

## The Contribution of Self-Regulated Learning, Self-Awareness, and Spiritual Intelligence to Academic Achievement

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**Abstract.** This research was prompted by the low academic achievement of students to determine the contribution of self-regulated learning, self-awareness, and spiritual intelligence using an *ex post facto* quantitative method. The population comprised 170 students from Vocational High School Muhammadiyah X in Yogyakarta City, with 81 selected using cluster random sampling. Data were systematically collected through the utilization of instruments designed to assess self-regulated learning, self-awareness, and spiritual intelligence. Additionally, academic achievement data were acquired from Semester Final Examination scores. The results showed that self-regulated learning, self-awareness, and spiritual intelligence made a highly significant contribution to academic achievement. Moreover, the combined influence of self-regulated learning, self-awareness, and spiritual intelligence also significantly contributed to the variable.

**Keywords:** academic achievement, self-awareness, self-regulated learning, spiritual intelligence

## Kontribusi *Self-Regulated Learning*, Kesadaran Diri, dan Kecerdasan Spiritual terhadap Prestasi Belajar

**Abstrak.** Penelitian dilatarbelakangi rendahnya prestasi belajar peserta didik. Tujuan penelitian ini adalah untuk mengetahui kontribusi *self-regulated learning*, kesadaran diri, dan kecerdasan spiritual terhadap prestasi belajar. Penelitian ini berbentuk *ex post facto*, menggunakan metode kuantitatif. Populasi penelitian ini 170 peserta didik SMK Muhammadiyah X Kota Yogyakarta, terpilih 81 peserta didik dengan teknik cluster random sampling. Data diperoleh menggunakan instrumen, skala *self-regulated learning*, kesadaran diri, dan kecerdasan spiritual serta data prestasi belajar menggunakan nilai Ujian Akhir Semester. Hasil penelitian terbukti secara empiris, secara bersama-sama *self-regulated learning*, kesadaran diri, dan kecerdasan spiritual berkontribusi yang sangat signifikan terhadap prestasi belajar. Masing-masing atribut psikologis *self-regulated learning* berkontribusi yang sangat signifikan terhadap prestasi belajar, kesadaran diri berkontribusi yang sangat signifikan terhadap prestasi belajar, dan *self-regulated learning*, kesadaran diri, dan kecerdasan spiritual juga berkontribusi yang sangat signifikan terhadap prestasi belajar.

**Kata Kunci:** kecerdasan spiritual, kesadaran diri, prestasi belajar, *self-regulated learning*

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The low and declining academic achievement of students is a serious concern for many parties in Indonesia. This issue was reported by Jejen Musfah, the Deputy Secretary-General of the Grand Management of the Indonesian Teachers' Union, where online and distance learning (PJJ) led to a decline in students' academic achievements according to research from the Ministry of Education and Culture and Research and Technology (Kemendikbudristek) (Luxiana, 2021). This explanation is also supported by Mustafa (2021), where class teachers reported a decrease in students' academic achievements during online learning. This is also consistent with Syafa'ati et al. (2021), where monitoring academic achievements is challenging during remote learning. Before the pandemic, low academic achievement was identified in students. Wali et al. (2020) suggested instances of students, with a failure to meet the minimum passing criteria (KKM) reaching 76% in class A at School X.

This is reinforced by findings showing that a significant number of students performed inaccurately and incorrectly on daily quizzes, resulting in many students failing in traditional learning and not meeting the KKM or below 75 (Wali et al., 2020). Putrie (2021) also supported these findings, stating that 7 out of 11 observed students scored below 75 in subject X, showing an inability to meet KKM in the subject.

The high percentage of students unable to meet KKM has an impact on learning, contributing to low quality of education.

Boymau and Hasyda (2022) explained that the education level in Indonesia is considered low compared to other countries. In 2018, the country ranked 72nd out of 78 in terms of educational quality. This data is supported by Yuzarion (2022), who measured trends in the international mathematics and science study, showing that the mathematical abilities of students ranked 34th out of 38 countries measured. Another issue is the low academic achievement in Senior High School X Malang Raya. Among the 412 students, only 6.28% achieved high scores (8.6 to 100), while 66.52% and 27.20% fell into the medium and low categories (Yuzarion, 2022).

Based on the issues, interviews were conducted on June 14, 2022, with class XI teachers at Vocational High School Muhammadiyah X. Data were obtained from 39 students in class XI, where 24 at 61.54% scored below the KKM of 75. Observations further supported these findings, with data obtained from the interviewed class XI students showing that 31 or 79.49% had not maximized the potential for self-regulation in learning. This was evident during the interviews since there were no clear objectives, viewing learning activities as school routines. The students also admitted to struggling with self-control during study sessions, easily succumbing to distractions such as talking and using WhatsApp. This is related to low learning motivation and a lack of prepared strategies among the students. The data is supported by the admission that a

majority of students do not evaluate learning activities. These phenomena are closely related to internal factors, as indicated by the presence of students with low self-awareness and weak spiritual intelligence. These two variables contribute to the scores falling below the school's set KKM of 75.

The low academic achievement and education quality are indeed a cause for deep concern for all parties, including the research team influenced by various internal and external factors. 1) Internal factors are physiological and psychological aspects, including the sensory and physical health of students during the learning process. This can affect learning processes, such as the ability to concentrate and absorb information. Psychological factors are intelligence, attitude toward learning, self-esteem, talent or ability potential, learning interest, learning motivation, self-regulated learning, self-awareness, and spiritual intelligence. 2) External factors comprise social and non-social environments. The social environment includes family, friends, school/university, and community, all of which can influence students to achieve high academic achievement. Non-social environmental factors are the condition or location of the school/university building where students learn, the home learning environment, necessary tools, resources, and facilities provided to assist in the learning processes (Syah, 2016).

This research focuses on internal factors that influence academic achievement by

incorporating three psychological attributes with variables, namely (1) self-regulated learning, (2) self-awareness, and (3) spiritual intelligence. The selection of the three psychological attributes is based on Albert Bandura's social cognitive theory, where the triadic reciprocity model was proposed as a three-point square. The top point, bottom left, and bottom right of the triangle are shown as B (behavior), P (personal/Person), and E (environment), each connected by two-way arrows (Bandura, 1986). In this research, the triadic reciprocity model was elaborated from a two-way to a one-way model within diverse psychological domains, all equivalent to point B (behavior). These domains included self-regulated learning, self-awareness, and spiritual intelligence, with academic achievement as the dependent variable. In this research, academic achievement is considered a personal factor focusing on knowledge, attitudes, and skills acquired by students in the form of grades. This variable is influenced by (1) self-regulated learning, (2) self-awareness, and (3) spiritual intelligence as behavioral factors. Previous research has extensively stated the contributions of self-regulated learning, self-awareness, and spiritual intelligence to academic achievement in total and partial aspects.

Firstly, academic achievement is influenced by self-regulated learning, showing a direct contribution. Empirical research by Yuzarion (2017) explained the direct

contribution of the variable to academic achievement. Self-regulated learning is crucial and beneficial when applied in schools because students can learn effectively with strategies and possess optimal learning goals (Indrayani et al, 2021; Yuzarion et al, 2020). Individuals with insufficient self-regulated learning tend to have less control and evaluation over learning activities (Carvalho et al., 2022; Saraswati, 2017). This variable is the ability to organize and direct oneself in learning, and the processes include setting learning goals, self-control, seeking assistance, self-motivation, learning strategies, and self-evaluation after completing the study (Yuzarion, 2022). The aspects are derived from Yuzarion (2022) framework, comprising (1) setting learning goals, (2) self-control, (3) seeking assistance, (4) motivation, (5) strategies, and (6) self-evaluation.

Self-regulated learning is the conscious effort to organize and direct students in learning (Yuzarion, 2022). Zumbunn et al. (2015) stated that the process assisted students in managing thoughts, behaviors, and emotions to successfully direct learning experiences. Zimmerman (2002) explained that self-regulated learning turns students into active participants motivationally, metacognitively, and behaviorally in learning. Based on this description, self-regulated learning refers to the conscious efforts to organize and direct students in setting learning objectives, exercising self-control, seeking assistance when facing challenges and difficulties, self-motivating,

creating strategies, and self-evaluating after the completion of a lesson. This aspect was measured using a learning scale, where higher and lower scores show increased and decreased levels of self-regulated learning, respectively.

Secondly, academic achievement can also be influenced by self-awareness. Empirically, this is evident in Rini et al. (2017) research, stating a positive and significant relationship between the variables. Jauhar et al. (2022) concluded that there was a significant relationship between self-awareness and students' study discipline, with the subjects being fifth-grade elementary school students. In line with these findings, Anwar and Mardiana (2022) research, using the psychological attribute of study discipline, also showed a relationship with academic achievement. The attribute is considered equivalent and can represent the variable of self-awareness. Anwar and Mardiana (2022) explained a relationship between study discipline and mathematics learning outcomes, and Bardach et al. (2023) stated the connection between self-regulation and academic achievement.

According to Goleman (1998/2001), there are three aspects of self-awareness, including (1) Emotional, (2) Accurate, and (3) Self-confidence. This refers to an individual's capacity to acknowledge emotions in a given moment and use the awareness to inform decision-making. The process includes establishing realistic benchmarks for individual

abilities and cultivating a strong sense of self-confidence (Goleman, 1998/2001). Other experts also defined self-awareness as the ability to recognize strengths and weaknesses, appreciate oneself despite shortcomings, and actualize personal potential in workplace and society (Stein & Book, 2000/2002). Based on this description, self-awareness includes an individual's proficiency in identifying current emotional state and leveraging the understanding to inform decision-making process. The three aspects are emotional self-awareness (recognizing emotions), accurate self-assessment (being aware of strengths and limitations), and self-confidence (having self-confidence in accomplishing tasks). This aspect was measured using a self-awareness scale, where higher and lower scores indicate increased and decreased levels of the variable, respectively.

Thirdly, academic achievement is also influenced by spiritual intelligence. Empirical evidence by Saputra and Barikah (2021) showed a significant relationship between the variables. Sriwaty S et al. (2021) explained that spiritual intelligence played a highly significant role in academic achievement. The results of Khamid and Fatoni (2021) also showed the relationship between emotional and spiritual intelligence, as well as students' academic achievement. These findings are supported by Peng and Tullis (2020), that from the perspective of theories, intelligence in humans influences learning choices and academic achievement.

Asrun et al. (2020) stated that individuals lacking good spiritual intelligence might experience difficulties in self-control, self-awareness, and self-motivation. According to Agustian (2008), spiritual intelligence has five aspects, consisting of (1) *Shiddiq*, (2) *Istiqomah*, (3) *Fathanah*, (4) *Amanah*, and (5) *Tablig*. This variable is the ability to give spiritual meaning to thoughts, behaviors, and activities, as well as synergize Intelligence Quotient (IQ), Emotional Quotient (EQ), and Spiritual Quotient (SQ), comprehensively (Agustian, 2008). Zohar and Marshall (2000/2001) conceptualized spiritual intelligence as the ability to address problems related to meaning and value, including the intelligence required to situate behavior and life within a broader and more profound context. This form includes the recognition that certain actions or lifestyles hold greater meaning than others. Spiritual intelligence serves as the foundational element necessary for the effective functioning of IQ and EQ.

Based on the above description, the ability enables individuals to determine meaning, values, morals, and principles solely to Allah SWT. Therefore, individuals can be placed to live more positively with wisdom, peace, and happiness. Spiritual intelligence has five aspects consisting of *shiddiq*, *istiqomah*, *fathanah*, *amanah*, and *tablig*. Spiritual intelligence is measured using a scale, where higher and lower scores indicate increased and decreased levels, respectively.

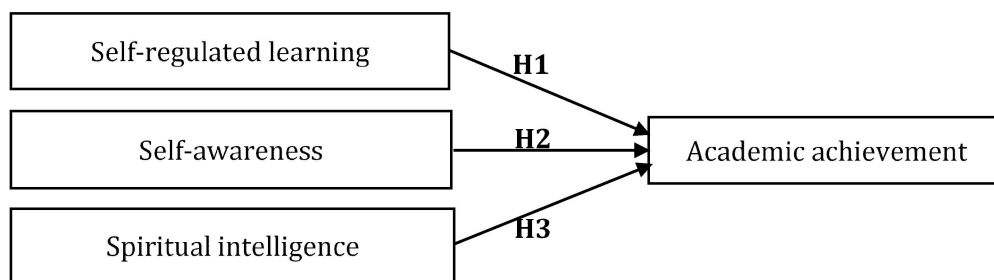
Fourthly, academic achievement as the primary psychological attribute is the quality of learning outcomes or the level of mastery of students, including aspects of knowledge, attitudes, and motor skills (Yuzarion, 2022). In this research, the variable refers to the quality of learning outcomes obtained within a specific timeframe during school activities. The academic achievement under consideration pertains to the final semester examination grades for 11th-grade students, specifically in the subjects of Mathematics, Indonesian Language,

and English. These three subjects were selected as part of the curriculum in all majors in equivalent high schools according to the National Assessment (AS). The results obtained are in the form of interval data from students' academic achievements (Yuzarion, 2022).

Based on the contributions of self-regulated learning, self-awareness, and spiritual intelligence to academic achievement, a theoretical framework can be created, as shown in the following figure.

**Figure 1**

*Theoretical Framework of The Contributions of Self-Regulated Learning, Self-Awareness, and Spiritual Intelligence to Academic Achievement*



This research formulates the theoretical framework of self-regulated learning, self-awareness, and spiritual intelligence for academic achievement. Based on the objectives, the hypotheses are formulated as follows; (1) Major Hypothesis: There is a contribution of self-regulated learning, self-awareness, and spiritual intelligence to academic achievement. (2) Minor Hypotheses; (a) There is a positive contribution of self-regulated learning to academic achievement. (b) There is a positive contribution of self-awareness to academic

achievement. (c) There is a positive contribution of spiritual intelligence to academic achievement.

In this research domain, the focus is on the contribution of self-regulated learning, self-awareness, and spiritual intelligence to the academic achievement of students. The development of a learning program that combines self-regulated learning techniques with self-awareness and spiritual intelligence has proven to significantly improve academic achievement.

## Method

### Participants

This research was conducted at Vocational High School Muhammadiyah X in Yogyakarta City using a quantitative method. The population consisted of 170 students, distributed across 8 classes, namely XI A, B, C, D, E, F, & G. Furthermore, a total of four classes, XI A, D, E, F, were selected with a sample size of 81 students obtained using cluster random sampling.

### Measurement tools

Cronbach's alpha was used to test the internal consistency of the measurement tools. Content validity was used to analyze the validity of the measurement tools through rational analysis testing with professional judgment to determine when the items could cover the entire content area of the object. Furthermore, this variable used Gregory model (2011), including three professional judgments. Expert examiners were requested from Prof. Adi Atmoko [Educational Psychology], Prof. Firman [Methodology], and Dr. Rezki Hariko [Language]. The three professionals were asked to assess the representativeness of the instrument's items. The results were used to determine the level of the content validity coefficient of the measurement tools. The validity coefficients for self-regulated learning, self-awareness, and spiritual intelligence scales were  $.96 > .80$ ,  $.93 > .80$ , and  $.98 > .80$ , respectively. The measurement tools were valid

based on content validity, and the instruments proceeded to the testing phase of the scale, as explained in the following section.

### Research scales

The first is self-regulated learning scale, which is a conscious effort to organize and direct students in learning. The aspects consist of (1) setting learning goals, (2) self-control, (3) seeking assistance, (4) motivation, (5) strategies, and (6) self-evaluation (Yuzarion, 2022). Examples of the items include "I make an effort to focus my attention while studying," "I haven't tried to get a good grade in learning," and "I only study during exams to improve my grades." The results of the item validity test analysis obtained a Cronbach's alpha coefficient of .929, with corrected item-total correlation values ranging from .350 to .668. Therefore, the self-regulated learning scale is valid and reliable for use in this research.

The second is the self-awareness scale, designed to assess an individual's capacity to recognize current emotional state and use the awareness for decision-making process. The aspects include (1) emotional self-awareness (recognizing one's own emotions), (2) accurate self-assessment (being aware of one's strengths and limitations), and (3) self-confidence (having self-confidence and the ability to accomplish tasks) (Goleman, 1998/2001). Example items for self-awareness include "I am happy when my friend is happy," "I can control my mood at school," and "I often get angry for

no reason.” The results of the validity test analysis obtained a Cronbach’s alpha coefficient of .814, with corrected item-total correlation values ranging from .403 to .723. Therefore, the self-awareness scale is valid and reliable for use in this research.

The third is the spiritual intelligence scale, which enables individuals to be aware of determining meaning, values, morals, and principles only to Allah SWT. The aspects of the variable include (1) *Shiddiq*, (2) *Istiqomah*, (3) *Fathanah*, (4) *Amanah*, and (5) *Tablig* (Agustian, 2008). Example items for spiritual intelligence include: “I show patience when facing difficulties,” “I break promises that I have made,” and “I am grateful for what I have now.” The results of the validity test analysis yielded a Cronbach’s alpha coefficient of .816, with corrected item-total correlation values ranging from .422 to .798. Therefore, the spiritual intelligence scale is valid and reliable for use in this research.

Each item has four alternative answer options, namely very appropriate, appropriate, not appropriate, and not at all appropriate. Likert scaling is used in all three research scales, including self-regulated learning, self-

awareness, and spiritual intelligence scales. The favorable response starts from the answer very appropriate (VA), appropriate (A), not appropriate (NA), and not at all appropriate (NAA) with a score of 4, 3, 2, and 1, respectively. Meanwhile, for unfavorable answers, NAA, NA, A, and VA are given a score of 4, 3, 2, and 1. Academic achievement was measured using Semester Final Examination scores for the even semester of 2021/2022 in the subjects of mathematics, Indonesian language, and English. The research data analysis used multiple regression analysis techniques.

## Results

This research examined the contribution of self-regulated learning, self-awareness, and spiritual intelligence to academic achievement. Meanwhile, regression analysis was used to test the major hypotheses proposed. Table 1 shows a very significant correlation between psychological attributes of the variables, contributing significantly to academic achievement, with an obtained value of R at .429, F at 5.232, and  $p=.002$  ( $p<.01$ ).

**Table 1**

*Multiple Regression Analysis Test*

Psychological Attributes	$R^2$	$p$
<i>Self-regulated learning, Self-awareness, and Spiritual intelligence</i>	.169	.002*

Note. Hypothesis accepted

\* $p < .01$

Considering Table 1, the major hypothesis can be accepted, showing a very significant

contribution of self-regulated learning, self-awareness, and spiritual intelligence to academic



achievement with a total of 16.90%. Therefore, high levels of self-regulated learning, self-

awareness, and spiritual intelligence in students contribute to better academic achievement.

**Table 2**

*Partial t-Test Analysis*

Psychological Attributes	B	t	p
Self-regulated learning on academic achievement	.288	2.397	.000*
Self-awareness of academic achievement	.221	2.245	.000*
Spiritual intelligence on academic achievement	.204	.587	.000*

Note. \*p < .01

The three minor hypotheses are accepted as follows: (a) self-regulated learning significantly and positively contributes to academic achievement, with a partial correlation of .288 and a significance level of .000 ( $p < .05$ ), (b) self-awareness significantly and positively contributes to academic achievement, with a partial correlation of .221 and a significance level of .000 ( $p < .01$ ), (c) spiritual intelligence significantly and positively contributes to academic achievement, with a partial correlation of .204 and a significance level of .000 ( $p < .01$ ). Each psychological attribute of self-regulated learning, self-awareness, and spiritual intelligence contributes 9.55%, 2.52%, and 4.83% to academic achievement, respectively.

**Discussion**

The empirical results show that self-regulated learning, self-awareness, and spiritual intelligence contribute significantly to academic achievement. Musa et al. (2023) reported positive correlations between emotional intelligence and student learning outcomes, spiritual intelligence and learning

outcomes, as well as positive correlations between emotional intelligence, spiritual intelligence, and student learning outcomes. Simultaneously, the three psychological attributes of self-regulated learning, self-awareness, and spiritual intelligence contribute 16.90% to academic achievement, with each attribute at 9.55%, 2.54%, and 4.83%, respectively.

This analysis confirms previous research, such as Yuzarion (2015), who explained the theoretical model of the direct influence of self-regulated learning on academic achievement and received empirical support, with a contribution magnitude of 35.00%. Positive and significant self-regulated learning is formed by good abilities in setting objectives, self-control in learning, seeking assistance, motivation, the use of strategies, and self-evaluation abilities according to Yuzarion (2015; 2022).

The results are supported by Feliarosa and Simanjuntak (2021) and Boncquet et al. (2023), explained that there is a significant positive contribution between self-regulated learning and academic achievement. The higher

the level of self-regulated learning, the better the academic achievement. This research also obtained data explaining the contribution of psychological dynamics, where aspects of setting learning objectives and motivation have the strongest contribution to self-regulated learning. Meanwhile, aspects of self-control, seeking assistance, strategies, and self-evaluation have a strong contribution to self-regulated learning according to Yuzarion (2015) research.

This is also consistent with Sukmawansyah et al. (2019) and Tauber et al. (2022), where there is a positive contribution between self-regulated learning and academic achievement. Positive self-awareness significantly contributes to academic achievement, reinforcing previous research as explained earlier.

The results also confirm previous research on the significant positive contribution of self-awareness to academic achievement. Nurmayasari (2019) stated a significant positive contribution of the variable to students' academic achievement. The higher the self-awareness, the better the academic achievement. This is also in line with Fauziah (2020), where there is a positive and significant contribution between the variables. Within the attribute of self-awareness, data were collected to show the impact of psychological dynamics. The aspect of self-confidence, characterized by having confidence and a belief is the most influential contributor. Additionally, emotional

self-awareness, showing the recognition of emotions and accurate self-assessment reported substantial contributions to the construct of self-awareness.

The results also confirm previous research on the significant contribution of spiritual intelligence to academic achievement. Ashshidieqy (2018) reported a significant positive contribution of spiritual intelligence to academic achievement. The higher the spiritual intelligence, the higher the academic achievement of the students. This is also consistent with Efendi (2019), that there is a positive contribution between the variables. In this research, data were also obtained explaining psychological dynamics, with the aspect of *shiddiq* and *amanah* having the strongest contribution to spiritual intelligence, while *istiqamah*, *fathanah*, and *tablig* have sufficiently strong contributions to spiritual intelligence.

The research also explored the contribution of the three psychological attributes of self-regulated learning, self-awareness, and spiritual intelligence. Aspects such as setting objectives, motivation, self-confidence, *shiddiq* and *amanah* are the main elements of each psychological attribute that most dominantly contribute to academic achievement. These findings are supported by Boncquet et al. (2023), Musa et al. (2023), and Tauber et al. (2023).

According to the findings, the most influential factors contributing to academic

achievement are the aspects of setting objectives and motivation within the psychological attributes of self-regulated learning. These aspects are the strongest determinants, playing a dominant role in influencing academic performance. Therefore, the results are consistent with the outcomes anticipated in the initial research conducted. Aspects such as self-control, seeking assistance, learning strategies, and self-evaluation in psychological attributes of self-regulated learning, aspects of emotional self-awareness, accurate self-assessment, *istiqamah*, *fathanah* and *tablig* attributes, and spiritual intelligence contribute less than aspects of setting learning objectives, motivation, self-confidence, *shiddiq* and *amanah*.

Considering the categorical analysis with a percentage of the three levels formulated, the psychological attributes of self-regulated learning, self-awareness, and spiritual intelligence are in the medium category, while academic achievement is in the high category. Therefore, the three psychological attributes of self-regulated learning, self-awareness, and spiritual intelligence have contributed very well to improving academic achievement. Maximizing the three attributes of self-regulated learning, self-awareness, and spiritual intelligence strengthens the success and learning outcomes to be obtained. These findings strongly support previous research (Ashshidieqy, 2018; Efendi, 2019; Fauziah, 2020; Nurmayasari, 2019; Sukmawansyah et al., 2019; Yuzarion, 2015; 2017).

The results reinforce the psychological attributes of self-regulated learning, self-awareness, and spiritual intelligence in significantly influencing academic achievement. The cumulative contribution of three domains or aspects amounted to 16.90%. Since students enhance skills in self-regulated learning, self-awareness, and spiritual intelligence, there is a corresponding improvement in academic achievement. Therefore, strengthening and developing these aspects can be an effective strategy to improve the quality of learning (Anwar & Mardiana, 2022; Finn, 2020).

Further analysis shows that self-regulated learning is directly proportional to academic achievement, which has important implications in the field of education. Self-regulated learning refers to an individual's ability to manage and organize learning process. Previous research has shown a positive relationship between self-regulated learning and high academic achievement (Boekaerts & Corno, 2005; Pelikan et al., 2023; Pintrich, 2000; Zimmerman, 2002).

Consistent with previous results, this research shows that an increased contribution of self-awareness corresponds to elevated academic achievement, suggesting significant implications for education. Self-awareness includes a profound understanding of emotions, strengths, weaknesses, and reactions to different situations. This shows the important role of self-awareness, particularly in self-understanding to enhance

academic performance, as stated by Brackett et al. (2011), Dweck (2006), and Schraw et al. (2006). Individuals who are aware of themselves tend to be better at facing challenges and managing emotions to support improved academic achievement.

The findings, regarding spiritual intelligence contributing significantly to academic achievement, also have interesting implications in the world of education. This variable includes a profound comprehension of life's purpose, values, the meaning of existence, and a sense of connectedness to elements greater than oneself. This is in line with Emmons (2000), King and DeCicco (2009), and Miller and Thoresen (2003), which explored the positive impact of spiritual intelligence on different aspects of life, including academic achievement. Previous research identified a link between a deeper understanding of self, meaning of life, values, and adaptability in the learning environment with better academic achievement.

This research has limitations, firstly, the collection of trial data online coincided with school holidays, resulting in the trial sample not meeting the initially planned target. Secondly, during the offline data collection, some respondents showed less enthusiasm. This was evident in instances where respondents completed the survey hastily without reading the items in the measuring instrument. Therefore, the two limitations are expected to be information for future research.

## Conclusions

In conclusion, there was a very significant contribution of self-regulated learning, self-awareness, and spiritual intelligence to academic achievement and the total contribution of the three attributes was 16.90%. Therefore, self-regulated learning, self-awareness, and high spiritual intelligence of students were directly proportional to academic achievement. Self-regulated learning, Self-awareness, and Spiritual intelligence had very significant positive effects on academic achievement, and the partial correlation value was .288, .221, and .204 with a level of .000 ( $p < .05$ ), .000 ( $p < .01$ ), and .000 ( $p < .01$ ), respectively. Each psychological attribute of self-regulated learning, self-awareness, and spiritual intelligence contributed 9.55%, 2.52%, and 4.83% to academic achievement.

## Suggestion

Future analysis is expected to examine external factors such as parents' and teachers' attitudes towards children in learning which have a greater contribution to academic achievement. This research is subject to limitations in the conducted data collection, specifically the absence of mapping concerning academic achievement. Consequently, the obtained data lacks diversity, limiting the capacity to contribute substantially to enriching the results. The same research recommendations can be carried out at the elementary, junior high, and senior high schools as well as

university levels. A follow-up to this analysis suggests a comprehensive intervention approach, incorporating strategies from all three aspects into the school curriculum. Therefore, the results show consistent improvements in academic achievement across a range of subjects.

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