SUMIKOLAH: JURNAL ILMU PENDIDIKAN

Volume 3, Number 1, February 2025 (Pages 1-10) | e-ISSN 2985-3842

Mindset and Religiosity among Elementary, Middle, and High School Graduating Students

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Article History
Submitted: 29 January 2025; Revised: 26 February 2025; Accepted: 28 February 2025

Abstract

This study examined the relationship between mindset and religiosity among graduating students from grades 6, 9, and 12 in one private international school in Indonesia. It also investigated potential differences in mindset and religiosity based on gender, grade level, and religious affiliation. Non-parametric tests were used in data analysis. Findings revealed a slightly more prevalent growth mindset and a moderate level of religiosity among the sampled students. While a weak negative correlation between religiosity and mindset is noted, it was not statistically significant. There were no significant differences in mindset and religiosity based on gender and grade level. However, there was a significant difference in religiosity based on religious affiliations, particularly between Buddhist and Christian students. Although mindset remained consistent across religious affiliations, implications suggest the need for educational approaches that consider religious and cultural contexts in fostering holistic student development.

Keywords—mindset, religiosity, fixed mindset, growth mindset

INTRODUCTION

It is important to understand the beliefs students hold about their intelligence. Implicit theories of intelligence explain the underlying beliefs individuals hold about whether their intelligence is fixed or flexible. These theories are generally categorized into entity and incremental theories, also referred to as fixed and growth mindsets, respectively (Dweck, 2006). Entity theories view intelligence as an inherent and fixed trait. The incremental theories see intelligence as a malleable quality that can be developed through effort and learning. Students' mindsets significantly influence their motivation, learning strategies, and academic performance.

There is ample research evidence that students' growth mindset has a significant correlation with positive educational outcomes. An experimental study (Yeager et al., 2019) revealed that program interventions that promote a growth mindset led to significant improvements in students' academic achievement. Research findings (Dweck & Yeager, 2019) suggest that students' mindsets determine how they respond to challenges. Students with a growth mindset embrace challenges and remain persistent in difficulties. However, those with fixed mindsets tend to avoid challenges and give up easily. Mindsets can also influence students' well-being. A meta-analysis (Sisk et al., 2018) revealed that growth mindset interventions helped students to reduce stress and anxiety.

There is a substantial body of research on implicit theories of intelligence and their impact on academic achievement (Costa & Faria, 2018; Yeager et al., 2019). There is also separate research on the relationship between intelligence and religiosity (Sickels et al., 2015). However, there is a lack of research exploring the relationship between students' implicit theories of intelligence and their religiosity. In a dissertation study on religiosity, mindset, and Math achievement among high school students, Luebke (2019) found a small statistically significant relationship between mindset and religiosity. However, the study observed that this relationship did not directly translate into academic performance. It was suggested that further studies are needed to explore the relationship between religiosity and mindset and their combined effect on academic achievement. The study also recommended investigating the correlation between mindset and religiosity among students from diverse religious backgrounds, including those from public and non-religious private schools. Another study by McCullers (2020) found that participants who were more religious reported higher growth mindset beliefs. However, the study did not find a significant relationship between religiosity and a fixed mindset. It is recommended that a continued study be conducted to determine the relationship between religiosity and mindset as well as compare different faiths and religious subgroups.

The purpose of the current study was to examine the relationship between mindsets and religiosity among elementary, middle, and high school graduating students. The results will shed light on the relationship between these variables as the literature on this area is scant. The study sought to answer the following research questions: 1) Is there a significant relationship between mindset and religiosity among students? 2) Is there a significant difference in mindset and religiosity among students based on (a) gender, (b) grade level, and (c) religious affiliation?

Fixed and Growth Mindsets

The American psychologist, Dweck (1999) was the first to conceptualize the idea of mindsets. In her research on motivation and achievement, she described mindsets as a continuum from fixed to growth. From a fixed mindset perspective, intelligence is a stable, unchangeable trait while the growth mindset sees intelligence as something that can be developed (Dweck, 1999). Individuals with a fixed mindset view failures as an indication that they are not capable of succeeding. Those with a growth mindset take challenges as opportunities for improvement. So, they strive to develop their abilities through hard work (Dweck, 2016).

Mindsets have important implications for learning. Studies suggest that students' mindsets continue to develop and even change during their academic journey. Limeri et al. (2020) conducted a study on undergraduate students to investigate how and why their mindsets change. The study found that students who persistently struggled academically shifted towards seeing intelligence as a stable trait. A fixed mindset harms students' mental health and overall well-being. Studies reported that a fixed mindset predicted more stress and anxiety compared to a growth mindset (Tao et al., 2020). On the contrary, a growth mindset is linked to several positive outcomes such as improved self-esteem, self-compassion, error-monitoring, coping skills, mental health, and motivation to change (Brummelman & Thomaes, 2017; Burnette et al., 2020; Ng, 2018; Schroder et al., 2017).

Research on the relationship between mindset and demographic variables such as gender yielded mixed results. After reviewing previous research on gender differences in academic mindset in various educational contexts, Mutua et al. (2019) noted inconsistencies in the findings. Their study among secondary students revealed gender differences in mindset with female students endorsing a fixed academic mindset more than male students. However, the study found no significant gender difference in growth mindset. Similarly, a study investigating the relationship between school climate and the growth mindset of junior middle school students found no gender difference in growth mindset (Chen et al., 2023). On the other hand, another study conducted on high school students found that female students reported marginally significantly higher levels of growth mindset than male students (Schlender et al., 2020). This indicates that the evidence on gender differences in mindsets is still inconclusive.

Religiosity

Religiosity refers to an individual's belief, practice, and adherence to a specific religion. Religiosity includes the use of sacred symbols, prayers, and rituals that promote close relations to the sacred (Obregon, et al., 2022). While religiosity and spirituality may be related terms, they represent distinct concepts. Spirituality refers to a person's quest for solutions to concerns regarding the ultimate meaning and purpose of life. It involves becoming conscious of the presence of something transcendent without necessarily being affiliated with a particular religion (Koenig, et al., 2001). Religiosity, on the other hand, can influence various aspects of life including moral judgment, relationships, and personal well-being (Villani et al., 2019).

One of the most widely accepted models of religiosity was proposed by Glock and Stark (1965) who defined five dimensions of religiosity: experiential, ritualistic, ideological, intellectual, and consequential. The experiential dimension refers to the personal experiences and emotions associated with religious beliefs. The ritualistic dimension involves participation in religious rituals and practices. The ideological dimension pertains to the acceptance of religious doctrines and teachings. The intellectual dimension refers to the knowledge and understanding of religious concepts and principles. Lastly, the consequential dimension involves the impact of religious beliefs on an individual's behavior and lifestyle (Abdel-Khalek, 2019). Stark and Glock (1968) later removed the consequential dimension from the model. They also divided the ritualistic dimension into public and private practice. Huber and Huber (2012) observed that the five dimensions by Glock and Stark were defined from a sociological perspective of religion. They proposed a similar model known as the Centrality of Religiosity Scale (CRS), which measures the general intensities of psychologically defined five core dimensions of religiosity. These dimensions include intellectual dimension, ideological dimension, public practice, private practice, and religious experience.

Religiosity plays a significant role in shaping students and their social outcomes. Research showed that more religious adolescents have better grades, miss fewer days of school, and enroll in longer years of higher education (Horwitz, 2019). For college students

from diverse ethnic backgrounds, religiosity has been associated with several favorable outcomes, such as improved academic performance, reduced alcohol use, decreased depressive symptoms, and a higher quality of life (Donohue, 2022). On the social level, studies show that religiosity among teens enhances their social capital, intergenerational relationships, friendship networks, and extracurricular participation (Glanville et al., 2008). These findings show that religiosity not only improves academic performance but also enhances students' social life.

Based on the brief review of the literature on mindsets and religiosity presented above, sufficient evidence is presented to conclude that both constructs are linked to positive academic, individual, and social outcomes for students. However, there is not much discussion in the literature about the relationship between mindsets and religiosity. Although a few researchers (Hassan, Ismail, & Nen, 2023; Luebke, 2019; McCullers, 2020) suggested a significant but weak relationship, they do not delve deeply into the topic. The nature of the relationship is not clear. It is also not known whether religiosity predicts mindsets or vice versa.

RESEARCH METHODS

Research Design

This study employed a descriptive correlational research design with comparative elements. Correlational research seeks to describe the variables and determine the extent to which they are related (Creswell, 2014). In this context, the study used a survey method to collect data from participants. The survey method is well-suited for this type of research as it enables the efficient gathering of data from a sample (Groves et al., 2009). The data collected through the survey was analyzed using statistical techniques to identify correlations between the variables.

Participants

The participants of this study consisted of students from a private international school in Indonesia, specifically selected from grades 6, 9, and 12. The sample included 45 students, 15 students from grade 6, who were in their final year of elementary school, 12 students from grade 9, who were completing middle school, and 18 students from grade 12, who were graduating from high school (see Table 1). This selection ensured a representative cross-section of the student population at different critical educational stages. The choice of the sample from graduating students from elementary, middle, and high school was purposeful. This will help to examine potential developmental and educational differences among elementary, middle, and high school students in their critical transition stages.

Table 1. Demographic Distribution of the Participants

Demographic Variables	Frequency	Percentage
Gender		
Female	24	53.3
Male	21	46.7
Total	45	100.0
Grade Level		
Grade 6	15	33.3
Grade 9	12	26.7
Grade 12	18	40.0
Total	45	100.0
Religious Affiliation		
Christianity	26	57.8
Islam	7	15.6
Buddhism	8	17.8
Confucianism	4	8.9
Total	45	100.0

Instruments

The research instruments utilized in this study were the Implicit Theory of Intelligence Survey (Dweck, 2006) and the Centrality of Religiosity Scale (Huber & Huber, 2012). These instruments were selected due to their established validity and reliability. The Implicit Theory of Intelligence Survey assesses individuals' beliefs about the malleability of intelligence. The instrument consists of 6 statements, to which respondents indicate their level of agreement on a 6-point Likert scale, from 1 (*strongly agree*) to 6 (*strongly disagree*). Items such as "You have a certain amount of intelligence, and you can't really do much to change it" and "No matter who you are, you can significantly change your intelligence level" gauge whether participants hold a fixed or growth mindset regarding intelligence, respectively. The first three items reflect a fixed mindset while the last three items reflect a growth mindset. The items on growth mindset were reverse scored. The instrument has been extensively validated and has demonstrated high reliability in numerous studies, with Cronbach's alpha coefficients ranging from 0.94 to 0.98 (Dweck, 2006).

The Centrality of Religiosity Scale (CRS) is used to measure the significance of religiosity in an individual's life. The scale includes multiple dimensions of religiosity, such as intellectual, ideological, public practice, private practice, and religious experience. Respondents answer items like "How often do you think about religious issues?" and "How often do you take part in religious services?" using a 5-point Likert scale format. A mean score of 1 up to 2 is interpreted as "not religious" while a mean score of 4 up to 5 is interpreted as "highly religious." The basic scale appears in three lengths 15, 10, and 5 items. It was modified and extended to include interreligious items. The scale used in this study is the CRSi-20, a modified version of the original 15-item version with an additional 5 interreligious items. The scale has been validated across various cultural contexts and has shown high reliability, with Cronbach's alpha values generally above 0.85 (Huber & Huber, 2012).

Data Collection

The data for this study was collected using Google Forms. Data gathering was conducted synchronously with the supervision of the researcher. Respondents were presented with an informed consent page. The informed consent page included the purpose of the study, the voluntary nature of participation, and assurances of confidentiality. The researcher ensured that all participants were fully informed about the research and their rights before proceeding. The digital data gathering allowed for quick response times and ease of data encoding. There was no barrier to participation as participants were provided with sufficient internet connection.

Data Analysis

Non-parametric tests were employed due to the small sample size of 45 participants. Non-parametric tests are particularly appropriate in this context as they do not assume a normal distribution of the data and are robust against violations of this assumption. Spearman's correlation coefficient was used to assess the relationship between mindset and religiosity. To determine whether there are significant differences in religious affiliation and grade level, the Kruskal-Wallis test was employed. This test is used to compare three or more independent groups. In this study, the researcher used this test to identify differences across grade levels (6, 9, and 12) and religious subgroups (Christianity, Islam, Buddhism, Confucianism, Hinduism, etc.) without assuming normal distribution or homogeneity of variances. The researcher used the Mann-Whitney U test to examine differences in mindset and religiosity between the two genders.

RESULTS AND DISCUSSION

The results are presented below in alignment with the research questions. The first research question was about the relationship between mindset and religiosity. The second research question was about differences in mindset and religiosity based on gender, grade level, and religious affiliation.

Descriptive Statistics: Mindset and Religiosity Scores

Table 2. Mindset and Religiosity Scores

Variables	Mean	SD
Mindset	3.90	.58
Religiosity	3.80	.48

Table 2 shows the descriptive statistics of respondents' mindset and religiosity scores. The results reveal that the mean mindset score, as assessed by the Implicit Theory of Intelligence Survey, is 3.90, suggesting a slightly more prevalent growth mindset. Similarly, the mean religiosity score of the sample, as measured by the Centrality of Religiosity Scale, is 3.80. This indicates a moderate level of religiosity within the sample. It can be stated that on average, the students exhibited a mindset that leans towards a growth perspective and a moderate religiosity. Correlation analysis is carried out to further explore the relationship between the two variables.

The Relationship Between Mindset and Religiosity

To answer the first research question regarding the relationship between mindset and religiosity, Spearman's rho correlation analysis was conducted with a .05 level of significance. The result as shown in Table 3 yielded a correlation coefficient of -.248 which was not statistically significant (*p=.100*). This finding is consistent with studies that reported a negative weak, yet not significant correlation between mindset and religiosity (Hassan, Ismail & Nen, 2023). This might suggest that other factors could influence the relationship between mindset and religiosity.

Table 3. Mindset and Religiosity Correlation Matrix

		Religiosity
Correlation Coefficient (Spearman's Rho)	**Mindset**	-.248
Sig. (2-tailed)		.100
N		45

Mindset and Religiosity Across Gender

Part of the second research question was about whether there was a gender difference in mindset and religiosity. As shown in Table 4, based on the Mann-Whitney U Test ranks, male students ranked higher than female students in both mindset (male=19.36; female=24.77) and religiosity (male=20.98; female=27.77). The Mann-Whitney U test results are shown in Table 5. For mindset, the findings indicate there is no significant difference in mindset between male and female participants (U = 175.50, p = .08). Similarly, for religiosity, the findings indicate that there is no significant difference in religiosity between male and female participants (U = 209.50, p = .33). These findings align with recent studies showing that gender differences in religiosity and mindset are complex and can be influenced by many factors (Winkel, 2019).

Table 4. Mann-Whitney U Test (Ranks)

	Gender	N	Mean Rank	Sum of Ranks
Mindset	Female	24	26.19	628.50
	Male	21	19.36	406.50
Religiosity	Female	24	24.77	594.50
	Male	21	20.98	440.50

Table 5. Mann-Whitney U Test Statistics

	Mindset	Religiosity
Mann-Whitney U	175.500	209.500
Z	-1.751	-.969
Sig. (2-tailed)	.080	.333

**Grouping Variable: Gender*

Mindset and Religiosity Across Grade Levels

The next part of the second research question was about whether there was a significant difference in mindset and religiosity across the three grade levels. As shown in Table 6, grade 12 students ranked better in mindset (18.75) and religiosity (19.50). The Kruskal-Wallis H test results are shown in Table 7. For religiosity, there was no statistically significant difference among the students from the three grade levels, $\chi 2$ (2) = 3.95, p = .139, with a mean rank of 22.30 for grade 6 students, 29.13 for grade 9 students, and 19.50 for grade 12 students. Similarly, the results show that there was no statistically significant difference among the students from the three grade levels in their mindset, $\chi 2$ (2) = 3.21, p = .201, with a mean rank of 26.20 for grade 6 students, 25.38 for grade 9 students, and 18.75 for grade 12 students. In both cases, the findings indicate that grade level does not significantly influence these two variables in the sample studied. This aligns with prior research findings that while religiosity can play a role in adolescent development, its impact may not vary significantly across different stages of secondary education (Regnerus, 2003).

Table 6. Kruskal-Wallis H Test (Ranks)

	Grade Level	N	Mean Rank
Mindset	Grade 6	15	26.20
	Grade 9	12	25.38
	Grade 12	18	18.75
Religiosity	Grade 6	15	22.30
	Grade 9	12	29.13
	Grade 12	18	19.50

Table 7. Kruskal-Wallis H Test Statistic

	Mindset	Religiosity
Kruskal-Wallis H	3.207	3.948
df	2	2
Asymp. Sig.	.201	.139

**Grouping Variable: Grade Level*

Mindset and Religiosity Across Religious Affiliations

The last part of the second research question is about whether there is a difference in religiosity and mindset across religious affiliations (Christianity, Islam, Buddhism, and Confucianism) represented by the participants. As shown in Table 8, Buddhist students

ranked better in religiosity (12.81) while Christian students ranked better in mindset (19.83). The Kruskal-Wallis H test results are shown in Table 9. The results indicate that there was no statistically significant difference among the students in their mindset based on religious affiliation, $\chi 2$ (2) = 3.803, p = .284. For religiosity, there was a statistically significant difference among the participants in their religiosity based on religious affiliation, $\chi 2$ (2) = 9.623, p = .022.

The significant variation in religiosity among different religious affiliations may reflect diverse religious teachings, practices, and cultural factors that influence how central religion is in individuals' lives. This aligns with previous research that highlights the strong influence of religious affiliation on various aspects of religiosity and spirituality (Koenig, 2001). On the other hand, the absence of significant differences in mindset suggests that implicit theories of intelligence may be relatively uniform across different religious groups. Moreover, the finding indicates that mindset may be shaped more by individual and educational factors than by religious affiliation.

Table 8. Kruskal-Wallis H Test (Ranks)

	Religious Affiliation	N	Mean Rank
Mindset	Christianity	26	19.83
	Islam	7	26.14
	Buddhism	8	28.75
	Confucianism	4	26.63
Religiosity	Christianity	26	27.87
	Islam	7	20.00
	Buddhism	8	12.81
	Confucianism	4	17.00

Table 9. Kruskal-Wallis H Test Statistic

	Mindset	Religiosity
Kruskal-Wallis H	3.803	9.623
df	3	3
Asymp. Sig.	.284	.022

**Grouping Variable: Religious Affiliation*

To determine which pairs of religious affiliations showed significant differences in participants' religiosity, a post hoc analysis was conducted. Table 10 shows the pairwise comparisons of religious affiliation. Accordingly, a significant difference occurred between Buddhism and Christianity (p = .027). The other pairs of religious affiliations did not show significant differences. The significance values have been adjusted by the Bonferroni correction for multiple tests. This finding is intriguing and suggests that there may be unique aspects of Buddhism and Christianity that influence religiosity differently.

Table 10. Pairwise Comparisons of Religious Affiliation

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.
Buddhism-Confucianism	-4.187	8.025	-.522	.602	1.000
Buddhism-Islam	7.188	6.783	1.060	.289	1.000
Buddhism-Christianity	15.053	5.299	2.841	.004	.027*
Confucianism-Islam	3.000	8.214	.365	.715	1.000
Confucianism-Christianity	10.865	7.039	1.544	.123	.736
Islam-Christianity	7.865	5.580	1.409	.159	.952

CONCLUSION

This study investigated the relationship between mindset and religiosity among grades 6, 9, and 12 graduating students. The findings revealed that the participants had a slightly more prevalent growth mindset perspective whereas their religiosity scores are at a moderate level. There was a weak negative correlation between mindset and religiosity, but the relationship was not statistically significant. No significant differences were found between the mindset and religiosity of male and female students; hence, it presents that gender is not a pivotal factor. There was no significant difference in mindset and religiosity among the students of different grade levels. Religious affiliation presented a significant factor leading to differences in religiosity. For instance, religiosity was significantly different for the students of Buddhist and Christian traditions. However, there were no significant differences in mindset across religious affiliations. These findings imply that as educators encourage a growth mindset among students, they should consider the complex relationship existing between mindset and religiosity. The significant differences in religiosity across religious affiliations suggest that moral and religious education classes should be tailored in ways that attend to the particular aspects of a given religious tradition. Understanding how religiosity varies across religious affiliations may inform the development of a culturally sensitive and inclusive educational environment.

RECOMMENDATION

This study considered a small sample, and the analysis involved non-parametric tests. Future studies can explore further the relationship between mindset and religiosity with a larger sample and more robust parametric tests. Given the weak correlation between religiosity and mindset reported in this study, further research should explore additional factors that might influence these constructs, such as cultural, social, or educational influences. It would be helpful to conduct longitudinal studies to observe changes in religiosity and mindset over time, particularly through different educational stages. Future research can investigate how specific religious teachings and practices within different affiliations impact religiosity and mindset development. Educators should develop educational programs that promote a growth mindset irrespective of students' religiosity to ensure all students benefit from mindset-enhancing strategies.

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