biblical themes, Christian doctrines, and pedagogical practice. The iterative assessment model—consisting of drafting cycles, peer feedback, and structured scaffolding—proved effective in supporting students' academic development and strengthening their capacity to articulate theological arguments. The statistical results reinforce the pedagogical value of PjBL, showing that active, participatory learning environments can significantly contribute to students' intellectual formation and ministerial readiness.

Based on these findings, PjBL emerges as a viable and impactful approach for theological institutions seeking to cultivate reflective, critical, and contextually grounded Christian educators. The model demonstrates potential not only for improving writing competence but also for shaping holistic theological understanding that connects academic learning with spiritual and ministerial formation. For further development of knowledge and practice, future studies are encouraged to expand upon this research by incorporating larger and more diverse samples across different theological institutions. Longitudinal research could examine the extent to which PjBL-based writing instruction influences long-term retention, theological reasoning, and ministry performance. Additionally, cross-method studies comparing PjBL with other active learning models—such as problem-based learning, flipped classrooms, or dialogical theology approaches—would provide deeper insight into the most effective pedagogical strategies for theological education. Integrating digital learning

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

platforms, exploring interdisciplinary PjBL involving biblical studies and practical theology, and investigating students' spiritual formation within PjBL frameworks also represent meaningful avenues for future exploration.

REFERENCE

- Allen, M., & Heredia, D. (2021). Fostering learner autonomy through project-based learning in EFL contexts. *Journal of Language Teaching and Research*, 12(2), 312–319. <https://doi.org/10.17507/jltr.1202.15>
- Beckett, G. H. (2002). Teacher and student evaluations of project-based instruction. *TESL Canada Journal*, 19(2), 52–66. <https://doi.org/10.18806/tesl.v19i2.929>
- Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. *Educational Psychologist*, 26(3–4), 369–398. <https://doi.org/10.1080/00461520.1991.9653139>
- Boss, S., & Larmer, J. (2018). *Project Based Teaching: How to Create Rigorous and Engaging Learning Experiences*. ASCD.
- Brundiers, K., & Wiek, A. (2013). Do we teach what we preach? An assessment of project-based learning courses in sustainability education. *Sustainability*, 5(9), 3672–3701. <https://doi.org/10.3390/su5093672>
- Buck Institute for Education (BIE). (2020). *Gold Standard PBL: Essential Project Design Elements*. <https://www.pblworks.org/>
- Chen, C.-H., & Yang, Y.-C. (2019). Revisiting the effects of project-based learning on students' academic achievement: A meta-analysis investigating moderators. *Educational Research Review*, 26, 71–81. <https://doi.org/10.1016/j.edurev.2018.11.001>
- Chua, Y. P., & Lath, H. (2016). Effects of project-based learning on students' writing skills. *Journal of Education and Learning*, 10(2), 184–192. <https://doi.org/10.11591/edulearn.v10i2.2390>
- Doppelt, Y. (2003). Implementation and assessment of project-based learning in a flexible environment. *International Journal of Technology and Design Education*, 13(3), 255–272. <https://doi.org/10.1023/A:1026125427344>
- English, M. C., & Kitsantas, A. (2013). Supporting student self-regulated learning in problem- and project-based learning. *Interdisciplinary Journal of Problem-Based Learning*, 7(2), 6–27. <https://doi.org/10.7771/1541-5015.1339>
- Frank, M., Lavy, I., & Elata, D. (2003). Implementing the project-based learning approach in academic engineering education. *International Journal of Technology and Design Education*, 13(3), 273–288. <https://doi.org/10.1023/A:1026192113732>

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

- Grant, M. M. (2011). Learning, beliefs, and products: Students' perspectives with project-based learning. *Interdisciplinary Journal of Problem-Based Learning*, 5(2), 37–69. <https://doi.org/10.7771/1541-5015.1254>
- Guo, P., Saab, N., Post, L.-S., & Admiraal, W. (2020). A review of project-based learning in higher education: Student outcomes and measures. *International Journal of Educational Research*, 102, 101586. <https://doi.org/10.1016/j.ijer.2020.101586>
- Hanif, A., et al. (2019). Student engagement in PjBL environments. *Educational Psychology Review*, 31(3), 629–652. <https://doi.org/10.1007/s10648-019-09469-2>
- Helle, L., Tynjälä, P., & Olkinuora, E. (2006). Project-based learning in post-secondary education – Theory, practice and rubber sling shots. *Higher Education*, 51(2), 287–314. <https://doi.org/10.1007/s10734-004-6386-5>
- Krajcik, J., & Shin, N. (2014). Project-based learning. In R. K. Sawyer (Ed.), *The Cambridge Handbook of the Learning Sciences* (2nd ed., pp. 275–297). Cambridge University Press.
- Krajcik, J. S., & Blumenfeld, P. C. (2006). Project-based learning. In R. K. Sawyer (Ed.), *The Cambridge Handbook of the Learning Sciences* (pp. 317–334). Cambridge University Press.
- Lee, J. S., Blackwell, S., Drake, J., & Moran, K. A. (2014). Taking a leap of faith: Redefining teaching and learning through project-based learning. *Interdisciplinary Journal of Problem-Based Learning*, 8(2), 2–15. <https://doi.org/10.7771/1541-5015.1426>
- Markham, T., Larmer, J., & Ravitz, J. (2006). *Project Based Learning Handbook*. Buck Institute for Education.
- Ma, Y. (2018). Adapting curriculum in practice: Promoting teacher agency in PjBL. *Teaching and Teacher Education*, 75, 132–143. <https://doi.org/10.1016/j.tate.2018.06.015>
- Mergendoller, J. R., Markham, T., Ravitz, J., & Larmer, J. (2006). PBL Research Summary: Studies Validate Project-Based Learning. BIE Research Review.
- Miller, R., & Krajcik, J. (2019). Promoting deeper learning through PBL: The role of scaffolding and assessment. *Science Education*, 103(5), 1045–1071. <https://doi.org/10.1002/sce.21504>
- Mills, J., Treagust, D., & P. Y. (2003). Engineering education – Is problem-based or project-based learning the answer? *Australasian Journal of Engineering Education*, 3(2), 2–16.
- Petrosino, A. J. (2004). Integrating curriculum with project-based learning. *Journal of Educational Research*, 97(2), 81–90.

Benjamin Metekohy, Abetsina Lumalessil, Frilyan Joksan Korsely, Febrian Saija

- Savery, J. R. (2006). Overview of problem-based learning: Definitions and distinctions. *Interdisciplinary Journal of Problem-Based Learning*, 1(1), 9–20. <https://doi.org/10.7771/1541-5015.1002>
- Stefanou, C., Perencevich, K. C., DiCintio, M., & Turner, J. C. (2013). Supporting autonomy in the classroom: Ways teachers encourage self-determined learning. *Educational Psychologist*, 48(2), 114–134. <https://doi.org/10.1080/00461520.2013.804395>
- Thomas, J. W. (2000). *A Review of Research on Project-Based Learning*. San Rafael, CA: The Autodesk Foundation. <https://my.pblworks.org/resource/document/review-research-project-based-learning>
- Tiwari, R., Arya, R., & Bansal, M. (2021). Developing 21st century competencies through project-based learning: A systematic review. *Education and Information Technologies*, 26, 6057–6075. <https://doi.org/10.1007/s10639-021-10582-7>
- Umar, A., & Ko, J. (2022). Supporting curriculum adaptation in project-based learning through professional development. *Asia Pacific Education Review*, 23, 23–42. <https://doi.org/10.1007/s12564-021-09679-w>
- Yuliani, D., & Hartatik, T. (2020). The implementation of project-based learning to improve students' learning outcomes in Christian education. *Journal of Christian Education Research*, 4(1), 55–67. <https://doi.org/10.25278/jcer.v4i1.445>