

Discipline Dynamics in Project-based Learning in Primary School: a Comparative Study of Multicultural and Monocultural Milieu

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ABSTRACT

KEYWORDS:

student discipline in the classroom; classroom discipline; cultural milieu; childhood; social interaction

This research article investigates the influence of classroom multicultural and monocultural milieu on discipline dynamics and the implementation of Project-Based Learning (PjBL) in primary schools. The primary objective is to examine how cultural context shapes students' disciplined behaviour and the strategies teachers use within PjBL frameworks. A quantitative, comparative method was employed, involving 76 students from four schools in West Sulawesi, Indonesia. Data were collected using the Discipline Self-Assessment and a PjBL performance test. Results revealed significant differences in Discipline ($t = 10.386, p < 0.001$) and PjBL ($t = 6.947, p < 0.001$) between the milieus. Regression analysis indicated that Discipline and PjBL collectively explain 76.7% of the variance in Milieu Types ($R^2 = 0.767, F = 120.164, p < 0.001$). In monocultural milieus, Discipline emerged as a stronger predictor, while in multicultural settings, PjBL was more impactful. These results highlight the need for context-specific strategies, with discipline supporting structure in monocultural classrooms and PjBL enhancing engagement in multicultural ones. The research results underscore the importance of adapting teaching methods in the classroom, providing valuable insights for educators and policymakers. Future research should explore additional variables and longitudinal follow-ups to gain a deeper understanding of student discipline dynamics.

INTRODUCTION

The dynamic nature of today's classrooms, especially in primary schools, reflects the increasingly diverse cultural backgrounds of students (Leifels & Bowen, 2021). This diversity introduces a unique set of challenges and opportunities for educators in fostering discipline and engagement (Amundsen, 2023). Project-Based Learning (PjBL) has emerged as a pedagogical strategy capable of addressing such complexities by promoting active learning, collaboration, and problem-solving (Kokotsaki et al., 2016; Thuan, 2018). However, the effectiveness of PjBL in shaping students' discipline may vary depending on the cultural composition of the classroom, which remains an underexplored area in educational research.

Discipline, a cornerstone of effective learning, is often shaped by cultural norms and values (Bicer, 2021). In multicultural classrooms, students bring diverse cultural expectations regarding authority, collaboration, and learning behaviour, which can influence their disciplinary practices (Lyon et al., 2020; Osher et al., 2010). On the other hand, monocultural classrooms offer a relatively homogenous environment where shared norms may simplify the establishment of discipline (Barker & Ukpong, 2020). These contrasting contexts raise important questions about how discipline dynamics unfold in PjBL environments (Kartika, 2020). Despite the recognized benefits of PjBL, the relationship between classroom milieu and student discipline in PjBL settings remains under-researched, particularly in primary education.

Current literature on PjBL predominantly focuses on its impact on academic achievement, critical thinking, and collaborative skills (Kokotsaki et al., 2016; Zen et al., 2022). However, few studies investigate how PjBL interacts with classroom discipline, especially within different cultural settings (Edmunds, 2005; Starkey, 2001). Existing research often overlooks how cultural heterogeneity or homogeneity might affect students' adherence to classroom norms and their overall learning experience (Hernández, 2023; Lee et al., 2019; Riddersporre & Stier, 2022). This gap limits our understanding of the contextual factors that mediate the effectiveness of PjBL in fostering disciplined behaviour, particularly in primary schools where foundational disciplinary habits are formed.

The novelty of this study lies in its focus on comparing discipline dynamics in PjBL environments across multicultural and monocultural primary school settings. While previous studies have explored the impact of PjBL on student

engagement and learning outcomes, little is known about how cultural context influences discipline within this pedagogical framework (Areiqat et al., 2024; Barker & Ukpong, 2020; Kokotsaki et al., 2016). By addressing this gap, the study provides new insights into how cultural diversity shapes the implementation and outcomes of PjBL, offering a nuanced understanding of its effectiveness in promoting discipline.

This research is particularly timely given the growing emphasis on culturally responsive pedagogy. As classrooms become more diverse, educators face increasing pressure to adopt teaching methods that are both inclusive and effective in maintaining discipline (Amundsen, 2023; Casillas, 2014; Weigelt, 2009). Understanding the interplay between cultural context and discipline in PjBL can help educators tailor their approaches to better meet the needs of diverse student populations. Furthermore, insights from this study can inform the development of targeted interventions and professional development programs aimed at enhancing the efficacy of PjBL in diverse educational settings (Darmiany & Maulyda, 2022; Iatsyshyn, 2020).

The study adopts a comparative approach, examining discipline dynamics in multicultural and monocultural primary school classrooms implementing PjBL. It seeks to uncover whether and how the cultural composition of a classroom influences students' disciplinary behaviour, as well as the strategies employed by teachers to manage discipline in PjBL settings. By comparing these two milieus, the research aims to highlight context-specific challenges and best practices, thereby contributing to the broader discourse on culturally responsive teaching and classroom management. Hence, this study aims to bridge a critical gap in the literature by exploring the role of cultural context in shaping discipline dynamics within PjBL environments. Its findings are expected to provide valuable insights for educators, policymakers, and researchers, ultimately enhancing the implementation of PjBL in diverse primary school classrooms.

UNDERPINNING THEORY

Cultural Knowledge

The development of cultural knowledge in elementary schools reflects the increasing recognition of diversity and multiculturalism in educational systems (Weigelt, 2009; Yin et al., 2020). Critical theory, particularly in the realm of

education, emphasizes the need to empower students by fostering a deep understanding of their own cultural identities and those of others. This trend is rooted in the belief that cultural knowledge is not merely an academic subject but a transformative tool that challenges social inequities and promotes critical consciousness (Wilson, 1982). In recent years, schools have incorporated culturally responsive pedagogies, which integrate students' cultural backgrounds into the curriculum, fostering a sense of belonging and enhancing their academic engagement (Horst & Albertyn, 2018; Van Der Horst & Albertyn, 2018). This shift aligns with the critical theory's aim of questioning traditional knowledge hierarchies and empowering marginalized voices.

However, the implementation of cultural knowledge in elementary education often faces systemic challenges (Alon & Higgins, 2005). One critical issue is the tendency to commodify culture, reducing it to superficial symbols rather than exploring its deeper social, historical, and political contexts (Alexander, 2019). For instance, cultural celebrations in schools may highlight traditional dances or cuisine without addressing the broader narratives of power, colonization, or resistance associated with those cultures. This surface-level engagement risks perpetuating stereotypes rather than fostering genuine intercultural understanding. From a critical perspective, educators must be vigilant against such practices and strive for a curriculum that critically examines the structures of power and privilege that shape cultural narratives (Garcia-Mila et al., 2021; Lata Sharma & Sarkar, 2019).

Another emerging trend is the role of digital technology in shaping students' cultural knowledge. Digital platforms provide unprecedented access to diverse cultural content, allowing students to explore global perspectives beyond their immediate communities (Boyle, 1999; Cimen, 2014). However, critical theory warns of the potential for digital media to reinforce cultural biases and perpetuate a dominant worldview, particularly when algorithms prioritize certain narratives over others (Hirsch, 2005; Malton et al., 2012). To counter this, schools must equip students with critical media literacy skills, enabling them to discern and analyse the cultural biases inherent in digital content. By fostering these critical competencies, education systems can support the development of students as culturally aware and socially responsible citizens who can navigate and challenge the complexities of a globalized world. This trend reflects a broader societal shift towards valuing cultural pluralism, but its success depends on a critical and reflective approach

that interrogates the power dynamics at play within cultural knowledge production and dissemination.

Multicultural and Monocultural

Critical theory offers a lens to examine power dynamics and inequities within social interactions, particularly in educational contexts (Leifels & Bowen, 2021). When students engage in group activities, the nature of their social interactions can vary significantly based on the group's cultural composition (Amundsen, 2023; Lee et al., 2019). In multicultural groups, the diverse cultural backgrounds of students lead to complex interactions, often shaped by differing communication styles, values, and social norms. These interactions, while rich in perspective, are also prone to misunderstandings and implicit biases (Riddersporre & Stier, 2022). Critical theorists argue that power relations in such groups are often skewed, with dominant cultural norms overshadowing minority voices. This can marginalize certain students, hindering equitable participation and fostering a sense of exclusion.

Conversely, in monocultural groups, students share similar cultural backgrounds, leading to more homogenous interaction patterns (Areiqat et al., 2024). The lack of cultural diversity in these groups may reduce misunderstandings but also limits exposure to diverse viewpoints. Critical theory highlights that while monocultural groups may seem harmonious on the surface, they often perpetuate uncritical acceptance of prevailing social norms and hierarchies. Without the challenge of differing perspectives, such groups may unconsciously reinforce existing power structures and fail to question systemic inequities (Barker & Ukpong, 2020). This homogeneity can stifle critical thinking and creativity, as students are less likely to encounter and engage with alternative viewpoints.

From a critical theory perspective, fostering critical consciousness in both group types is essential. In multicultural groups, educators must actively facilitate dialogues that encourage mutual understanding and challenge power imbalances, promoting inclusivity and respect for all voices. In monocultural settings, critical pedagogy can be employed to interrogate the taken-for-granted norms and to introduce global perspectives, preparing students to engage in a diverse world. Ultimately, the goal is to transform educational spaces into platforms for social justice, where students learn not only to navigate but also to critically engage with diverse social realities.

Conjecture of Study

Drawing from critical theory, discipline dynamics in project-based learning (PjBL) can be hypothesized to differ significantly between multicultural and monocultural milieus. In multicultural milieus, students bring diverse cultural norms and communication styles that influence their interactions and group discipline. Critical theory suggests that power imbalances may arise, with dominant cultural norms potentially marginalizing minority students, leading to conflicts or disengagement. Thus, it can be hypothesized that in multicultural milieus, discipline issues are more likely to stem from cultural misunderstandings and uneven participation, requiring educators to adopt more inclusive and culturally responsive disciplinary strategies (H_1). These strategies are expected to foster equity and collective responsibility, ultimately enhancing group cohesion and project outcomes.

In contrast, monocultural milieus are characterized by shared cultural norms and expectations, which may result in more uniform behavioural patterns. However, critical theory warns against the complacency that can arise in such homogeneous contexts, where uncritical adherence to established norms may suppress individuality and discourage critical questioning. Discipline in monocultural milieus may therefore manifest as a strict adherence to teacher-directed norms, potentially limiting student autonomy and creativity. Based on this perspective, it can be hypothesized that monocultural milieus will exhibit fewer overt discipline issues but may experience challenges related to passive conformity and reduced engagement in collaborative PjBL (H_2). Comparing these dynamics will provide insights into how cultural contexts shape discipline and inform effective PjBL implementation in diverse educational milieus.

METHOD

Research Design

This study employs a quantitative approach with a comparative method to analyse discipline dynamics in project-based learning (PjBL) within primary school milieus, specifically multicultural and monocultural contexts (Creswell, 2014). The design aims to compare how discipline is managed and practiced in these two distinct environments. The chosen approach and method are

appropriate as they allow for the systematic measurement and comparison of discipline-related variables across different cultural settings. By employing quantitative techniques, the study ensures objectivity and the ability to generalize findings, while the comparative method highlights specific differences and similarities, offering insights into the influence of cultural diversity on classroom discipline in PjBL (Heale & Twycross, 2015). This methodological combination provides robust evidence to inform culturally responsive teaching practices. The research design scheme is shown in Figure 1.

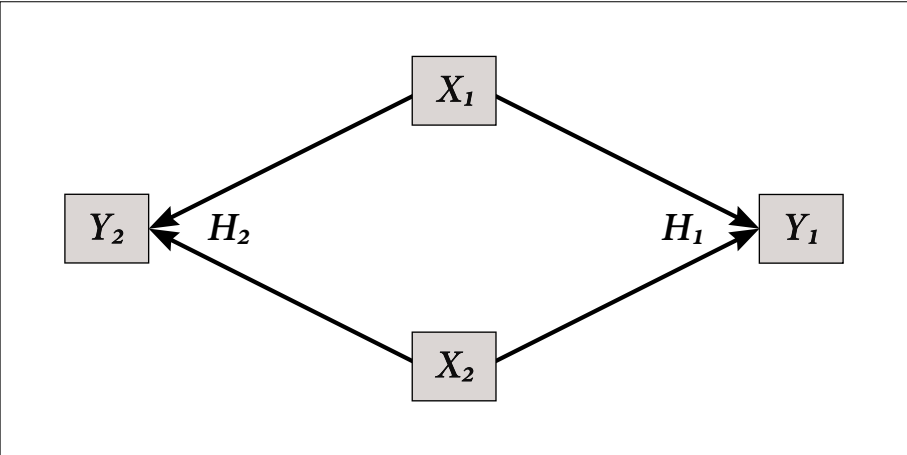


FIGURE 1. Research Design Scheme

Information:

- X_1 = Discipline
- X_2 = Project-Based Learning
- Y_1 = Multicultural Milieu
- Y_2 = Monocultural Milieu

Participants

The participants of this study consisted of 76 primary school students from four different schools in West Sulawesi, Indonesia. The selection of these schools was based on their distinct cultural characteristics: two schools represented multicultural milieus, where students come from diverse ethnic and cultural backgrounds, while the other two schools represented monocultural milieus,

characterized by a relatively homogenous student population sharing similar cultural and ethnic traits. This purposeful sampling approach ensures that the study captures a comprehensive comparison of discipline dynamics in project-based learning (PjBL) across both cultural milieus. The detailed demographics of participants are shown in Table 1.

TABLE 1. Demographic Details of Participants

Aspect	Count	(%)
Gender		
Male	29	38.2
Female	47	61.8
Age		
Years old	37	48.7
Years old	39	51.3
Educational Milieu		
Multicultural	35	46.1
Monocultural	41	53.9

The study involved a total of 76 primary school students, with a gender distribution of 29 male students (38.2%) and 47 female students (61.8%). In terms of age, the participants were fairly evenly distributed, with 37 students (48.7%) aged 6 years old and 39 students (51.3%) aged 7 years old. Regarding the educational milieu, 35 students (46.1%) were from schools with a multicultural milieu, while 41 students (53.9%) were from schools with a monocultural milieu. This diverse participant composition allows for a balanced analysis of discipline dynamics in project-based learning (PjBL) across different cultural contexts.

Measurement

In this study, two key instruments were used to collect data on discipline dynamics and student performance in project-based learning (PjBL). The Discipline Self-Assessment was employed to gauge students' self-perceptions of their behaviour, interactions, and adherence to group norms within the PjBL framework. Additionally, the Project-Based Learning Test was utilized to assess students' cognitive engagement, problem-solving abilities, and overall per-

formance during collaborative learning activities, providing insights into the impact of discipline on academic outcomes.

Discipline Dynamics Self-Assessment

To measure student discipline dynamics, the researcher adopted the Student Discipline Attitudes instrument developed by Prihatni et al. (2023). This instrument consists of 30 questionnaire items on a 1-4 scale, divided into three main dimensions. The reliability of this instrument is 0.89, indicating it is highly reliable for collecting data on student discipline. Detail of instruments show in the table 2.

TABLE 2. Student Discipline Attitudes Instrument

No	Dimensions	Items	Example item wording
1	General school rules	1-12	I wear my school uniform following the schedule.
2	Classroom rules and attendance	13-22	Students are required to attend class every day according to school hours.
3	Learning task rules and activity	23-30	Students copy the work of other students when they have not done the work/assignment.

Project-Based Learning Assessment

To measure the implementation of Project-Based Learning, the researcher developed an instrument based on the dimensions of the core practices of project-based teaching developed by Grossman et al. (2019). This instrument consists of 15 questionnaire items on a 4-point scale, divided into four main dimensions. The instrument has been tested for reliability, with the results showing a reliability coefficient of 0.72, indicating it is reliable for use in measuring the expected data. The details of the instrument are presented in Table 3 below.

TABLE 3. Project-Based Learning Instrument

No	Dimensions	Items	Example item wording
1	Disciplinary	1-5	I consistently follow the rules and guidelines set for our project tasks, even when I face challenges.
2	Collaborative	6-8	I actively contribute to group discussions and share ideas to help complete our project.
3	Iterative	9-11	I review and refine my work based on feedback from my peers and teacher during the project.
4	Authentic	12-15	I see the value of our project in real-life situations and feel motivated to produce quality work that matters outside the classroom.

Data Analysis

This quantitative study used a comparative method to analyse the influence of discipline (X1) and Project-Based Learning (PjBL) (X2) on Multicultural Milieu (Y1) and Monocultural Milieu (Y2). Descriptive statistics were initially used to summarize the distribution of the variables, including means and standard deviations. Independent Samples t-tests were then performed to compare the means of discipline and PjBL between the two milieus. The null hypothesis stated there would be no significant difference between the milieus, while the alternative hypothesis suggested a significant difference. A p-value less than 0.05 indicated statistical significance. Additionally, multiple regression analysis assessed whether discipline and PjBL could predict student behaviour and group dynamics in both milieus. The regression model was evaluated for goodness-of-fit using R-squared and for significance with p-values for each predictor, with p-values under 0.05 considered statistically significant. All analysis were conducted in SPSS with a significance level of 0.05.

RESULT

Descriptive Data

Descriptive statistics were calculated to provide an overview of the participants' scores for discipline, Project-Based Learning, and the two milieus (Multicultural and Monocultural). The means, standard deviations, and frequencies were computed to better understand the distribution of the data in both groups.

TABLE 4. Descriptive Data

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Discipline	76	47	95	73.53	11.717
Project-Based Learning	76	47	100	77.91	12.586
Milieu Types	76	1	2	1.51	.503
Valid N (listwise)	76				

Source: SPSS Data

Descriptive statistics were calculated for discipline, Project-Based Learning, and milieu types. The total sample size consisted of 76 participants. For the discipline scores, the minimum value was 47, the maximum was 95, and the mean was 73.53 with a standard deviation of 11.717, indicating a moderate spread of scores around the mean. In terms of Project-Based Learning, the minimum score was 47, the maximum was 100, and the mean was 77.91 with a standard deviation of 12.586, suggesting a slightly higher average score compared to discipline. Regarding the milieu types, with “1” representing Multicultural and “2” representing Monocultural, the mean value was 1.51 with a standard deviation of 0.503, indicating a relatively even distribution of participants between the two milieu types, with a slight skew towards the Multicultural milieu (Hair et al., 2019). These descriptive statistics provide a general understanding of the distribution of the data across the variables involved in this study.

Normality Test

A normality test was conducted to assess whether the data for discipline and Project-Based Learning followed a normal distribution in both the multicultural and monocultural milieus. The Shapiro-Wilk test was used to examine the distribution of scores for each group.

TABLE 5. Normality Test

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Discipline	.093	76	.099	.972	76	.092
Project-Based Learning	.127	76	.074	.964	76	.069
^a Lilliefors Significance Correction						

Source: SPSS Data

The results of the normality tests using Kolmogorov-Smirnov and Shapiro-Wilk indicate that the data for the Discipline and Project-Based Learning variables are normally distributed. The Kolmogorov-Smirnov test yielded a significance (p-value) of 0.099 for Discipline and 0.074 for Project-Based Learning, both greater than 0.05, suggesting that the data does not significantly differ from a normal distribution. Similar results were found in the Shapiro-Wilk test, with p-values of 0.092 for Discipline and 0.069 for Project-Based Learning, both above 0.05, confirming that the data meets the assumption of normality (Hair et al., 2019). Thus, based on these normality test results, it can be concluded that the data for both Discipline and Project-Based Learning follow a normal distribution, allowing for the use of parametric statistical analyses in subsequent steps.

Homogeneity Test

To check the assumption of equal variances between the multicultural and monocultural milieus, Levene’s Test for Equality of Variances was performed. This test was essential to determine whether to assume equal variances when conducting the Independent Samples t-test.

Table 6. Homogeneity Test

		Levene Statistic	df1	df2	Sig.
Discipline	Based on Mean	.247	1	76	.623
	Based on Median	.247	1	76	.631
Project-Based Learning	Based on Mean	.643	1	76	.411
	Based on Median	.845	1	76	.366

Source: SPSS Data

The results of the Levene’s Test for homogeneity of variance for the Discipline and Project-Based Learning variables indicate that the variances between groups are homogeneous. For the Discipline variable, both the mean-based (p-value = 0.623) and median-based (p-value = 0.631) tests yielded significance values greater than 0.05, suggesting that the variance between groups is homogeneous. Similarly, for the Project-Based Learning variable, both the mean-based (p-value = 0.411) and median-based (p-value = 0.366) tests also resulted in significance values greater than 0.05, indicating that the variance between groups for Project-Based Learning is homogeneous as well (Hair et al., 2019). Therefore, it can be concluded that the assumption of homogeneity of variance is met for both variables, allowing for the continuation of the independent t-test without concerns about differences in variances between groups.

Independent T-Test

An Independent Samples t-test was conducted to compare the means of discipline and Project-Based Learning between the multicultural and monocultural milieus. The null hypothesis stated that there would be no significant difference between the two groups, while the alternative hypothesis suggested a significant difference.

Table 7. Independent T-Test

Independent Samples Test					
	Levene’s Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
Discipline	2.142	.148	10.386	74	.000
Project-Based Learning	2.086	.153	6.947	74	.000

Source: SPSS Data

The Independent Samples Test results indicate significant differences between the two groups in both Discipline and Project-Based Learning. For Discipline, Levene’s Test showed no violation of the homogeneity of variances assumption (F = 2.142, p = 0.148), and the t-test revealed a significant mean difference (t = 10.386, df = 74, p < 0.001). Similarly, for Project-Based Learning, Levene’s Test indicated homogeneity of variances (F = 2.086, p = 0.153),

with a significant t-test result ($t = 6.947$, $df = 74$, $p < 0.001$) (Hair et al., 2019). These findings highlight substantial differences in both variables across the two groups.

Multiple Regression

Multiple regression analysis was used to examine the predictive relationship between discipline and Project-Based Learning on student behaviour and group interaction within both the multicultural and monocultural milieus. This analysis aimed to determine the extent to which these factors could explain the variance in student dynamics across the two milieus.

Table 8. Multiple Regression Test

ANOVA ^a							
Model		Sum of Squares	df	Mean Square	F	Sig.	R ²
1	Regression	14.563	2	7.282	120.164	.000 ^b	.767
	Residual	4.424	73	.061			
	Total	18.987	75				
^a Dependent Variable: Milieu Types							
^b Predictors: (Constant), Project-Based Learning, Discipline							

Source: SPSS Data

The ANOVA table indicates that the regression model is statistically significant, with an F value of 120.164 and a p-value of 0.000, suggesting that the model reliably predicts the dependent variable, Milieu Types. The predictors included in the model are Project-Based Learning and Discipline, and together they explain approximately 76.7% of the variance in Milieu Types as indicated by the R² value of 0.767. This high R² suggests a strong relationship between the independent variables and the dependent variable, indicating that the model fits the data well. The Sum of Squares Regression is 14.563, while the Sum of Squares Residual is 4.424, showing that a significant portion of the total variance (18.987) is explained by the predictors. Additionally, the Mean Square Regression (7.282) is substantially larger than the Mean Square Residual (0.061), further supporting the model's explanatory power. The statistically significant F-test result ($p < 0.05$) confirms that the predictors jointly have a significant impact on the dependent variable (Hair et al., 2019). These

findings suggest that both Project-Based Learning and Discipline contribute significantly to explaining variations in Milieu Types, making them important factors in understanding the dependent variable.

DISCUSSION

The findings of this study demonstrate that the relationship between Discipline, Project-Based Learning (PjBL), and the dependent variable, Milieu Types, varies significantly depending on whether the milieu is multicultural or monocultural. Specifically, the data suggest that Discipline has a stronger predictive power in monocultural milieus, where adherence to norms and structured routines is more critical for maintaining an effective learning environment. This aligns with Barker & Ukpong (2020) assertion that discipline fosters consistency in environments where cultural homogeneity may reduce the need for adaptive instructional strategies.

On the other hand, PjBL shows a stronger connection with multicultural milieus. The inherently collaborative and experiential nature of PjBL resonates well in diverse classrooms, where students' varied cultural backgrounds enrich the learning process. The research by Kokotsaki et al. (2016) highlights that PjBL facilitates critical thinking and enhances social interactions, making it an especially potent tool for addressing the complex needs of multicultural students. This is further supported by Nolan & Lunney Borden (2023), who emphasize culturally responsive pedagogies as essential for motivating diverse learners.

The results, supported by the significant F-test and high R^2 value (0.767), underscore that both predictors, Discipline and PjBL jointly account for substantial variance in Milieu Types. However, the differential impact observed indicates that PjBL may be more versatile in multicultural settings, fostering inclusivity and engagement through tasks that encourage cross-cultural collaboration and shared learning experiences (Wilson, 1982). This reflects a shift from merely maintaining classroom order to actively engaging students in culturally meaningful learning.

The implications of these findings for classroom practice are significant. For educators working in monocultural classrooms, the emphasis on Discipline as a predictor of effective learning outcomes suggests that structured environments and clear behavioural expectations are essential for promoting aca-

demic success. In such settings, establishing and reinforcing discipline may help maintain focus and consistency, which are vital for student achievement. Moreover, this approach can prevent distractions and foster a conducive learning environment, particularly in contexts where cultural homogeneity minimizes the need for adaptive teaching strategies (Bicer, 2021; Lee et al., 2019; Osher et al., 2010).

In contrast, the stronger association between PjBL and multicultural milieus highlights the need for more dynamic, collaborative, and culturally responsive teaching strategies in diverse classrooms (Rege et al., 2019; Ripley et al., 2024). PjBL fosters inclusivity by engaging students in real-world projects that draw upon their diverse experiences, enhancing not only cognitive skills but also social and cultural competencies. This approach promotes higher levels of engagement and deeper learning, making it particularly effective for fostering a sense of belonging and academic confidence among students from varied cultural backgrounds (Gaia et al., 2019; Kalkbrenner et al., 2022). Additionally, as global interconnectedness continues to shape modern educational landscapes, integrating PjBL in multicultural settings can help prepare students for a diverse and interconnected world (Arthur, 2002).

The findings also suggest that educators should carefully consider the specific needs of their classroom milieu when selecting instructional strategies. In classrooms characterized by cultural diversity, strategies like PjBL that emphasize collaboration, creativity, and the incorporation of students' cultural perspectives should be prioritized. Conversely, in more culturally homogeneous classrooms, a focus on discipline may be more effective in maintaining a productive and orderly learning environment. These insights can guide future teaching practices, helping educators to better address the unique challenges and opportunities presented by different cultural contexts in the classroom. By leveraging both discipline and PjBL strategically, teachers can create more effective and inclusive learning environments that cater to the diverse needs of their students.

CONCLUSION

The findings of this study reveal distinct relationships between Discipline, Project-Based Learning (PjBL), and the dependent variable, Milieu Types, in both multicultural and monocultural milieus. In monocultural milieus,

Discipline plays a crucial role in ensuring a structured and predictable learning environment, where clear expectations and routines help maintain focus and academic success. In contrast, in multicultural milieus, PjBL emerges as a stronger predictor, fostering collaboration, creativity, and engagement by allowing students from diverse backgrounds to actively participate in the learning process. These findings suggest that different instructional strategies should be applied depending on the specific characteristics of the milieu to maximize student outcomes.

The study's results indicate that the combination of Discipline and PjBL accounts for a significant proportion of the variation in Milieu Types, as shown by the high R^2 value. This emphasizes the importance of both variables in shaping classroom dynamics, albeit in different ways depending on the cultural composition of the classroom. In multicultural milieus, PjBL's inclusive and dynamic nature proves more effective, while in monocultural milieus, Discipline remains central to maintaining an orderly and productive classroom environment.

However, this study has certain limitations. The focus on only two predictors, Discipline and PjBL, does not account for other potential factors that might influence classroom dynamics, such as teacher immediacy, technological tools, or individual student characteristics. Further research should explore additional variables and the interaction between them to gain a deeper understanding of how various factors contribute to different types of milieus. Additionally, the study's cross-sectional design limits the ability to make causal inferences, suggesting that future studies could benefit from a longitudinal approach to better assess the long-term effects of these factors on student learning.

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REFERENCES

- ALEXANDER, M. A. (2019). A Cultural Evolution Model for Trend Changes in the American Secular Cycle. *Cliodynamics: The Journal of Quantitative History and Cultural Evolution*, 10(1), 456–467. <https://doi.org/10.21237/C7CLIO10141084>
- ALON, I., & HIGGINS, J. M. (2005). Global leadership success through emotional and cultural intelligences. *Business Horizons*, 48(6), 501–512. <https://doi.org/10.1016/j.bushor.2005.04.003>
- AMUNDSEN, A. B. (2023). Religious heritage in the North. *Approaching Religion*, 13(2), 6–20. <https://doi.org/10.30664/ar.130637>
- AREIQAT, A. Y., ALHEET, A., & HAMDAN, Y. (2024). *Multicultural and Monocultural Innovative Team Benefits, Success, and Implementation* (pp. 125–131). https://doi.org/10.1007/978-981-99-6909-8_11
- ARTHUR, N. (2002). Developing multicultural counseling competencies through experiential learning. *Counselor Education and Supervision*, 42(1), 2–14. <https://doi.org/10.1002/j.1556-6978.2002.tb01299.x>
- BARKER, L. A., & UKPONG, C. (2020). Monocultural versus Multicultural. In *The Wiley Encyclopedia of Personality and Individual Differences* (pp. 215–220). Wiley. <https://doi.org/10.1002/9781119547181.ch300>
- BICER, A. (2021). A Systematic Literature Review: Discipline-Specific and General Instructional Practices Fostering the Mathematical Creativity of Students. *International Journal of Education in Mathematics, Science and Technology*, 9(2), 252–281. <https://doi.org/10.46328/ijemst.1254>
- BOYLE, D. (1999). The road less traveled: Cross-cultural, international experiential learning. *International Social Work*, 42(2), 201–214. <https://doi.org/10.1177/002087289904200208>
- CASILLAS, J. C. (2014). Speed of the internationalization process: The role of diversity and depth in experiential learning. *Journal of International Business Studies*, 45(1), 85–101. <https://doi.org/10.1057/jibs.2013.29>
- CIMEN, O. A. (2014). Discussing Ethnomathematics: Is Mathematics Culturally Dependent? *Procedia - Social and Behavioral Sciences*, 564(Maret), 344–356. <https://doi.org/10.1016/j.sbspro.2014.09.215>
- CRESWELL, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). SAGE.
- DARMIANY, D., & MAULYDA, M. A. (2022). Decreasing Creativity in Ele-

- mentary School Students During Online Learning Transition. *Eurasian Journal of Educational Research*, 97(62), 154–167. <https://doi.org/10.14689/ejer.2022.97.08>
- EDMUNDS, S. (2005). Child Health Assessment at School Entry (CHASE) project: Evaluation in 10 London primary schools. *Child: Care, Health and Development*, 31(2), 143–154. <https://doi.org/10.1111/j.1365-2214.2004.00461.x>
- GAIAS, L. M., LINDSTROM JOHNSON, S., BOTTIANI, J. H., DEBNAM, K. J., & BRADSHAW, C. P. (2019). Examining teachers' classroom management profiles: Incorporating a focus on culturally responsive practice. *Journal of School Psychology*, 8(2), 156–167. <https://doi.org/10.1016/j.jsp.2019.07.017>
- GARCIA-MILA, M., MIRALDA-BANDA, A., LUNA, J., REMESAL, A., CASTELLS, N., & GILABERT, S. (2021). Change in Classroom Dialogicity to Promote Cultural Literacy across Educational Levels. *Sustainability*, 13(11), 6410. <https://doi.org/10.3390/su13116410>
- GROSSMAN, P., DEAN, C. G. P., KAVANAGH, S. S., & HERRMANN, Z. (2019). Preparing teachers for project-based teaching. *Phi Delta Kappan*, 100(7), 43–48. <https://doi.org/10.1177/0031721719841338>
- HAIR, J. F., BLACK, W. C., BABIN, B. J., & ANDERSON, R. E. (2019). *MULTIVARIATE DATA ANALYSIS* (EIGHTH EDITION). Annabel Ainscow. www.cengage.com/highered
- HEALE, R., & TWYLCROSS, A. (2015). Validity and reliability in quantitative studies. In *Evidence-Based Nursing* (3rd ed.). Focus on ExCale. <https://doi.org/10.1136/eb-2015-102129>
- HERNÁNDEZ, M. S. (2023). Beliefs and attitudes of canarians towards the chilean linguistic variety. *Lenguas Modernas*, 62, 183–209. <https://doi.org/10.13039/501100011033>
- HIRSCH, P. (2005). Real and virtual experiential learning on the Mekong: Field schools, e-Sims and cultural challenge. *Journal of Geography in Higher Education*, 29(3), 321–337. <https://doi.org/10.1080/03098260500290892>
- HORST, C. A. VAN DER, & ALBERTYN, R. M. (2018). The importance of metacognition and the experiential learning process within a cultural intelligence-based approach to cross-cultural coaching. *SA Journal of Human Resource Management*, 16(1), 1–11. <https://doi.org/10.4102/sajhrm.v16i0.951>
- IATSYSHYN, A. V. (2020). Application of augmented reality technologies for education projects preparation. *CEUR Workshop Proceedings*, 2643, 134–160.
- KALKBRENNER, M. T., JAMES, C., & PÉREZ-ROJAS, A. E. (2022). College

- Students' Awareness of Mental Disorders and Resources: Comparison across Academic Disciplines. *Journal of College Student Psychotherapy*, 36(2), 113–134. <https://doi.org/10.1080/87568225.2020.1791774>
- KARTIKA, A. (2020). Indonesian Undergraduate Students' Perceptions of Project-Based Learning in Critical Reading Class. *ELT Worldwide: Journal of English Language Teaching*, 7(1), 10. <https://doi.org/10.26858/eltww.v7i1.11976>
- KOKOTSAKI, D., MENZIES, V., & WIGGINS, A. (2016). Project-based learning: A review of the literature. *Improving Schools*, 19(3), 267–277. <https://doi.org/10.1177/1365480216659733>
- LATA SHARMA, H., & SARKAR, C. (2019). Ethnography Research: an Overview. *International Journal of Advance and Innovative Research*, 6(2), 1–6. <https://www.researchgate.net/publication/333701617>
- LEE, H. J., KIM, C. H., HAN, I., & KIM, S. H. (2019). Comparative Study of Mental Health States Among Adolescents in Multicultural Versus Monocultural Families, Using the 13th Korean Youth Risk Behavior Web-Based Survey, 2017. *Iranian Journal of Pediatrics*, 29(5). <https://doi.org/10.5812/ijp.92192>
- LEIFELS, K., & BOWEN, P. (2021). The dark side of teamwork—the relationship between social stressors, social resources and team member well-being in monocultural and multicultural work teams. *Cross Cultural & Strategic Management*, 28(4), 867–893. <https://doi.org/10.1108/CCSM-08-2020-0172>
- LYON, J. A., FENNEL, H. W., & MAGANA, A. J. (2020). Characterizing students' arguments and explanations of a discipline-based computational modeling activity. *Computer Applications in Engineering Education*, 28(4), 837–852. <https://doi.org/10.1002/cae.22256>
- MALTON, T. D., MALLORY, B. J., & CHANCE, L. (2012). Global Perspectives on School Leadership: an Ongoing Study of Policy, Practice, and Cultural Context. *Journal of Global Intelligence & Policy*, 5(9), 81–91.
- NOLAN, K., & LUNNEY BORDEN, L. (2023). It's All a Matter of Perspective. *For the Learning of Mathematics*, 43(2).
- OSHER, D., BEAR, G. G., SPRAGUE, J. R., & DOYLE, W. (2010). How can we improve school discipline? *Educational Researcher*. <https://doi.org/10.3102/0013189X09357618>
- PRIHATNI, Y., PARDIMIN, P., & ANGGASARI, N. D. (2023). Instrument construct of student's discipline attitude: Validity and reliability. *Psychology, Evaluation, and Technology in Educational Research*, 5(2). <https://doi.org/10.3102/0013189X09357618>

- org/10.33292/petier.v5i2.162
- REGE, A., WILLIAMS, K., & MENDLEIN, A. (2019). A Social Engineering Course Project for Undergraduate Students Across Multiple Disciplines. *2019 International Conference on Cyber Security and Protection of Digital Services (Cyber Security)*, 1–8. <https://doi.org/10.1109/CyberSecPODS.2019.8885085>
- RIDDERSPORRE, B., & STIER, J. (2022). Preschool Heads' Notions of Digitalized Staff–Parent Communication: The Need to Move from Monocultural to Intercultural Communication in Multicultural Sweden. *Journal of Intercultural Communication*, 22(1), 1–16. <https://doi.org/10.36923/jicc.v22i1.24>
- RIPLEY, D., ARTHARS, N., KHOSRONEJAD, M., & MARKAUSKAITE, L. (2024). Co-Designing for Learning Across Disciplines. In *Creating Design Knowledge in Educational Innovation* (pp. 178–192). Routledge. <https://doi.org/10.4324/9781003391432-21>
- STARKEY, F. (2001). Evaluation of a primary school drug drama project: Methodological issues and key findings. *Health Education Research*, 16(5), 609–622. <https://doi.org/10.1093/her/16.5.609>
- THUAN, P. D. (2018). Project-Based Learning: From Theory To Efl Classroom Practice. *Proceedings of the 6th International Open TESOL Conference 2018, May 2018*, 327–339.
- VAN DER HORST, C. A., & ALBERTYN, R. M. (2018). The importance of metacognition and the experiential learning process within a cultural intelligence-based approach to cross-cultural coaching. *SA Journal of Human Resource Management*, 16(1), 1–11. <https://doi.org/10.4102/sajhrm.v16i0.951>
- WEIGELT, C. (2009). Learning from supply-side agents: The impact of technology solution providers' experiential diversity on clients' innovation adoption. *Academy of Management Journal*, 52(1), 37–60. <https://doi.org/10.5465/AMJ.2009.36461822>
- WILSON, A. (1982). Cross-Cultural Experiential Learning for Teachers. *Theory Into Practice*, 21(3), 184–192. <https://doi.org/10.1080/00405848209543004>
- YIN, H., LEE, J. C.-K., & ZHANG, Z. (2020). Catering for Learner Diversity in Hong Kong Secondary Schools: Insights from the Relationships Between Students' Learning Styles and Approaches. *ECNU Review of Education*, 3(4), 610–631. <https://doi.org/10.1177/2096531120911800>
- ZEN, Z., REFLIANTO, SYAMSUAR, & ARIANI, F. (2022). Academic achievement: the effect of project-based online learning method and student engagement. *Heliyon*, 8(11), e11509. <https://doi.org/10.1016/j.heliyon.2022.e11509>

DINAMIKA DISCIPLINE U UČENJU TEMELJENU NA PROJEKTIMA U OSNOVNOJ ŠKOLI: KOMPARATIVNA STUDIJA MULTIKULTURNOGA I MONOKULTURNOGA OKRUŽJA

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SAŽETAK

KLJUČNE RIJEČI:

disciplina učenika u učionici; kulturno okruženje; djetinjstvo; socijalna interakcija

U radu se istražuje utjecaj multikulturnog i monokulturnog učioničkog okruženja na dinamiku discipline i implementaciju učenja temeljenog na projektima (eng. Project-Based Learning, PjBL) u osnovnim školama. Glavni je cilj ispitati kako kulturni kontekst oblikuje disciplinirano ponašanje učenika i strategije koje učitelji koriste unutar okvira PjBL-a. Korištena je kvantitativna komparativna metoda, koja je obuhvatila 76 učenika iz četiriju škola u Zapadnom Sulawesi, Indonezija. Podaci su prikupljeni korištenjem samoprocjene discipline i testa izvedbe PjBL-a. Rezultati su pokazali značajne razlike u dinamici disciplini ($t = 10,386$, $p < 0,001$) i PjBL-u ($t = 6,947$, $p < 0,001$) između okruženja. Regresijska analiza pokazala je da disciplina i PjBL zajednički objašnjavaju 76,7% varijance u vrstama okruženja ($R^2 = 0,767$, $F = 120,164$, $p < 0,001$). U monokulturnim okruženjima disciplina je bila jači prediktor, dok je u multikulturnim okruženjima PjBL imao veći utjecaj. Ovi rezultati naglašavaju potrebu za strategijama specifičnim za kontekst, pri čemu disciplina podržava strukturu u monokulturnim učionicama, dok PjBL povećava angažman u multikulturnim. Rezultati istraživanja naglašavaju važnost prilagodbe nastavnih metoda u učionici, pružajući vrijedne uvide za učitelje i donositelje obrazovnih politika. Buduća istraživanja trebaju istražiti dodatne varijable i longitudinalna praćenja kako bi dublje razumjeli dinamiku discipline učenika.