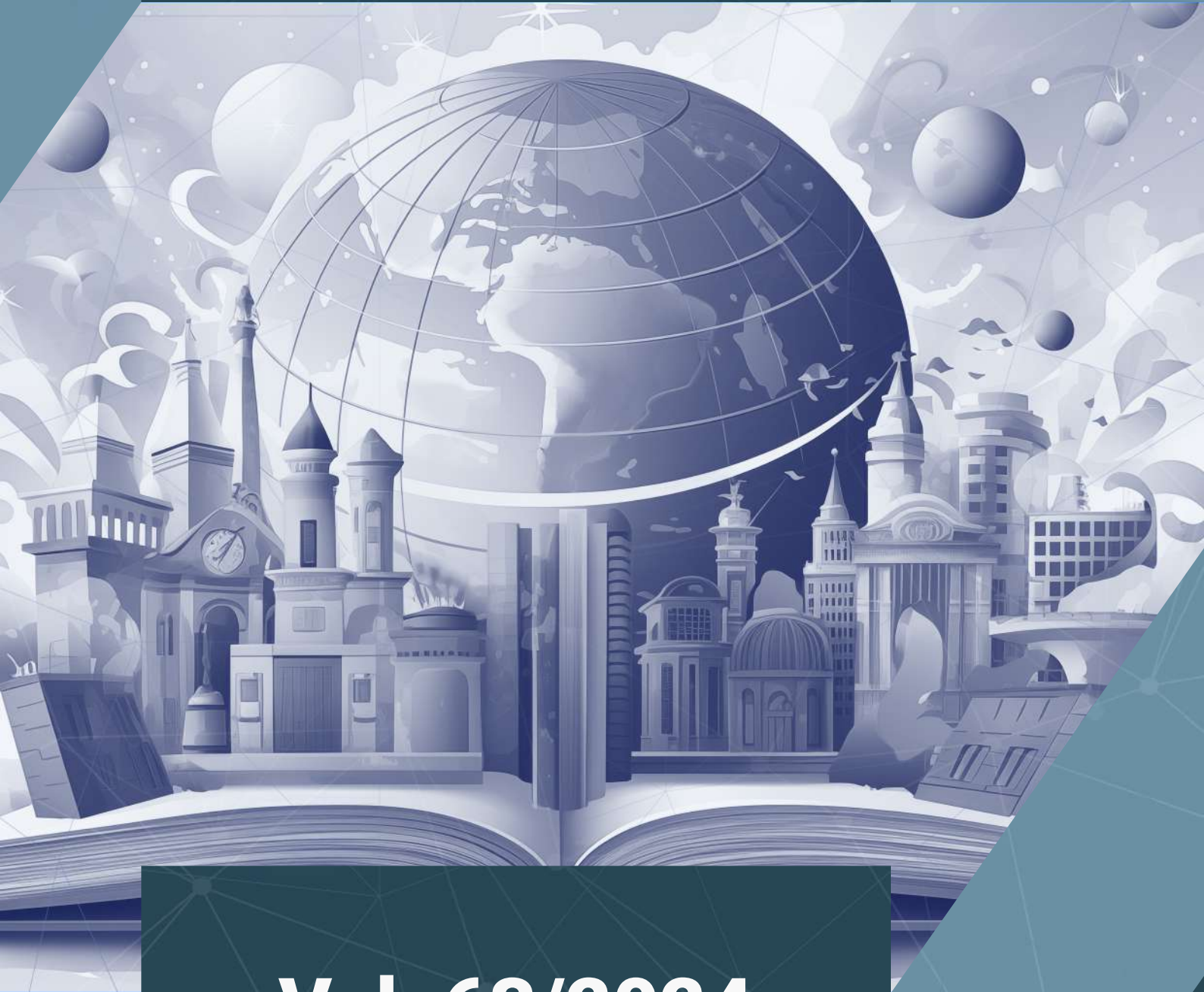




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Moral Intelligence and Academic Performance of Secondary School Students

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Abstract. This study investigated the relationship between moral intelligence and academic performance among secondary school students. The sample consisted of 123 respondents from grades 9-12 in a private international school in Indonesia. The study followed a descriptive-correlational research design. Descriptive statistics showed that the respondents had a moderate level of moral competency. Pearson's product-moment correlation analysis revealed a weak but statistically significant positive relationship between moral intelligence and academic performance. Simple linear regression analysis indicated that moral intelligence significantly predicted academic achievement among high school students. An independent samples t-test revealed a significant difference in moral intelligence between the genders, with female students having higher moral competency than male students. One-way analysis of variance (ANOVA) showed a significant difference in moral intelligence across grade levels but no significant difference across religious affiliation. Implications of the findings and recommendations for further research were stated.

Keywords. academic performance, moral intelligence, moral competency

Introduction

Intelligence is a key concept in education. Traditionally, it has been measured in terms of the intelligence quotient (IQ) which primarily assesses general cognitive ability. However, alternative theories such as Gardner's (1983) *Multiple Intelligences*, have challenged this conventional understanding, suggesting the existence of a "broad spectrum of intelligences that is crucial for success in life" (Kruger, 2012, p. 7). Gardner initially identified seven core types of intelligence: linguistic, logical-mathematical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal. He later introduced an eighth, naturalist intelligence. He has also explored the potential for additional forms such as social, emotional, existential, spiritual, and moral intelligence (Gardner, 1998, 1999).

Moral intelligence is a relatively recent construct. Lennick & Kiel (2005) define it as "the mental capacity to determine how universal human principles should be applied to our values, goals, and actions" (p. 35). They identified four universal principles as key indicators of moral intelligence: integrity, responsibility, compassion, and forgiveness. Additionally, they outline four competencies related to integrity, three related to responsibility, one related to compassion, and two related to forgiveness. The integration of moral intelligence in holistic

education is considered essential for fostering “individuals, schools and other social systems that are more healthy and positive” (Clarken, 2010, p. 1).

Students’ academic performance in their secondary school years is fundamental. It has a significant impact on their future educational and career opportunities. As secondary education is a critical time for students’ cognitive, social, and emotional development, it is essential to identify the key determinants of academic achievement (Costa et al., 2024). Understanding the aspects that contribute to academic success can provide valuable insights into approaches to support students. There is sufficient literature on the well-established predictors of academic performance in secondary school students. These predictors include cognitive abilities, motivation, socioeconomic status, and school environment (Akey, 2006; Costa et al., 2024; Edgerton & McKechnie, 2023; Lozano-Blasco et al., 2022; Steinmayr et al., 2019). The relationship between moral intelligence and academic achievement is an emerging area of interest. A recent study found that components of moral intelligence including integrity, responsibility, and empathy are positively correlated with academic performance and negatively associated with academic entitlement (Abdellatif, 2022). Exploring moral intelligence could shed light on whether the teaching of character education and ethical development leads to academic success. Therefore, more empirical research is required to establish a clear connection between moral intelligence and student outcomes, particularly concerning academic performance.

The purpose of this study was to determine the relationship between moral intelligence and the academic performance of secondary school students in a private international school in Indonesia. The study also sought to examine whether there were group differences in moral intelligence across the demographic variables of gender, grade level, and religious affiliation. The following three research questions guided the study: (1) Is there a significant relationship between moral intelligence and the academic performance of secondary school students? (2) Does moral intelligence significantly predict the academic performance of secondary school students? (3) Is there a significant difference in the respondents’ moral intelligence level when grouped according to (a) gender, (b) grade level, and (c) religious affiliation? In line with the research questions, the following null hypotheses (H_0) were formulated: H_{01} : There is no significant relationship between moral intelligence and academic achievement of secondary school students. H_{02} : Moral intelligence does not significantly predict the academic achievement of secondary school students. H_{03} : There is no significant difference in the respondents’ moral intelligence level when grouped according to (a) gender, (b) grade level, and (c) religious affiliation.

Moral Intelligence in Education Research

Research on moral intelligence in educational contexts remains limited. A few studies in the past have examined the construct and its relationship with different variables such as cultural background, gender, academic performance, and social behavior. The studies have been conducted in university and secondary school settings employing different instruments and focusing on various predictors of moral competence. This brief review is organized chronologically and highlights the geographical and cultural contexts. The studies were predominantly from Middle Eastern and Islamic regions, where most of the research has been conducted.

In a cross-cultural study, Wankel, Stachowicz-Stanusch, & Tamtana (2011) analyzed data on 122 university students from Poland, Indonesia, and the United States. They investigated the impact of national culture and perception of corruption on students’ moral

competencies. The authors analyzed secondary data on national culture, including four dimensions: power distance index, individualism, masculinity, and uncertainty avoidance index. They also obtained the corruption perception data from a 2009 global corruption report. To measure students' moral competency, the authors used the moral competency inventory (MCI) developed by Lennick and Kiel (2005). The results indicated that the higher the levels of individualism and femininity in the national culture, the higher the level of students' moral competence. The higher the power distance of national culture and the perceived corruption of the country, the lower the students' moral competence.

Hamid, Idrus, & Saat, (2012) conducted a study on 75 youth from a Malaysian university utilizing the same model developed by Lennick and Kiel (2005). The study aimed to investigate differences in moral competency among the respondents based on gender and religious affiliation. The study concluded that generally, there is no difference in moral competency among university students based on gender and religious affiliation. However, on one subscale, the results showed that female students were "more likely than men to act consistently with principles, values and beliefs" (Hamid, Idrus, & Saat, 2012, p. 4). Moreover, on three subscales, Muslim students had higher moral intelligence compared to Christians and Buddhists.

Mahasneh (2014) surveyed 909 students in a Jordanian university to determine the students' level of moral competence and differences based on gender, academic level, and performance. The study utilized a 28-item moral competence inventory developed by Daniel and Benjamin (2010) which conceptualized moral competence to include integrity, honesty, authenticity, impression management, and responsibility. Based on the results of the study, the respondents had a medium level of moral competence. It was also found that female students showed higher moral competence than male students. This finding contradicts the results from the Malaysian sample discussed above. Additionally, the study reported a significant difference in moral competence based on academic level and academic performance. Despite the significant results, the study did not specify in which academic levels the difference existed. Moreover, it was not clear what the variable, academic performance, represented in the study.

A study from the Philippines (Guiab et al., 2015) aimed to determine the perception of faculty, prospective teachers, and stakeholders on the moral intelligence of faculty and prospective teachers. This study also adopted the MCI by Lennick and Kiel (2005). The participants consisted of 34 faculty members, 142 graduating students, and 174 stakeholders. The results showed that the faculty had a high perceived moral intelligence while the prospective teachers had an average perceived moral intelligence. In addition, only the gender and civil status of faculty had a significant correlation with moral intelligence.

A study by Mohammadi et al., (2020) analyzed the components of moral intelligence based on the model developed by Lennick and Kiel (2005). The authors surveyed 322 medical science students in Iran and found that a sense of responsibility was the dominant predictive component of moral intelligence. The responsibility component emerged as the strongest predictor explaining about 66% of the variation in moral competence among the sampled students. Another study from three Iranian universities examined the predictors of moral intelligence and its relationship with self-compassion and cultural competence in nursing students (Nobahar et al., 2022). The results indicated that the nursing students had a good level of moral intelligence, moderate self-compassion, and poor cultural competence. In addition, the study found that marital status, academic year, and self-compassion significantly predicted moral intelligence, with self-compassion being the strongest predictor. Another study by Turan et al. (2022) investigated the role of self-efficacy and moral intelligence in the formation of

sportsmanship behavior among 397 university students in Turkey. The study found that self-efficacy and components of moral intelligence such as empathy, self-control, and kindness explained 48% of the variation in sportsmanship behavior.

Other investigations have examined the relationship between moral intelligence and student outcomes in junior and secondary schools. For instance, a study of third-year high school students in Iran suggested that there is a strong positive relationship between moral intelligence and students' achievement (Hoseinpoor & Ranjdoost, 2013). In addition, the study reported that girls were more forgiving than boys. In addition, students from the humanity stream had lower scores in responsibility taking compared to students from the science stream. Despite the reported findings, the study lacks methodological clarity. The study does not clearly describe how students' achievement was measured. Another study by Olusola and Samson (2015) reported a significant negative relationship between moral intelligence and students' perception of examination malpractice in Osun State, Nigeria. The higher the level of moral intelligence among students, the more negative their perception of examination malpractice. The same study found that there was a statistically significant difference in moral intelligence between the two genders. Male students scored higher on the moral intelligence inventory. A quasi-experimental study investigated the impact of moral intelligence components training on the social interaction skills of female junior secondary school students in Iran. (Naqashzadeh & Sabahizadeh, 2016). The moral intelligence components training program utilized researcher-made training packages. The authors reported a significant improvement in social interaction in female students.

Despite these efforts, further empirical research is required to establish a clear connection between moral intelligence and student outcomes, particularly concerning academic performance. The studies reviewed offer valuable insights into the role of moral intelligence in educational settings, yet several gaps warrant further investigation. A significant proportion of research originates from Middle Eastern contexts. This raises questions about the generalizability of findings to other cultural settings. Some of the studies lack methodological clarity, particularly in operationalizing key variables such as academic performance and student outcomes. In addition, inconsistencies in results, such as gender differences in moral competence, suggest a need for more investigation.

Methodology

Research Design

This study followed a quantitative research perspective. Quantitative research is “an approach for testing objective theories by examining the relationship among variables” (Creswell & Creswell, 2018). Quantitative research employs statistical tools to obtain results. Furthermore, this study uses a correlational design. The correlational design is nonexperimental, and it is used for relating variables and predicting outcomes. Statistical tools such as correlation coefficients, regression analysis, and significance testing were employed to analyze the data and determine the relationships between the variables in this study.

Sample

The sample comprised 123 junior and senior secondary school (grades 9-12) students in a private international school in Manado, Indonesia, during the school year 2023-2024. The researcher followed a simple random sampling method. The distribution of the respondents in the three demographic variables of gender, grade level, and religious affiliation is shown in Table 1. There were more female than male respondents. In Indonesia, as of 2018, the ratio of

female to male secondary school students was 1.03 (The Global Economy, 2020). Nearly half of the respondents (49.6%) were protestant Christians. This is consistent with the fact that Christianity is the majority religion in Manado (Dendeng & Wasida, 2022). The respondents were evenly distributed, with the lowest number being 26 from grade 9 and the highest 34 from grade 12.

Table 1
Distribution of Respondents in Demographic Variables.

Demographic Variables	<i>f</i>	%
Gender		
Male	56	45.5
Female	67	54.5
Total	123	100.0
Grade Level		
Grade 9	26	21.1
Grade 10	32	26.0
Grade 11	31	25.2
Grade 12	34	27.6
Total	123	100.0
Religious Affiliation		
Protestant	61	49.6
Catholic	22	17.9
Muslim	6	4.9
Buddhist	12	9.8
Confucian	6	4.9
SDA	16	13.0
Total	123	100.0

Instrument and Data Collection

The research instrument used was the Moral Competency Index (MCI) developed by Lennick and Kiel (2005). The MCI contains 40 questions on a 5-point Likert scale to measure respondents' moral competency. The validity and reliability of the instrument have been discussed in previous studies (Martin & Austin, 2010; Toprak & Karakus, 2018), indicating acceptable alpha levels. The Cronbach's alpha value for the current study was 0.88. The verbal interpretation of the MCI scores is shown in Table 2. Data was collected through a paper-based questionnaire. Respondents were also asked to fill in their current Grade Point Average (GPA) as a measure of their academic performance, which was issued in the official student evaluation report given to them by the school. The questionnaire was administered to the respondents with the consent and supervision of the school principals. Voluntary participation was also ensured.

Table 2
MCI Score Verbal Interpretation

Total MCI Score	Moral Competence
90 – 100	Very High
80 – 89	High
60 – 79	Moderate

Data Analysis

The data was analyzed using the Statistical Package for Social Sciences (SPSS), one of the most general software programs used in the analysis of quantitative studies. A Pearson product-moment coefficient of correlation analysis was first conducted to establish the magnitude and direction of the relationship that existed between the moral intelligence and academic performance of respondents. The Pearson product-moment correlation helped in establishing whether an increase in moral intelligence led to an increase or decrease in academic performance. Linear regression analysis was conducted to determine whether moral intelligence significantly contributed to the variation in the academic performance of the respondents. Such analysis tests if there is a significant relationship between the independent variable (moral intelligence) and the dependent variable (academic performance). An independent samples t-test was conducted to ascertain whether male and female students were significantly different in moral intelligence. Finally, ANOVA was conducted to determine how moral intelligence varied by grade level and by religious affiliation. This deeper layer of analysis thus allowed the study to check if students from different grade levels and with various religious affiliations differed in their moral intelligence.

Results and Discussion

The purpose of this study was to investigate the relationship between moral intelligence and academic performance among secondary school students. The following section presents the results of the study. The discussion of the findings from statistical analyses is based on the research questions and null hypotheses.

Moral Intelligence and Academic Performance

Table 4 shows the descriptive statistics of the respondents' moral intelligence and academic performance. The respondents had a moderate level of moral competency ($M = 72.00$). The mean grade point average (GPA) of the respondents ($M = 3.30$) falls in the high academic achievement category based on the schools' grading scale.

Table 4

Descriptive Statistics for Moral Intelligence and Academic Achievement

Variables	<i>N</i>	<i>M</i>	<i>SD</i>
Moral Competency Index (MCI)	123	72.00	8.01
Academic Performance (GPA)	123	3.30	.50

A Pearson product-moment correlation was run to determine the relationship between moral intelligence and academic performance. As shown in Table 5, there was a weak yet statistically significant positive correlation ($r = .193, p = .033$) between moral competency and academic performance. Therefore, the decision is to reject the null hypothesis in favor of the alternative. There is a significant relationship between moral intelligence and the academic performance of secondary school students. This finding is consistent with a previous study that reported a positive and significant relationship between moral intelligence and achievement in high school students (Hoseinpoor & Ranjdoost, 2013).

Table 5

Correlations Table for Moral Intelligence and Academic Performance

		Academic Performance
Moral Competency Index	Pearson Correlation	.193*
	Sig. (2-tailed)	.033

*. Correlation is significant at the 0.05 level (2-tailed).

The weak yet statistically significant positive correlation indicates that moral intelligence is one of the important determinants of academic performance. To further verify this possibility, a simple linear regression analysis was conducted. The ANOVA table (see Table 6) confirms that the regression model significantly predicts the dependent variable (academic performance), $F(1, 121) = 18.76$, $p = 0.033$, with a 95% confidence level. The p -value, 0.033, which is less than 0.05, indicates that the model is a good fit for the data. Therefore, the decision is to reject the null hypothesis in favor of the alternative. Moreover, the regression coefficients table (see Table 7) shows for every unit of increase in the moral competency index, there is a 0.012 unit of increase in academic performance.

Table 6
Linear Regression ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.151	1	1.151	4.677	.033
	Residual	29.771	121	.246		
	Total	30.922	122			

a. Dependent Variable: Academic Performance

b. Predictors: (Constant), Moral Competency Index

Table 7
Linear Regression Coefficients Table

	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	2.428	.406			5.978	.000
MCI	.012	.006	.193		2.163	.033

a. Dependent Variable: GPA

Moral Intelligence Across Gender

As can be seen in Table 8 below, female students had a mean moral competency score of 73.38 while male students had a numerically lesser mean score of 70.33. To test the null hypothesis that there is no significant difference in the respondents' moral intelligence when grouped according to gender, an independent samples t-test was performed. Levene's test for equality of variances was not significant (see Table 9). Therefore, equal variances are assumed for the two mean scores. The group means were statistically significantly different ($p = 0.035$). Thus, the null hypothesis was rejected. The moral competency index of females (73.38 ± 8.42)

was statistically significantly higher than the moral competency index of males (70.34 ± 7.23), $t(121) = 2.127, p = .035$. Generally, female students showed higher moral competency than male students. This finding is consistent with a study that reported higher moral intelligence for female students (Mahasneh, 2014). However, the finding contradicts a report that generally there is no difference in moral intelligence between the genders (Hamid, Idrus, & Saat, 2012) and another study that reported higher moral intelligence levels for male students (Olusola & Samson, 2015).

Table 8
MCI Across Gender

	<i>Gender</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>
MCI	Female	67	73.38	8.42
	Male	56	70.33	7.22

Table 9
Independent Samples t-Test for MCI Across Gender

Levene's Test for Equality of Variances		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
MC	Equal variances assumed	.854	.357	2.127	121	.035	3.0413	1.4299
I	Equal variances not assumed			2.156	120.91	.033	3.0413	1.4104

Moral Intelligence Across Grade Levels

Table 10 shows the descriptive statistics of the moral competency index across grade levels. Respondents from grade 12 ($n = 34$) have the highest mean moral competency index ($M = 75.44$, $SD = 7.49$), while respondents from grade 10 ($n = 32$) have the lowest mean moral competency index ($M = 68.11$, $SD = 7.32$). To test the hypothesis that there is no significant difference in respondents' moral intelligence when grouped by grade level, a one-way ANOVA test was performed (see Table 11). The test revealed that there was a statistically significant difference among the group means, $F(3, 119) = 7.299$, $p < .001$. Thus, the null hypothesis is rejected in favor of the alternative. There is a significant difference in the respondents' moral intelligence when grouped by grade level.

Table 10
MCI Across Grade Levels

Grade Level	<i>n</i>	<i>M</i>	<i>SD</i>
9	26	69.500	6.7720
10	32	68.109	7.3218
11	31	74.323	8.0732
12	34	75.441	7.4851
Total	123	71.996	8.0109

Table 11
One-Way ANOVA Test of MCI Across Grade Levels

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1216.724	3	405.575	7.299	.000
Within Groups	6612.524	119	55.567		
Total	7829.248	122			

Table 12
Post Hoc Multiple Comparisons

(I) Grade Level	(J) Grade Level	Mean Difference (I-J)	Std. Error	Sig.
9	10	1.3906	1.9682	.894
	11	-4.8226	1.9823	.076
	12	-5.9412*	1.9420	.014

10	9	-1.3906	1.9682	.894
	11	-6.2132*	1.8786	.007
	12	-7.3318*	1.8360	.001
11	9	4.8226	1.9823	.076
	10	6.2132*	1.8786	.007
	12	-1.1186	1.8512	.931
12	9	5.9412*	1.9420	.014
	10	7.3318*	1.8360	.001
	11	1.1186	1.8512	.931

To identify the significant difference between grade levels, post hoc multiple comparisons through the Tukey test were performed (see Table 12). The test revealed that the moral competency score of grade 12 (75.44 ± 7.49) was significantly higher than the moral competency scores of grade 9 (69.50 ± 6.77 , $p = .014$) and grade 10 (68.11 ± 7.32 , $p = .001$). Moreover, the moral competency score of grade 11 (74.32 ± 8.07) was significantly higher than the moral competency score of grade 10 (68.11 ± 7.32 , $p = .007$). There was no significant difference in moral competency scores between grades 9 and 10 ($p = .894$), between grades 9 and 11 ($p = .076$), and between grades 11 and 12 ($p = .931$).

Moral Intelligence Across Religious Affiliations

Table 13 shows the descriptive statistics of the moral competency index across the religious affiliations of the respondents. The results show that among the six different religious affiliations represented, the respondents from the Confucian background ($n = 6$) have the highest mean moral competency index ($M = 74.92$, $SD = 7.60$), while the respondents from the Buddhist background ($n = 12$) have the lowest mean moral competency index ($M = 68.29$, $SD = 9.48$). To test the hypothesis that there is no significant difference in respondents' moral intelligence when grouped by religious affiliation, a one-way ANOVA test was performed (see Table 14). The test revealed that there was no statistically significant difference among the group means, $F(5, 117) = 1.261$, $p = .286$. Thus, the null hypothesis is accepted. There is no significant difference in the respondents' moral intelligence when grouped by religious affiliation. This is consistent with the findings of Hamid, Idrus, & Saat (2012).

Table 13
MCI Across Religious Affiliations

<i>Religious Affiliation</i>	<i>n</i>	<i>Mean</i>	<i>SD</i>
Protestant	61	73.262	9.3633
Catholic	22	70.977	4.3575
Muslim	6	72.583	3.7204
Buddhist	12	68.292	9.4807
Confucian	6	74.917	7.5988
Adventist	16	70.031	5.3118
Total	123	71.996	8.0109

Table 14

One-Way ANOVA Test of Moral Competency Index Across Religious Affiliations

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	400.326	5	80.065	1.261	.286
Within Groups	7428.922	117	63.495		
Total	7829.248	122			

Conclusion and Implications

This study investigated the relationship between moral intelligence and academic performance among secondary school students in a private international school in Indonesia. There was a weak positive yet statistically significant relationship between moral intelligence and academic performance among secondary school students. Even though the effect size could be small, there was sufficient evidence to conclude that moral intelligence statistically significantly predicted academic performance. Students with high moral intelligence tend to have high academic performance, while students with low moral intelligence tend to have low academic performance. Significant differences were found in moral intelligence across genders and grade levels. Female students had higher moral intelligence than male students. Grade 12 students had higher moral intelligence than grade 9 and grade 10, while grade 11 students had higher moral intelligence than grade 10. There was no significant difference in moral intelligence between grade 9 and grade 10, between grade 9 and grade 11, as well as between grade 11 and grade 12. There was no significant difference in moral intelligence across religious affiliations. These findings suggest that, although other variables may also play a significant role, moral intelligence is an important factor that can influence students' academic performance.

The findings of this study have relevant implications for educators. The positive relationship between moral intelligence and academic performance implies that fostering moral intelligence in students could potentially enhance their academic success. Therefore, since morality is among the important predictors of success in students' academic endeavors, moral and character education must be strengthened in schools. Schools should consider providing professional development for teachers in the area of moral and character education. Empowering teachers with the necessary skills to cultivate morality in students will have a positive impact on student outcomes and the overall climate of the school.

Future research on moral intelligence should explore potential determinants of moral intelligence and academic performance. Additional factors such as family background, socioeconomic status, and peer influence should be examined. Longitudinal studies could also provide deeper insights into how moral intelligence develops over time and its long-term impact on academic and life success. A qualitative study that explores students' and teachers' perceptions of moral intelligence in relation to academic performance would also shed more light on the importance of the construct under study in the field of education.

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