



## **Introduction**

The purpose of selecting new students is to select students who are ready and have the potential to do academic assignments. Through the process of selecting new students, information will be obtained about factors that affect student academic performance (Thiele et al., 2016). Researchers and educational practitioners pay attention to initial competence and about the potential of new students in order to predict academic success. As a result, curriculum and learning material can be developed to improve students' academic performance (O'Connor & Paunonen, 2007).

Until now, it is still rare to find research on initial information about the potential of Islamic school students in Indonesia. Theoretically, the facts show that cognitive potential is very important for student academic performance (Komarraju et al., 2013). In addition, cognitive ability can be a predictor of student academic achievement (Veas et al., 2015). According to Barreiro (2014) cognitive ability is a very significant predictor of student academic performance. Bazelais et al., 2016 show that students' cognitive abilities are very significant predictors for academic performance and academic success. Likewise, Brandt et al., 2019 state that cognitive ability is a predictive variable in mathematics learning achievement.

Previous studies have shown that students' cognitive abilities are significant predictive variables that influence their academic performance (Rajalaxmi et al., 2019). Pedaste et al., 2015 assume that cognitive abilities are related to intrinsic motivation and are able to predict students' academic performance. According to Mandelman et al., 2016, tests of cognitive ability such as analytical, practical, and creative cognitive abilities are able to predict the academic achievements of students. Similarly, according to Demetriou et al., 2020, cognitive abilities such as mathematical, causal, spatial, and social reasoning become predictive variables that are very significant in school performance, especially mathematics, science, and language. This finding correlates with previous research which shows that cognitive abilities such as inductive, deductive, quantitative, causal, and spatial skills are predictors of school performance in mathematics, science, and language (Demetriou et al., 2019). In addition, Chong & Yeo (2016) claim that cognitive abilities such as critical thinking, creative thinking, and metacognition significantly predict academic performance.

Many researchers measure cognitive abilities with the SAT. Cognitive abilities such as those measured on standardised tests like the SAT have a high predictive validity for academic achievement (Sulphey et al., 2018), Duckworth et al., 2019 also found the SAT to be a predictor of student academic achievement. In addition, Ana-

zia, 2019 found that the Quantitative Aptitude Test and the Verbal Aptitude Test are very significant predictors for academic performance in secondary school students.

There is little research, if any, on the potential cognitive abilities and personality among students of religious program of Islamic schools in Indonesia such as Muhid et al., 2020. Therefore, we need empirical data to demonstrate whether the SAT is able to predict academic achievement specifically for Islamic school students in Indonesia. This article aims to describe the findings of empirical studies on the four subtests of the SAT, namely whether the verbal, numerical, analytical, and spatial tests both together and individually function as predictive variables that relate to the academic achievement of Islamic school students in Indonesia, particularly in Islamic Studies, Arabic, English, science, and mathematics.

## **Methodology of Research**

### **General Background of Research**

This research used a quantitative approach with a correlation causality design. The survey method was used to collect data by distributing instruments to participants.

Quota sampling was used to select participants, who were 9609 research subjects from Islamic school students around Indonesia, 4492 state Islamic School students and 5117 private Islamic school students.

### **Instrument**

This study used scores on five of the subjects in the Islamic school: Islamic Studies, Arabic, English, science, and mathematics. The academic / learning achievement test was developed by the national team for question compilation from the Ministry of Religious Affairs of Indonesia (MORA) assessment team. Whereas, to measure SAT the MORA's Scholastic Aptitude Test (MORA-SAT) which consisted of four subtests- verbal, numerical, analytical, and spatial was used .

### **Data Analysis**

Multiple linear regression was used to analyze the data. The stepwise technique was used to analyze the relationship between each sub-test of the SAT and the academic achievement of the Islamic school students. The data was analysed using IBM SPSS Version 25. Data analysis results consist of multiple correlation coefficients ( $r$ ), coefficients of determination ( $r^2$ ), F-ratios ( $F$ ), p-values ( $P$ ), Subtest coefficients ( $B$ ) and t-values ( $T$ ).







Moreover, this study confirms that among the four SAT subtests, the analytical sub-test is the most significant predictor of Islamic school student academic achievement. Empirical analytical reasoning subtests have a very strong relation with student academic achievement. The finding of this study is in line with the research conducted by Rani, 2017 which assumes that there is a significant relationship between reasoning ability and academic achievement of secondary school students. Williamson III & Anderson, 2019 explain that reasoning ability is a predictor of student academic success. Reasoning ability is a problem-solving analysis capability that is very important in academic success (Barlow-Jones & van der Westhuizen, 2017). Research by Wang et al., 2020 also supports the results of this study that reasoning ability is the main predictor of student academic achievement.

Analytical reasoning ability has a significant relationship with academic achievement in all subjects such as Islamic Studies, English, mathematics and science. Abbasi & Izadpanah, 2018 also found that reasoning ability is a significant predictor of academic achievement in English. Similarly, Maiti, 2017, Schaap and Luwes, 2013, showed that reasoning ability relates to achievement in mathematics. Septia et al., 2019 showed that reasoning ability is related to mathematical ability, while Payadnya, 2019 showed that reasoning ability is related to mathematical problem-solving abilities. Dumas & Schmidt, 2015 found that reasoning ability is a predictor of academic achievement in science.

The verbal subtest was found to have a significant relationship with Arabic and English. Verbal test results are significant predictors of first-year academic achievement (Heeren et al., 2020). Similarly, Van Eeden et al., 2001, found that the verbal test is the best psychometric predictor of academic achievement. According to Aksamovic et al., 2019, verbal ability is significantly related to student academic achievement. Moreover, Farran et al., 2016 argue that verbal ability is a predictor of Arabic and English language abilities. Meanwhile, according to Ogunyemi et al., 2018, verbal ability is a significant predictor of students' language competence. In the same way, Andrew et al., 2005 found that verbal ability is a significant predictor of language ability which is related to effectiveness in language learning.

Numerical subtests are empirically effective predictors of academic achievement in science and mathematics subjects. This finding is in accordance with Aderogba & Olatoye, 2011 who show that numerical ability in an aptitude test is a predictor of achievement in science subjects. Similarly, Badru (2016) states that numerical ability is a determinant factor in the mathematics achievement of high school students. Again, Memisevic et al., 2018 confirms that numerical ability is a predictor of mathematical achievement. In addition, the numerical test is a predictor





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