



The Pedagogical Competence of Christian Religious Education Teachers in Educating Students to Manage the Environment Based on Genesis 2:15

Meri Christina^{1*}, Dorlan Naibaho²

¹Student, Pendidikan Profesi Guru, Fakultas Ilmu Pendidikan Kristen, IAKN Tarutung

²Lecturer, Fakultas Ilmu Pendidikan Kristen, IAKN Tarutung

*correspondence: merychristinapakpahan@gmail.com

ABSTRACT

The escalating environmental crisis necessitates innovative pedagogical approaches within Christian Religious Education (CRE) to cultivate environmental stewardship among students. Genesis 2:15, which commands humanity to "tend and keep" the Garden of Eden, provides a theological foundation for environmental education within Christian contexts. This study examines the pedagogical competence required for Christian Religious Education teachers to effectively educate students in environmental management principles derived from Genesis 2:15. A mixed-methods approach was employed, incorporating qualitative interviews with 24 CRE teachers across six Christian educational institutions and quantitative surveys administered to 156 students aged 14-18 years. Thematic analysis was conducted on interview transcripts, while statistical analysis examined correlations between teacher competence and student environmental awareness. Four core pedagogical competencies emerged: (1) theological literacy in creation theology, (2) environmental knowledge integration, (3) experiential learning facilitation, and (4) transformative pedagogical practice. Teachers demonstrating higher levels of these competencies significantly correlated with increased student environmental consciousness ($r = 0.73, p < 0.001$) and pro-environmental behavioral intentions ($r = 0.68, p < 0.001$). Effective environmental education within Christian contexts requires teachers to possess sophisticated pedagogical competence that bridges theological understanding with practical environmental knowledge. Professional development programs should emphasize creation theology, environmental science literacy, and experiential learning methodologies to enhance teacher effectiveness in cultivating environmental stewardship.

Keywords: Christian Religious Education, environmental stewardship, Genesis 2:15, pedagogical competence, creation theology

INTRODUCTION

The contemporary environmental crisis presents unprecedented challenges that demand urgent educational responses across all disciplines, including religious education. Climate

change, biodiversity loss, deforestation, and pollution collectively threaten the sustainability of human life and the broader ecosystem. Within this context, education is increasingly recognized as a powerful instrument for cultivating environmental awareness and shaping sustainable practices. In Christian educational settings, the biblical mandate of environmental stewardship, particularly as articulated in Genesis 2:15, offers a profound theological foundation for environmental education. This passage, which describes God placing humanity in the Garden of Eden “to work it and take care of it,” has become increasingly recognized as a cornerstone for Christian environmental ethics and education. Christian Religious Education (CRE) teachers occupy a unique position in addressing environmental concerns through the integration of faith-based perspectives with practical environmental knowledge. Their responsibility is not merely to transmit doctrinal content but to form students into responsible Christian citizens who embody biblical principles in their engagement with the world. However, the effectiveness of this integration depends significantly on teachers’ pedagogical competence—their ability to synthesize theological understanding with environmental science and translate this synthesis into meaningful learning experiences for students. In this sense, pedagogical competence is not only a matter of teaching technique but also a question of theological discernment and moral responsibility. The concept of pedagogical competence encompasses multiple dimensions, including content knowledge, pedagogical content knowledge, and contextual understanding. Content knowledge refers to mastery of both biblical theology and environmental science. Pedagogical content knowledge involves the ability to transform abstract concepts into accessible and engaging lessons tailored to students’ cognitive and spiritual development. Contextual understanding requires teachers to be sensitive to students’ lived realities, local environmental challenges, and cultural contexts. Within the specific domain of Christian environmental education, competence must bridge the theological and scientific realms while maintaining pedagogical effectiveness. The challenge lies in developing approaches that honor both biblical teachings and contemporary environmental science while engaging students in transformative learning experiences that shape attitudes and behaviors toward creation care. Recent scholarship in religious education has increasingly emphasized the importance of environmental themes within Christian curricula. Scholars argue that ignoring ecological issues diminishes the relevance of religious education in the twenty-first century and fails to equip students for the ethical challenges of their time. Various models of eco-theology and creation care have been integrated into Christian education in schools and churches, highlighting themes such as stewardship, justice, and sustainability. However, limited research has specifically examined the pedagogical competencies required for effective environmental education based on biblical foundations. This gap in the literature is particularly significant given the growing recognition of religious communities as crucial stakeholders in environmental conservation efforts. As faith-based institutions often command deep trust and influence among their members, the pedagogical role of CRE teachers in this domain becomes even more critical. Genesis 2:15 offers a rich theological foundation for environmental education, presenting humanity’s relationship with creation as one of responsible stewardship rather than dominion or exploitation. The Hebrew verbs *abad* (to work/serve) and *shamar* (to keep/guard) suggest both active engagement with and protective care for the natural world. This dual mandate provides CRE teachers with a

robust theological framework that emphasizes utilization without abuse and conservation without neglect. Such an interpretation challenges anthropocentric readings of Scripture that justify exploitation and instead calls students to embody a balance between productivity and preservation. By grounding environmental education in Genesis 2:15, teachers can highlight the biblical imperative that caring for creation is integral to Christian discipleship and spiritual formation. Pedagogical competence in this context also requires teachers to adopt innovative strategies that foster critical thinking, moral reflection, and practical engagement. Classroom practices may include integrating ecological themes into Bible study, employing project-based learning to address local environmental issues, or organizing service-learning initiatives that involve students in community conservation efforts. Furthermore, CRE teachers must cultivate dialogical pedagogies that allow students to reflect on their faith commitments in relation to pressing ecological realities. Such approaches not only transmit knowledge but also nurture virtues of responsibility, humility, and reverence for creation. The present study seeks to address the aforementioned research gap by investigating the specific pedagogical competencies required for CRE teachers to effectively educate students in environmental stewardship based on Genesis 2:15. By examining teacher practices and student outcomes, this research aims to contribute to the development of more effective approaches to Christian environmental education. The study underscores that equipping students with environmental awareness rooted in biblical teaching is not merely an academic exercise but a form of moral and spiritual formation. In doing so, CRE teachers participate in the broader mission of the church to witness faithfully to the Creator through the care of creation.

METHODS

This study employed a concurrent mixed-methods design, combining qualitative and quantitative approaches to provide comprehensive insights into the pedagogical competence required for effective Christian environmental education. The mixed-methods approach was selected to capture both the complexity of pedagogical practice and measurable outcomes related to student learning and environmental awareness. The study involved two primary participant groups, twenty-four Christian Religious Education teachers were recruited from six Christian educational institutions across three geographical regions. Participants ranged in age from 28 to 58 years ($M = 42.3$, $SD = 8.7$) and had teaching experience ranging from 3 to 25 years ($M = 12.8$, $SD = 6.4$). All participants held bachelor's degrees in religious education or related fields, with 67% holding advanced degrees. One hundred fifty-six students aged 14-18 years ($M = 16.2$, $SD = 1.3$) participated in the quantitative component of the study. Students were enrolled in Christian Religious Education courses taught by the participating teachers. The student sample was 52% female and 48% male, representing diverse socioeconomic backgrounds. Semi-structured interviews were conducted with all 24 teacher participants. Interviews lasted 45-75 minutes and explored teachers' understanding of Genesis 2:15, their approaches to environmental education, perceived competencies and challenges, and specific pedagogical strategies employed. All interviews were audio-recorded and transcribed verbatim. Students completed validated surveys measuring environmental awareness, environmental attitudes, and pro-environmental behavioral intentions. The

Environmental Awareness Scale (Erdogan et al., 2009) and the New Environmental Paradigm Scale (Dunlap et al., 2000) were adapted for use with adolescent populations. Additionally, a researcher-developed scale measured students' understanding of Christian environmental stewardship concepts. Interview transcripts were analyzed using thematic analysis following Braun and Clarke's (2006) six-phase approach. Initial codes were developed inductively, followed by thematic development and refinement through iterative analysis. Member checking was conducted with a subset of participants to enhance credibility. Descriptive statistics were calculated for all variables. Pearson correlation coefficients examined relationships between teacher competence ratings and student outcome measures. Multiple regression analysis explored the relative contributions of different competence dimensions to student outcomes. The study received approval from the institutional review board of the lead researcher's institution. All participants provided informed consent, with parental consent obtained for students under 18 years. Confidentiality was maintained through the use of pseudonyms and secure data storage procedures.

RESULT AND DISCUSSION

Teachers demonstrated varying levels of theological sophistication in their understanding of Genesis 2:15 and its implications for environmental stewardship. Highly competent teachers articulated nuanced interpretations that emphasized both the Hebrew concepts of "abad" and "shamar" and their contemporary applications. As one teacher explained: "Genesis 2:15 isn't just about gardening—it's about our fundamental relationship with creation. The words 'abad' and 'shamar' suggest both active engagement and protective care. I try to help students understand that we're called to be creation's servants, not its masters." Less competent teachers demonstrated more simplistic interpretations, often focusing solely on human dominion without adequate attention to stewardship responsibilities. This dimension emerged as foundational to all other competencies, as theological understanding shaped teachers' approaches to environmental education. Effective teachers demonstrated the ability to integrate environmental science knowledge with theological perspectives in coherent and meaningful ways. This competency involved understanding ecological principles, environmental challenges, and sustainable practices while connecting these concepts to biblical teachings. Teachers with strong integration skills employed strategies such as examining climate change through the lens of creation care or exploring biodiversity as a reflection of divine creativity. One teacher described her approach: "I start with the science—what's happening to our climate, our oceans, our forests. Then we explore how Genesis 2:15 calls us to respond. The students see that faith doesn't contradict science; it gives us a framework for caring about these issues." Highly competent teachers consistently incorporated experiential learning opportunities that connected students directly with the natural world. These experiences ranged from school garden projects to outdoor education excursions, all grounded in theological reflection. Effective experiential learning facilitation involved several key elements: careful preparation that connected activities to Genesis 2:15, guided reflection during experiences, and follow-up activities that helped students integrate learning. Teachers described how hands-on experiences made abstract

theological concepts concrete and personally meaningful. The fourth dimension involved teachers' ability to facilitate transformative learning experiences that moved students beyond cognitive understanding to personal commitment and behavioral change. This competency required sophisticated understanding of how values and behaviors change, particularly within faith contexts. Transformative pedagogical practice involved creating opportunities for students to examine their own environmental behaviors, connect these to their faith commitments, and develop action plans for increased environmental stewardship. Effective teachers served as models of environmental commitment while challenging students to consider their own roles as creation caretakers.

Quantitative Findings

Teachers were rated on each competence dimension based on interview analysis and classroom observations. Theological literacy scores ranged from 2.1 to 4.8 on a 5-point scale ($M = 3.6$, $SD = 0.8$). Environmental knowledge integration scores ranged from 1.8 to 4.7 ($M = 3.3$, $SD = 0.9$). Experiential learning facilitation scores ranged from 2.3 to 4.9 ($M = 3.7$, $SD = 0.7$). Transformative pedagogical practice scores ranged from 2.0 to 4.6 ($M = 3.4$, $SD = 0.8$). Student environmental awareness scores demonstrated significant positive correlations with teacher competence ratings. Overall teacher competence correlated strongly with student environmental awareness ($r = 0.73$, $p < 0.001$), environmental attitudes ($r = 0.71$, $p < 0.001$), and pro-environmental behavioral intentions ($r = 0.68$, $p < 0.001$). Individual competence dimensions showed varying relationships with student outcomes. Theological literacy correlated most strongly with students' understanding of Christian environmental stewardship ($r = 0.79$, $p < 0.001$). Environmental knowledge integration correlated most strongly with general environmental awareness ($r = 0.72$, $p < 0.001$). Experiential learning facilitation showed the strongest correlation with pro-environmental behavioral intentions ($r = 0.74$, $p < 0.001$). Multiple regression analysis examined the relative contributions of competence dimensions to student outcomes. For environmental awareness, environmental knowledge integration emerged as the strongest predictor ($\beta = 0.42$, $p < 0.001$), followed by theological literacy ($\beta = 0.31$, $p < 0.01$). For pro-environmental behavioral intentions, experiential learning facilitation was the strongest predictor ($\beta = 0.39$, $p < 0.001$), followed by transformative pedagogical practice ($\beta = 0.28$, $p < 0.05$).

Many teachers reported limited time within existing curricula to adequately address environmental themes. Traditional religious education curricula often emphasized doctrinal and biblical content without adequate attention to contemporary applications. Teachers frequently lacked access to appropriate resources for Christian environmental education, including curriculum materials, outdoor spaces, and professional development opportunities. Variable institutional support for environmental initiatives affected teachers' ability to implement comprehensive environmental education programs. Schools with strong environmental commitments provided more resources and encouragement for teacher innovation. Some teachers reported navigating tensions between different theological perspectives on creation and environmental responsibility within their school communities.

Implications for Teacher Development

The findings of this study have significant implications for Christian Religious Education teacher preparation and professional development. The identification of four core competence dimensions provides a framework for developing targeted professional development programs that address the specific needs of teachers seeking to integrate environmental education within Christian contexts. Teacher preparation programs should incorporate coursework in both creation theology and environmental science, with emphasis on developing the integration skills necessary for effective Christian environmental education. Field experiences should include opportunities for experiential learning facilitation, allowing prospective teachers to develop the practical skills necessary for connecting students with the natural world. Professional development programs for practicing teachers should emphasize the development of theological literacy in creation theology, as this competency emerged as foundational to all others. Programs should provide opportunities for teachers to engage with contemporary scholarship in creation theology while exploring practical applications within educational contexts. The strong correlation between teacher competence and student outcomes suggests that investment in teacher development can yield significant improvements in student environmental awareness and commitment. The specific relationship patterns identified in this study provide guidance for targeted interventions.

The finding that experiential learning facilitation most strongly predicted pro-environmental behavioral intentions has important implications for curriculum design. Christian environmental education programs should prioritize hands-on experiences that connect students directly with creation while providing theological frameworks for understanding these experiences. This study contributes to the growing body of scholarship examining the practical applications of creation theology within educational contexts. The emphasis on Genesis 2:15 as a foundation for environmental education demonstrates the richness of biblical resources for addressing contemporary environmental challenges. The findings suggest that effective Christian environmental education requires sophisticated theological understanding that moves beyond simplistic interpretations of biblical texts. Teachers must be equipped to engage with complex theological concepts and their practical implications for environmental stewardship. Several limitations should be acknowledged in interpreting these findings. The sample size, while adequate for the mixed-methods design employed, limits the generalizability of quantitative findings. The focus on Christian educational contexts may limit applicability to other religious traditions or secular educational settings. The cross-sectional design of the study prevents conclusions about causality, although the strong correlations identified suggest meaningful relationships between teacher competence and student outcomes. Longitudinal research would provide stronger evidence for the long-term impacts of enhanced teacher competence on student environmental commitment. Future research should explore the development of teacher competence over time, examining how professional development interventions affect both teacher practice and student outcomes. Longitudinal studies tracking students' environmental attitudes and behaviors beyond the immediate educational experience would provide valuable insights into the lasting impacts of Christian environmental education. Comparative research examining different approaches to religious environmental education across various faith traditions could contribute to broader understanding of

religion's role in environmental education. Additionally, research exploring the integration of environmental themes within other Christian education contexts (e.g., youth ministry, adult education) would expand the applicability of these findings.

CONCLUSION

This study has identified four core dimensions of pedagogical competence essential for effective Christian environmental education based on Genesis 2:15: theological literacy in creation theology, environmental knowledge integration, experiential learning facilitation, and transformative pedagogical practice. The strong correlations between teacher competence and student environmental outcomes demonstrate the critical importance of teacher development in promoting environmental stewardship within Christian educational contexts. The findings suggest that Genesis 2:15 provides a robust theological foundation for environmental education that can effectively bridge faith commitments and environmental concern. However, realizing this potential requires teachers who possess sophisticated competencies that integrate theological understanding, environmental knowledge, and pedagogical skill. Christian educational institutions should prioritize the development of these competencies through comprehensive professional development programs that address both theological and pedagogical dimensions of environmental education. Such investments have the potential to contribute significantly to the development of environmentally conscious Christians who understand their faith as calling them to active creation care. The contemporary environmental crisis demands urgent educational responses that engage all sectors of society, including religious communities. Christian Religious Education teachers, equipped with the competencies identified in this study, are positioned to make significant contributions to environmental education that ground environmental concern in deep theological understanding and transformative pedagogical practice. As Christian educational institutions continue to grapple with their responsibilities in addressing environmental challenges, this research provides a foundation for developing more effective approaches to environmental education that honor both biblical teachings and environmental science while engaging students in meaningful learning experiences that can transform their understanding and commitment to creation care.

BIBLIOGRAPHY

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Dunlap, R. E., Van Liere, K. D., Mertig, A. G., & Jones, R. E. (2000). New trends in measuring environmental attitudes: Measuring endorsement of the new ecological paradigm: A revised NEP scale. *Journal of Social Issues*, 56(3), 425-442.
- Erdogan, M., Kostova, Z., & Marcinkowski, T. (2009). Component of environmental literacy: Elementary science education perspective. *International Electronic Journal of Elementary Education*, 1(3), 193-210.

- Hull, J. M. (1991). *Mishmash: Religious education in multi-cultural Britain*. Birmingham: University of Birmingham School of Education.
- McFague, S. (1993). *The body of God: An ecological theology*. Minneapolis: Fortress Press.
- Moltmann, J. (1985). *God in creation: A new theology of creation and the Spirit of God*. San Francisco: Harper & Row.
- Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57(1), 1-22.
- The Holy Bible, English Standard Version. (2001). Wheaton, IL: Crossway Bibles.
- White, L. (1967). The historical roots of our ecological crisis. *Science*, 155(3767), 1203-1207.
- The Holy Bible, English Standard Version. (2001). Wheaton, IL: Crossway Bibles.
- Wolters, A. M. (2005). *Creation regained: Biblical basics for a reformational worldview* (2nd ed.). Grand Rapids, MI: Eerdmans.
- Wolters, A. M., & Goheen, M. W. (2014). *Creation regained: Biblical basics for a reformational worldview* (3rd ed.). Grand Rapids, MI: Eerdmans.