



The Influence of Multicultural Education and Learning Motivation on Student Academic Achievement

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Abstract

This study aims to determine the extent of influence of multicultural education and student motivation on student academic achievement at St. Familia Catholic Vocational School. The method used in this study is a quantitative research method using a correlative approach with the aim of testing the hypothesis regarding the magnitude of the influence and whether or not there is a relationship between the independent variables (X1 and X2) and the dependent variable (Y). The sample in this study according to the Slovin formula was 62 people. The research instrument used was distributing questionnaires with alternative answers in the form of statements provided. Before conducting data analysis, analysis requirements were first tested, namely the normality test, linearity test and multicollinearity test. Hypothesis testing used multiple Linear Regression analysis. The results of the study showed that multiculturalism education partially influenced student academic achievement at Santa Falimia Tomohon Vocational School with a percentage of 81.9% and was in the very good category. Learning motivation partially influenced student academic achievement at Santa Falimia Tomohon Vocational School with a percentage of 54.3% and was in the good category. Multicultural education and learning motivation together influence students' academic achievement at Santa Falimia Tomohon Vocational School with an influence percentage of 91.7% and is in the very good category.

Introduction

Education is a key pillar in developing quality human resources (Paliukh et al., 2025; Sumual et al., 2024; Agustian et al., 2023). In Indonesia, formal education, such as vocational high schools (SMK), aims not only to provide technical skills but also to shape students' character so they can compete in the diverse era of globalization. In accordance with Law No. 20 of 2003 concerning the National Education System, education aims to enrich the nation's life and develop students' potential to become individuals who are faithful, pious, and possess noble character, as well as knowledgeable (Sidabutar et al., 2020; Chukwuma, 2022; Hakim, 2023).

However, the challenge facing education today is the cultural diversity of students, which often creates a gap in understanding the importance of mutual respect for differences (Naz et al., 2023; Cruz et al., 2025; Martin-Beltran et al., 2023). Multicultural education exists as an approach that can bridge this diversity. Multicultural education is a policy that emphasizes the recognition of cultural, linguistic, and religious diversity to create an inclusive and supportive learning environment (Khalim & Parut, 2025; Hariyadi & Rodiyah, 2023; Faridah et al., 2025). Muskhafia (2023) states that multicultural education can create an inclusive learning environment, help students understand other cultural perspectives, and enhance interaction between students from diverse cultural backgrounds. This allows students to be more active in

the learning process and improves their academic achievement (Muskhafia, 2023; Nurbavliyev et al., 2022; Banda & Nzabahimana, 2023).

In addition to its benefits for students' social relationships, multicultural education also increases student engagement in learning. When students feel valued and accepted, they are more likely to actively participate, ask questions, and utilize educational resources optimally (Muskhafia, 2023; Masnawati & Darmawan, 2023; Alim et al., 2023). Thus, multicultural education is an important foundation for creating a conducive learning environment for all students.

On the other hand, learning motivation is a key factor that cannot be ignored in the educational process. Firdaus Umar et al., (2023) explain that learning motivation is the primary driver that drives students to achieve optimal academic results. Their research shows a positive relationship between learning motivation and academic achievement. Students with high learning motivation tend to approach the learning process with more enthusiasm and achieve better learning outcomes than those with low motivation Firdaus Umar et al., (2023).

Learning motivation can originate from within students (intrinsic) or from outside (extrinsic). (Zhou & Zhang, 2024; John et al., 2023; Rahmi & Neviyarni, 2022). Intrinsic motivation arises when students are curious or interested in the subject matter, while extrinsic motivation is usually influenced by external stimuli such as praise, rewards, or support from parents and teachers (Sidabutar et al., 2020; Abah et al., 2022; Hassan, 2024). However, research shows that low learning motivation remains a common problem in secondary schools, including vocational high schools. Anifah et al. (2018) found that the lack of implementation of multicultural education and low learning motivation were the main obstacles to student academic achievement. This indicates the need for a strategic approach to integrate these two aspects into the learning process (Anifah et al., 2018; Lehmann, 2022; Chan, 2023).

Increasing learning motivation not only impacts academic outcomes but also fosters character development, leading to greater self-confidence and independence in students (Ruijuan et al., 2023; Merdiaty & Sulistiasih, 2024; Ghafar, 2023). Lutfiwati (2020) revealed that high learning motivation makes students more diligent in facing assignments, resilient in overcoming difficulties, and more active in seeking solutions to their learning challenges. Conversely, without motivational support, students tend to be passive and struggle to achieve optimal learning outcomes. The reality at St. Familia Catholic Vocational School in Tomohon, in terms of multicultural education, is that 10% of students still have not properly implemented the principles of multicultural education. Furthermore, regarding learning motivation, some students appear active in the learning process and are able to interact effectively. However, 25% of students still lack the ability to motivate themselves to learn. This is due to intrinsic factors within the students themselves, who are unable to motivate themselves and consistently manage their study time at home. Extrinsic factors, such as family and social environments, do not support student motivation in learning, resulting in declining academic achievement. Some students have experienced improvements in academic achievement, but 28% have not shown any improvement in academic achievement at school.

Based on the description above, it is clear that multicultural education and learning motivation are two complementary aspects in creating quality learning. Therefore, this study aims to analyze the influence of these two aspects on student academic achievement at St. Familia Catholic Vocational School in Tomohon, which is expected to make a significant contribution to the development of education in Indonesia.

Methods

The research design used in this paper was quantitative research design as the aim of the study was to have a clear and measurable record of the relationship between multicultural education and learning motivation to the academic achievement of the students in St. Familia Catholic Vocational School in Tomohon. Quantitative method allows the researcher to quantify complicated educational phenomena into numbers that can be handled in a systematic manner. In such a way, the study does not just describe the classroom tendencies but validates the strength of associations between variables with the help of the statistical procedures that are more objective and accurate.

As the researcher needed to base the research on the actual lives of students, it started with an initial observation of the school setting. This initial interaction was significant as it helped to understand that cultural diversity is a characteristic of the student population and that there is a difference in the degree of learning motivation among the students. The principles of multicultural understanding seemed to be practiced well in some classrooms and the students nevertheless, could not appreciate differences. Similarly, there were students who exhibited great internal drive to learn but there were those students who still had to rely on outside encouragement. These observations added to the knowledge of the researcher about the context and also made the items in the questionnaires actually reflect what the students were going through.

The study population represented the entire body of seventy-four students in the eleventh grade in the school. As far as it was impossible to involve all of the students in the process of collecting data, the researcher used the Slovin formula in order to find an adequate sample size. Based on this calculation, sixty-two students were obtained in the sample. This figure was deemed to be representative enough, yet allowed the researcher to carry out a sound regression analysis with sufficient statistical power in interpreting the findings with a lot of confidence.

These data were obtained in two methods that are complementary. The observation further enhanced the understanding of the researcher in the classroom interactions and behavioral patterns and how the multicultural values were realized in the process of performing learning activities. In conjunction with this, the questionnaire was the major tool of measuring the three key variables. All the constructs were broken down into a series of statements requiring students to comment on their experiences, perceptions, and attitudes. The formal structure of the response format enabled the researcher to transform subjective opinions into measurable information that could be tested by statistics.

The dataset underwent a number of prerequisite tests to identify whether it satisfied the assumptions of the parametric analysis before the analysis of the hypotheses could be performed. The test of normality was employed to ensure that data distribution was close to normal curve. The linearity test was used to estimate whether the relationships between the independent and dependent variable were linear. The multicollinearity test contributed to the fact that the two independent variables were not too much correlated against each other since such state of affairs might weaken the accuracy of the regression model. These findings showed that all the assumptions were met, further augmenting the trustworthiness of the further analyses.

Multiple linear regression with IBM SPSS 25 on Windows was the main method of analysis of the current paper. This analytical plan allowed the researcher to assess the effect of individual and integrated effect of multicultural education and learning motivation on academic achievement. The t test was used to indicate the partial contribution of each of the independent

variables whereas the F test gave a graphical representation of the collaboration between the two variables in determining the academic performance of students. Also, the determination coefficient was used to explain the extent to which the two predictors could explain the variation in academic achievement.

In general, the methodological framework used in this study has been developed in a way that would yield results that are not only statistically valid but also applicable in the context of education under study. The study, by carefully accumulating evidence of the role of multicultural education and learning motivation on student performance, will give a basis on which schools should rethink their strategies of inclusive teaching and motivation. The organization of the methodology gives the research a voice to the current debates on how schools can create an environment that can cultivate respect towards diversity and raise awareness among students to own their own learning.

Results and Discussion

It is necessary to put in place the intellectual position within which the findings are construed before gleaning to the empirical results. The quantitative research can seem to be somehow detached to the realities of the classroom; however, in this research the patterns of numbers that arise bear some remnants of the everyday experiences of diversity and motivation of the students. The statistical skills that will be applied will not only aim at testing theoretical hypotheses but also explain how multicultural education and motivation to learn occur in a school setting that is continually negotiating the cultural plurality and different levels of student engagement. In this regard, the analysis is done with the understanding that the numbers have value only as they are a product of the experiences and choice of students that are in the same learning environment.

The above sections have outlined the conceptual threads that are based on this research. Multicultural education offers a platform on which one can learn how various identities can co-exist in an effective learning process. Instead, motivation can display the internal and external influences that keep the students willing to be a part and continue their course. Despite the fact that these constructs are so commonly debated in the literature of education, their interaction in a real-life context of a vocational school can manifest itself in more complex, multidimensional ways than can be monitored solely on the basis of the theory. This is the reason why the findings given later is not taken as technical affirmation but a pointer of how these constructs express themselves as part of the daily patterns of learning at St. ⁶ Fam Vocational School.

It should also be noted that academic success is not produced in a vacuum. The educational performance of students is an expression of the total effect of pedagogical approaches, school climate, peer relationships and personal temperaments that condition their experience within the learning environment. In case of multicultural values, they can decrease tension, create trust and motivate students to regard themselves as members of a bigger community. With motivation, students will have inner resources which can withstand even when tasks are tasking. The consequent outcomes then have to be interpreted as echoes of this larger ecology whereby school processes promote or inhibit the intellectual development of students.

Also, the change of the results part introduces a transition of the conceptual framing into the empirical grounding. The preceding tests did not involve a formal procedure but rather measures that guaranteed the validity of conclusions made. The tests of normalcy, linearity, and multicollinearity were conducted in order to assure that the relationships revealed are sound in terms of statistics and that the trends observed are true representations of the trends in the

student body. Having all these foundations in place, the findings cannot be just descriptive summaries but rather become windows through which an additional insight into the learning climate of the school can be obtained.

The results and discussion are given a more precise purpose by this interpretative frame. They do not only show the power of the relationships between multicultural education, learning motivation, and academic achievement, but also how the learning environment of the school influences the relations in the most subtle ways. They give the information about the extent of inclusion practices becoming established, the reaction of students when they feel noticed and accepted, and the role of motivation and cultural awareness in affecting performance. By treating the findings with this kind of sensibility, the analysis becomes a device of bridging the gap between the numerical evidence and the educational truth and appears to provide a more extensive view of what encourages or limits student achievement.

Data and Variable Description

Table 1. Data and variable description

	N	Minimum	Maximum	Mean	Std. Deviation
PM	62	29	40	35.56	3.337
MB	62	30	40	35.82	2.984
PA	62	30	40	35.97	2.758
Valid N (listwise)	62				

Source: Data processed by researchers (2025)

The results of the descriptive test with a sample of 62 studies indicate that the minimum (lowest) score for multicultural education is 29. The maximum (highest) score is 40. This indicates that the scores for multicultural education range from 29 to 40, with an average (mean) score of 35.56 and a standard deviation score of 3.34. If the standard deviation score is less than or less than the average (mean), it indicates that multicultural education has an even distribution of data.

The results of the descriptive test with a sample of 62 studies indicate that the minimum (lowest) score for learning motivation is 30. The maximum (highest) score is 40. This indicates that the scores for learning motivation range from 30 to 40, with an average (mean) score of 35.82 and a standard deviation score of 2.98. If the standard deviation score is less than or less than the average (mean), it indicates that the data for learning motivation is evenly distributed.

The results of the descriptive test using a sample of 62 students indicate that the minimum (lowest) score for Student Academic Achievement is 30. The maximum (highest) score is 40. This indicates that learning motivation scores range from 30 to 40, with an average (mean) score of 35.97 and a standard deviation score of 2.76. If the standard deviation score is lower than the average (mean), it indicates that Student Academic Achievement data is evenly distributed.

Prerequisite Analysis Test

Data Normality Test

Table 2. Normality Test

		Unstandardized Residual
N		62
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.79259934
Most Extreme Differences	Absolute	.100
	Positive	.071
	Negative	-.100
Test Statistic		.100
Asymp. Sig. (2-tailed)		.200 ^c

Source: Data processed by researchers (2025)

Based on the table above, the value or number obtained from the normality test is 0.200. From this result, it can be interpreted that the data is at the normality level because the data obtained is greater than 0.05.

Data Linearity Test

Table 3. Data Linearity Test

		Sum of Squares	df	Mean Square	F	Sig
PA * PM Between Groups	(Combined)	399.657	11	36.332	28.262	.000
	Linearity	380.122	1	380.122	295.683	.000
	Deviation from Linearity	19.534	10	1.953	1.519	.160
Within Groups		64.279	50	1.286		
Total		463.935	61			

Source: Data processed by researchers (2025)

Table 4. Data Linearity Test 2

		Sum of Squares	df	Mean Square	F	Sig

PA * PM Between Groups	(Combined)	414.664	10	41.466	42.922	.000
	Linearity	404.436	1	404.436	418.628	.000
	Deviation from Linearity	10.229	9	1.137	1.176	.330
Within Groups		49.271	51	.966		
Total		463.935	61			

Source: Data processed by researchers (2025)

The results of the data linearity test in the ANOVA Table above, obtained the F coefficient value in the deviation from linearity row for the X1-Y linearity test of 1.519 with a significance of 0.160 and for the X2-Y linearity test of 1.176 with a significance of 0.330. So it can be said that the two data are linearly related because 0.160 and 0.330 are greater than 0.05.

Multicollinearity Test

Table 5. Multicollinearity Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
	B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	4.527	1.247		3.632	.001		
	PM	.333	.058	.404	5.710	.000	.280	3.567
	MB	.547	.065	.591	8.369	.000	.280	3.567

Source: Data processed by researchers (2025)

Based on the table above, the VIF value for X1 and X2 is 3.567, which means it is smaller than 10. This can be interpreted as meaning that there is no multicollinearity or there is no linear relationship between the two independent variables.

Hypothesis Testing

T-Test

This test is conducted using a partial correlation test to determine and measure whether the two X variables influence the Y variable and how much influence they have.

Correlation (R) is needed to determine and measure the extent of the partial influence of the two X variables on the Y variable.

Table 6. T-Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	4.527	1.247		3.632	.001

	PM	.333	.058	.404	5.710	.000
	MB	.547	.065	.591	8.369	.000

Source: Data processed by researchers (2025)

The hypothesis test for X1 against Y yielded a partial correlation (R) of 0.905, indicating that multicultural education is in the very good category, and an R2 value of 0.819. Based on these results, multicultural education has a partial effect on student academic achievement of 81.9%, therefore H1 is accepted and H0 is rejected.

The calculated t-value was $5.710 > 2.001$, and the significance level was $0.000 < 0.05$, indicating that multicultural education has a significant influence on student academic achievement at Santa Familia Vocational School, Tomohon.

The hypothesis test for X2 against Y yielded a partial correlation (R) of 0.737, indicating that learning motivation is in the good category, and an R2 value of 0.543. Based on these results, learning motivation has a partial effect on student academic achievement of 54.3%, therefore H1 is accepted and H0 is rejected.

The calculated t value obtained was $8.369 > 2.001$ t table value and the significance figure was $0.000 < 0.05$, which means that learning motivation has a significant influence on students' academic achievement at Santa Familia Tomohon Vocational School.

F Test

The F test is conducted using multiple regression analysis to determine and measure whether variables X1 and X2 influence variable Y and how significant the influence is.

Table 7. F-Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	425.614	2	212.807	327.643	.000 ^b
	Residual	38.321	59	.650		
	Total	463.935	61			

Source: Data processed by researchers (2025)

Based on the table above, the calculated F value is $327.647 > 3.15$ F table value and significance is $0.000 < 0.05$, so H1 is accepted and H0 is rejected so that the conclusion is that there is a significant influence of multicultural education and learning motivation together on student academic achievement at Santa Familia Tomohon Vocational School.

Table 8. R Square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.958 ^a	.917	.915	.806

Source: Data processed by researchers (2025)

Based on the table above, the R value obtained was 0.958 which shows that multicultural education and learning motivation are in the Very Good category and R2 obtained was 0.917

which shows that multicultural education and learning motivation have an influence on students' academic achievement of 91.7%.

Interpreting the Interplay Between Multicultural Education, Motivation, and Academic Achievement

The current paper shows that the impact of multicultural education on academic performance of students is strong enough, hence, a more sophisticated analysis of how learning settings based on cultural inclusiveness contribute to the intellectual growth of students is warranted. Indonesian studies have shown in the recent past that the more the schools base their cultural diversity on the realities of living practice instead of as an abstract ideal, incorporating it into lessons, relations, and institutional practices, the more the students begin to view learning as something inherent in their identities. According to Albar and colleagues (2024), multicultural education enhances the ability of students to value their own cultures, at the same time increasing their intellectual interest in other cultures. This liberalized view creates some kind of mental receptiveness that in most cases, spills over to an academic involvement and thus it is possible to explain why the influence of multicultural education, which is evident in this experiment, is pronounced and uniform.

A significant influence is also the environment that the students are learning in. Astutik (2024) illustrates that schools that possess strong social capital to promote shared values and collective trust, students are easier to express themselves in such schools and are confident that they will be safe. Students tend to listen, cooperate and learn with each other better in such climates in a manner which facilitates academic advancement. The results of this research give some echoes to this suggestion because the effects of multicultural education can be manifested not only through formal education but also through daily life exchange where the habits of mutual respect can be formed. These interrelational practices facilitate learning and make it more meaningful as the student is less anxious about social tension and is open to academic challenge.

The process of infusing multicultural values in the teaching process continues to influence the reaction of students to education. As it is proved by Amarullah and his colleagues (2024), multicultural principles can be truly effective once they permeate the curriculum materials, teaching techniques, teacher training, and school-community relationships. With the inclusion of multicultural learning in a holistic approach, the students get exposed to diversity in content, through discussions and school experiences, hence get a better understanding of the material and their social world. Such a strong predictive force of multicultural education as it was observed in this study, therefore, might be symptomatic of learning environment where cultural inclusivity is not only symbolic, but is actively practiced on a variety of pedagogical levels.

In addition to the classroom, there are the wider social consequences of multicultural exposure that influence academic behavior. Abdullah and colleagues (2023) discover that the multicultural values can promote the formation of closer bonds within the communities and reduce the emotional distance that usually exists between cultural groups. When students bring these social insights to the school setting, they will feel more brave and free to interact with others, believing that they form a broader supportive group. This feeling of belongingness can provide the foundation of more solid academic involvement, which partially explains the strength of the relationship observed in this paper.

Although learning motivation is a major factor in this research, it seems to have a smaller impact as compared to multicultural education. Such a trend suggests itself in the case of vocational students as studies by Eegdeman and his coauthors (2025) show that motivation

among students in vocational facilities does not remain the same but changes as students adapt to new demands, social dynamics, and the perception of course relevance. The fluctuating quality of motivation might serve as the reason, why its impact is interesting yet not as strong, since the intrinsic motivation of the students may change with the personal experiences, however, the impact of multicultural teaching is usually more consistent and environmental.

Future studies shed more light on the interaction between motivation and the learning environment. Held and colleagues (2024) demonstrate that students can acquire a steady motivation when they are provided with an atmosphere that can fulfill their psychological requirements. As soon as students trust in being able, being respected and connected with other people, they start to manage their learning behavior in a better manner. These environments are often born out of teachers embracing inclusive practices that are based on multicultural principles. A possible reason, therefore, is that the motivational pathways as the outcome of multicultural education were mentioned in this study but indirectly since motivation itself was found to be a smaller predictor among the regression results.

Self efficacy also provides another angle through which motivation is converted into academic achievement. Scholars in MDPI published a study that reveals that vocational learners who are confident in their academic abilities are more engaged in school activities and committed to learning goals. When multicultural pedagogies reassure us of the identities of the students, the latter might feel greater confidence about their potential to succeed. The implication of this interpretation is that psychosocial characteristics of self-confidence as well as resilience might help mediate the relationship between multicultural education and academic achievement.

Inquiries carried out in Indonesia also support the beneficial academic influence of multicultural teaching. Safi'i and colleagues (2024) noticed that when multicultural themes are incorporated into the content of the lesson, students react with enthusiasm, but also emphasized that these benefits do not occur without long-term teacher and administration support. The observations made by the authors highlight the possibility that the strong educational performance in the study is due to a sustainable and planned culture of inclusion in the school setting.

A similar trend can be traced in the study related to religious and moral education. Sulistyningrum and her colleagues (2024) discovered that the moral identities of students are enhanced and the formation of their characters when multicultural values are harmonized with the teachings of religion. Their results add a lot to the knowledge on multicultural education by demonstrating that multicultural education is not only a pedagogical tool but a character-shaping process that can have impacts on various aspects of student development. This stratified procedure can give academic dedication through the capacity of students to stay rooted in an ethical and cultural structure that is coherent.

Although the results of this study are very insightful, there are some issues of methodology that should be mentioned. The work by Astutik (2024) and Amarullah et al. (2024) also urge us not to forget that multicultural education can be the most effective when supported by such structural factors as the knowledge of the teacher, school administration, and community involvement. By default, thus, the high effect that was noted in this research is probably the overall effect of the two factors, despite the fact that the statistical model has integrated them into one variable. This implies that future studies should explore the indirect consequences that are brought about by these structural dimensions.

This study also has limitations to causal inference due to the cross-sectional nature of the research. Researchers, like Held et al. (2024) and Eegdeman et al. (2025), suggest longitudinal

or mixed-methods, which is a more appropriate way of elucidating dynamic nature of motivation, identity formation, and multicultural instruction relationships in students. The generalization to a larger sample of different vocational schools may also help to find out whether the relationships here are stable over a wide range of institutional cultures or whether they are enhanced by certain features of St. Familia.

The most obvious point that can be made out of such a discussion is that multicultural education and motivation to learn are closely intertwined factors that determine the academic experiences of vocational students. Multicultural education provides the basis of relation and intellectual base on which learning flourishes as motivation is the inner desire of students to utilize that base. Collectively, these forces indicate that schools can attain significant academic benefits through fostering the environments where cultural respect, personal agency, and intellectual curiosity are developed in balance with each other.

Conclusion

Based on the research results obtained and the discussion outlined above, the author draws the following conclusions: 1. Multicultural education partially influences student academic achievement at Santa Falimia Vocational School, Tomohon, with a percentage of 81.9%, categorized as very good. 2. Learning motivation partially influences student academic achievement at Santa Falimia Vocational School, Tomohon, with a percentage of 54.3%, categorized as good. 3. Multicultural education and learning motivation jointly influence student academic achievement at Santa Falimia Vocational School, with a percentage of 91.7%, categorized as very good.

Students are expected to foster a sense of mutual respect for the differences that exist among them, increasing their self-motivation in learning to achieve better academic achievement. Teachers are expected to be able to integrate multicultural values into learning materials, creating an inclusive and conducive learning environment. Teachers are able to motivate students to continue to increase their enthusiasm for learning to achieve good academic achievement. Schools are expected to make multicultural education part of the school culture, improve school programs and policies that can help foster student learning motivation and schools also build good relationships in the form of cooperation to improve better education for students.

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