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# The impact of the visual, auditory, and kinesthetic model on motivation and learning outcomes of Islamic Elementary School students

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## Abstract

Motivation is crucial in guiding student behavior and engagement during the learning process. Therefore, it is essential to improve motivation by implementing a customized learning model that addresses individual needs and learning styles. This study aims to investigate the influence of the visual, auditory, and kinesthetic (VAK) learning model on students' motivation and academic achievement at Salafiyah Madrasah Ibtidaiyah, Cirebon City. A one-group pretest-posttest research design was used. Data were collected through questionnaires and tests. The data were analyzed using descriptive statistics, N-gains, t-tests, and simple linear regression. The results indicate that 59.76% of the students agreed or strongly agreed with the implementation of the VAK model, while 17.51% disagreed or strongly disagreed, and 22.70% were undecided. The implementation of the VAK model significantly improved learners' motivation and engagement in the educational process, as evidenced by a mean score of 79% on the questionnaire. Post-test results showed a significant increase in student learning outcomes, with an average score of 79.1 in the post-test compared to 60.7 in the pre-test. The coefficient of determination test results demonstrated a 47.5% increase, while the average N-gain value revealed a medium-level improvement of 0.4351. These findings provide useful insights for educators and researchers seeking to increase student motivation and achievement by designing VAK models that provide effective and engaging learning experiences.

***Keywords: visual, auditory, and kinestetic model, VAK model, learning model***

## INTRODUCTION

The Islamaic Elementary School (Madrasah Ibtidaiyah) curriculum differs from typical elementary schools through the inclusion of specific subjects such as Aqidah, Islamic Cultural History (SKI), Al-Qur'an Hadiths, and Fiqh. Fiqh, a fundamental aspect of Islamic Education, covers the practical aspects of Islam, including rites and legalities. Although crucial, the absence of effective teaching models has led to multiple educational challenges. Teachers frequently encounter difficulties when attempting to create an engaging classroom environment, as they often rely on uninspired teaching methodologies that lack interactive elements such as games (Zaenudin, 2015).

Initial investigations at Islamic Elementary School Salafiyah in Cirebon City have uncovered that these systemic issues have resulted in poor student motivation and learning outcomes, with 48% (14 students) failing to meet the minimum competency standards. This lack of achievement is the result of ineffective teaching practices and disruptive student behavior in the classroom. In addition, academics such as Jaelani (2017) maintain that inadequate implementation of educational technology and techniques leads to subpar academic results and decreased student interest in learning.

Student motivation, which refers to the internal drive to pursue education, has a notable influence on academic outcomes (Nashar, 2014; Emda, 2017; Sari & Sutriyani, 2023). Poorly motivated students frequently experience decreased academic performance. Learning outcomes, which align with educational objectives, are measurable changes in behavior (Dewi et al., 2013; Novita et al., 2019) and provide essential data for ongoing pedagogical evaluation. Consequently, a poor learning outcome not only signifies individual student failure but also suggests systemic educational inadequacy.

To overcome these challenges, the present study advocates for the incorporation of the VAK (Visualization, Auditory, Kinesthetic) model, which has been documented to enhance both student motivation and academic performance (Istiqomah & Suryadarma, 2023). The Visualization, Auditory, Kinesthetic (VAK) model is a learning approach that emphasizes direct learning experiences by maximizing the ability to remember visually (Visual), auditory (Auditory), and increase movement and emotion (Kinesthetic) (Mudhoffar & Roihanah, 2021). This model is considered effective because it pays attention to these three aspects and utilizes the potential of students that they already have by training and developing them (Nurjanah et al., 2022).

The VAK model has been used in various learning contexts, such as improving students' learning outcomes in religious subjects, math, Indonesian language, and even in sports such as basic basketball passing techniques (Putri Rahayu et al., 2022). Research shows that the use of the VAK model can improve concept

understanding, writing skills, and student learning outcomes (Mursid et al., 2018; Wahdini & Barus, 2018; Nurjanah et al., 2022).

This multisensory approach facilitates an immersive and captivating learning experience, ameliorating both teacher-student interactions and learning outcomes (Elisa et al., 2019; Hartanti, 2017). In addition, using VAK model allows teachers to explore students' need and present subjects in a more tangible manner, making the taught concepts easily understandable (Samsiyah & Fajar, 2021). Therefore, this study aims to examine the impact of the VAK model on the motivation and learning outcomes of fourth-grade students at Islamic Elementary School.

## METHOD

This study uses a quantitative research method to gain a thorough understanding of the effectiveness of the Visual, Auditory, Kinesthetic (VAK) model in an educational setting. The research design implements a one-group pretest-posttest model, proven by Sugiyono (2017) as an effective tool for evaluating the effects of pedagogical interventions.

The sample of the study consists of 29 students from class fourth grade Islamic Elementary School Salafiyah in the city of Cirebon. Using a saturation sampling technique, this study includes all students in the class to eliminate sample bias and allow for generalization of the findings to a larger population.

Four instruments are used for data collection to provide a comprehensive view. Classroom observations focus on the implementation of the VAK model by teachers. Surveys evaluate student perceptions and motivation when using the VAK model. Pre- and post-intervention academic assessments, focused on Fiqih, measure changes in learning outcomes. Additional data triangulation comes from class notes and teaching materials.

The study's data underwent analyses employing multiple statistical techniques, including normality tests to ensure accurate data distribution, descriptive analyses to assess mean values and percentages, t-tests to determine significant differences in learning outcomes, N-Gain calculations to measure the magnitude of improvement, simple linear regression to identify variable relationships, and the coefficient of determination to estimate the independent variable's influence on the dependent variable.

## RESULTS

### *1. The Implementation of VAK model in the 4th grade*

The VAK model is considered effective because it considers different learning styles, namely visual, auditory and kinesthetic learning styles. The students'

responses to the implementation of the VAK model in the learning process can be seen in table 1.

**Table 1**

*Recapitulation of students' responses to the implementation of the VAK model*

| Item | SS | S | RR | TS | STS |
|---|---|---|---|---|---|
| The teacher checks students' readiness to learn. | 10 | 8 | 8 | 2 | 1 |
| The teacher provides learning objectives and steps. | 10 | 8 | 8 | 2 | 1 |
| The teacher introduces the material through pictures, props and videos. | 10 | 8 | 8 | 2 | 1 |
| The teacher asks students to solve the problem through group work, observation, or experiment. | 10 | 8 | 8 | 2 | 1 |
| The teacher asks groups or individual students to present their ideas. | 10 | 8 | 8 | 2 | 1 |
| The teacher and students correct the presentation results together. | 10 | 8 | 8 | 2 | 1 |
| The teacher makes the topic of the lesson related to daily life. | 10 | 8 | 8 | 2 | 1 |
| The teacher does not encourage students to actively participate in the class... | 10 | 7 | 3 | 6 | 3 |
| The teacher does not ask questions to increase students' knowledge. | 5 | 8 | 6 | 8 | 2 |
| The teacher does not provide guidance to students in filling out the worksheet | 10 | 7 | 3 | 6 | 3 |
| Students do not confirm or reinforce student work through photos, props, or videos. | 10 | 7 | 3 | 6 | 3 |

| | | | | | |
|---|---|---|---|---|---|
| The teacher does not conduct feedback with the learners when the learning is over | 10 | 8 | 8 | 2 | 1 |
| Total Students | 115 | 93 | 79 | 42 | 19 |
| Percentage | 33,04% | 26,72% | 22,70% | 12,06% | 5,45% |

Based on table 1 above, 33.04% of students stated that they strongly agreed with the use of VAK, 26.72% of students stated that they agreed with the use of VAK, 22.70% of students stated that they were undecided about the use of VAK, 12.06% of students stated that they disagreed with the use of VAK, and 5.45% of students stated that they strongly disagreed with the use of VAK. Thus, the percentage of students that agreed and strongly agreed with the use of the VAK model was 59.76%, while 17.51% disagreed and strongly disagreed, and 22.70% were undecided. An overview of student responses to the use of the VAK model can also be seen in figure 1 below.

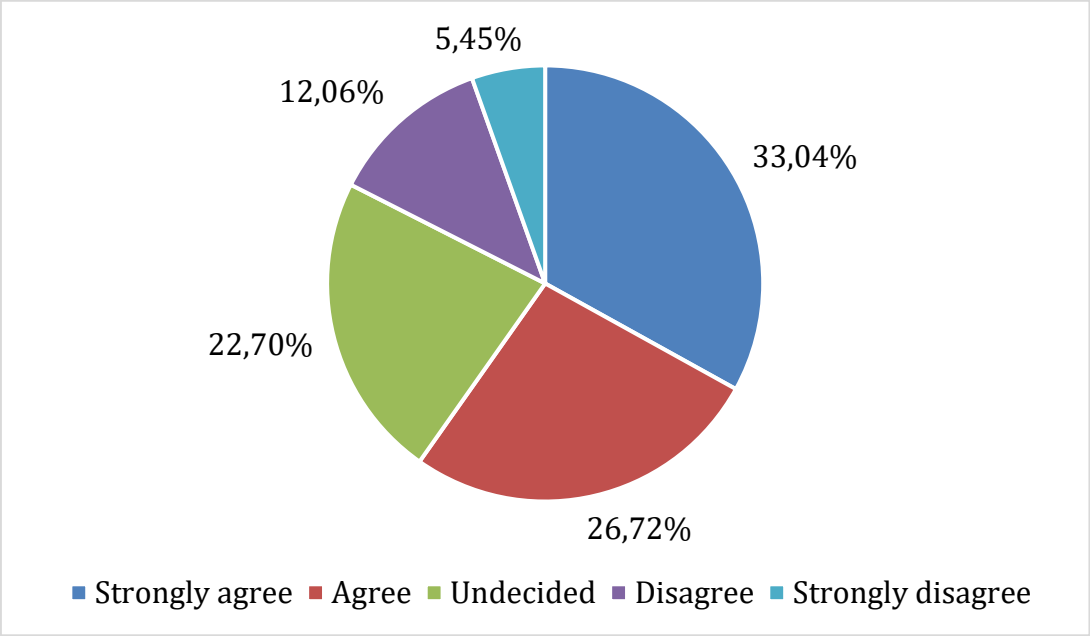


**Figure 1**

*Students' responses to the implementation of the VAK model*

### *2. The learning motivation of Salafiyah Islamic Elementary School Students*

The motivation questionnaire used consisted of 12 statements that measured students' interest in the subject matter taught and to assess the level of motivation they gained from the learning experience. Students' responses to the questionnaire were as follows.

**Table 2**

*Recapitulation of motivation questionnaire*

| Item | SS | S | RR | TS | STS |
|---|---|---|---|---|---|
| I always listen to the material when learning takes place | 19 | 7 | 2 | 0 | 1 |
| I always try to understand topics that are difficult for me. | 15 | 7 | 6 | 0 | 1 |
| I always ask the teacher if I feel confused. | 16 | 6 | 6 | 0 | 1 |
| I study on my own accord | 19 | 7 | 2 | 0 | 1 |
| I always want to get good grades to avoid remedials. | 15 | 7 | 6 | 0 | 1 |
| I always make time to study with friends | 8 | 14 | 5 | 1 | 1 |
| I am happy if I get praise from my teacher | 19 | 7 | 2 | 0 | 1 |
| When I receive a reward, I am happy and will try even harder to get another reward. | 4 | 12 | 9 | 3 | 1 |
| I am not enthusiastic about lessons that I don't like. | 4 | 12 | 9 | 3 | 1 |
| I study only when I'm about to take an exam | 4 | 12 | 9 | 3 | 1 |
| I am not happy if a friend achieves more than me. | 4 | 12 | 9 | 3 | 1 |
| I get angry if I receive negative criticism from friends | 4 | 12 | 9 | 3 | 1 |
| Total students | 131 | 115 | 74 | 16 | 12 |
| Percentage | 37,64% | 33,04% | 21,26% | 4,59% | 3,44% |

According to the data presented in Table 2, 37.64% of students strongly agree with the statement about student learning motivation, 33.04% of students agree, 21.26% of students are undecided, 4.59% of students disagree, and 3.44% of students strongly disagree. Thus, 70,68% of students agreed or strongly agreed with positive statements about learning motivation, while 9.03% disagreed and strongly disagreed, and 21.26% were undecided.

### *3. The learning outcomes of Salafiyah Islamic Elementary School Students*

The following data corresponds to the pretest, posttest, and N-gain scores of Class IV B at Salafiyah Islamic Elementary School, as presented in Table 3.

**Table 3**

*Pretest, Posttest, N-Gain scores*

| NO. | Description | *Pretest* | *Posttest* |
|---|---|---|---|
| 1. | Minimum | 35 | 70 |
| 2. | Maximum | 90 | 95 |
| 3. | Average | 60,7 | 79,1 |

Table 3 provides a snapshot of the students' learning outcomes both before and after the implementation of the VAK (Visual, Auditory, and Kinesthetic) learning model. Prior to utilizing VAK, the students' pretest scores exhibited an average of 60.7, with a minimum score of 35 and a maximum score of 90. Following the application of VAK, the posttest scores saw a notable improvement, with an average score of 79.1, a minimum score of 70, and a maximum score of 95. This data underscores the positive impact of the VAK model on enhancing students' learning outcomes.

**Table 4**

*Normality Test*

| **One-Sample Shapiro-Wilk** | | | |
|---|---|---|---|
| **Tests of Normality** | | | |
| | Shapiro-Wilk | | |
| | Statistic | Df | Sig. |
| Pretest | .949 | 29 | .175 |
| Postes | .939 | 29 | .094 |
| a. Lilliefors Significance Correction | | | |

The residual values are normally distributed, according to the normality test results shown in Table 4, because the pretest significance value of 0.175 is greater than 0.05 and the posttest significance value of 0.94 is greater than 0.05.

**Table 5**

*N-Gain Test*

| Descriptive Statistics | | | | | |
|---|---|---|---|---|---|
| | N | Minimum | Maximum | Mean | Std. Deviation |
| Ngain_Score | 29 | .17 | .71 | .4351 | .16599 |
| Ngain_Percent | 29 | 16.67 | 71.43 | 43.5126 | 16.59866 |
| Valid N (listwise) | 29 | | | | |

The N-Gain test results show the improvement of student learning based on pretest and posttest scores. It was found that the highest N-Gain was 0.71 and the lowest was 0.17, with an average value of 0.4351, which indicates that students belong to the medium category.

### *4. The effect of using VAK on motivation and learning outcomes*

Table 6 reveals that the R2 (R square) value stands at 0.226, equivalent to 22.6%. This value elucidates that the influence of employing the VAK model on learning motivation accounts for 22.6%, while other unexamined factors contribute to the remaining 77.4%. In Table 7, the impact of employing VAK on learning outcomes is notably higher at 47.5%, as indicated by the R2 value of 0.475, equivalent to 47.5%, leaving other unexplored elements at 52.5%.

**Table 6**

*Results of the Determination Coefficient Test Between Variable X and Variable Y1*

| Model Summary[b] | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .475[a] | .226 | .197 | 4.483 |
| a. Predictors: (Constant), VAK | | | | |
| b. Dependent Variable: Motivation | | | | |

**Table 7**

*Results of the Determination Coefficient Test Between Variable X and Variable Y2*

| ***Model Summary*** | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .777[a] | .475 | .453 | 6.69990 |
| a. Predictors: (Constant), x | | | | |

Referring to Table 8, a significance level of 0.05 and degrees of freedom (df) of 26 (calculated as df = 29-3 for N = 29) were employed. The computed t-value, derived from SPSS, was found to be 2.806. Based on the statistical decision criteria, when the calculated t-value exceeds the tabulated t-value at a significance level of 0.05, Ha (the alternative hypothesis) is accepted and H0 (the null hypothesis) is rejected. In this case, the calculated t-value of 2.806 surpasses the tabulated t-value at the 0.05 significance level. Consequently, the results from the hypothesis testing substantiate that "there is an effect of using VAK on motivation." Table 9 presents a 2-tailed significance value of 0.00, which is smaller than the threshold value of 0.05. This outcome implies that the utilization of VAK (X) indeed exerts an impact on student learning outcomes (Y2).

**Table 8**

*The results of the t test between variable X and variable Y1*

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | T | Sig. |
| 1 | (Constant) | 32.767 | 5.698 | | 5.750 | .000 |
| | VAK | .346 | .123 | .475 | 2.806 | .009 |

a. Dependent Variable: Motivation

**Table 9**

*The results of the t test of Variable X on Variable Y2*

**Paired Samples Test**

| | | Paired Differences | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 95% Confidence Interval of the Difference | | | | |
| | | Mean | Std. Deviation | Std. Error Mean | Lower | Upper | T | Df | Sig. (2-tailed) |
| Pair 1 | before - after | -18.448 | 12.894 | 2.394 | -23.353 | -13.544 | -7.705 | 28 | .000 |

## DISCUSSION

The implementation of the VAK (Visual, Auditory, and Kinesthetic) model has led to significant improvements in the learning motivation of fourth-grade students at MI Salafiyah in Cirebon City, especially in the context of learning Fiqh. Since the adoption of this model, students have displayed a greater eagerness to engage with materials related to the mandated bath procedure. Furthermore, the students' proactive approach to seeking clarification through questioning and active engagement in class discussions emphasizes their heightened motivation. Acknowledging the importance of motivation in the learning process, a reward system in the form of praise has been established to further incentivize active student participation. This approach has been successful in motivating students to take charge of their decision-making and attain their academic objectives. This perspective is supported by Wahidin's (2019) viewpoint and Mariyam et al., (2020).

The VAK model's ability to encourage interactive and captivating learning experiences is apparent. This approach integrates visual, auditory, and kinesthetic learning styles, allowing educators to extract the untapped potential of their students. This observation is in agreement with Hariyani and Sejati's (2020) findings, which suggest that the VAK model enhances student participation in the learning process (Sánchez Bautista, et al., 2023). Additionally, its implementation fosters heightened teacher-student interaction, as Elisa et al. (2019) have pointed out, confirming its effective integration into pedagogy (Dachi, et al., 2020).

The impact of the VAK model on the academic outcomes of students in Grade IV B at MI Salafiyah Kota Cirebon was profound. Initially, the students experienced below-average learning outcomes due to the monotony of instructional media and methods, which made learning uninteresting and passive. Santhi et al. (2020) suggest that adopting the VAK learning model in elementary school curricula could potentially improve the competencies of fourth-grade students (Viani, 2019). This approach promotes interaction between teachers and students and introduces enjoyable and engaging learning strategies that enhance students' confidence, motivation, and engagement. Furthermore, it provides parents with insights into their children's development, as demonstrated by Mulyani et al. (2021).

The VAK model plays a pivotal role in the learning journey by improving students' retention of subject matter through direct engagement via visual, auditory, and kinesthetic modalities. The VAK model is anticipated to have a positive impact on student learning outcomes, as supported by the perspectives of Bire et al. (2014), Ferawati (2021), and Risdianto & Sumartono (2022). Overall, the VAK model proves to be a valuable educational tool, as it not only fosters motivation but also rejuvenates the learning process and enhances student achievement.

## CONCLUSION

Based on research findings, it can be concluded that the Visualization, Auditory, and Kinesthetic (VAK) model has a significant impact on both learning motivation and student learning outcomes. The data analysis shows a significant relationship of 22.6% between the VAK variable and learning motivation, as measured by a coefficient of determination of 0.226. Overall, student motivation levels fall within the "good" category, as indicated by the responses in the questionnaires.

In addition, the VAK model shows a more significant influence on student learning outcomes, with a coefficient of determination of 47.5% between the VAK variable (X) and the learning outcomes variable (Y2). This indicates that the implementation of the VAK model contributes significantly to the improvement of student learning outcomes. This is supported by the increase in average student scores from the pretest (60.7) to the posttest (79.1), indicating moderate improvement with an average n-gain value of 0.4351.

These findings suggest that applying the VAK model could be a useful approach to increase both student learning motivation and outcomes. The implications suggest that the effectiveness of instructional design can be optimized by incorporating a teaching methodology that considers visual, auditory, and kinesthetic learning styles. Therefore, the implementation of the VAK model could be considered as a potentially influential measure to improve the quality of education.

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