



## The Relationship Between Learning Interest and Learning Outcomes in Food Processing and Presentation Subjects in Vocational High Schools

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### Abstract

*Learning interest is widely recognized as an important psychological factor influencing students' academic achievement, particularly in vocational education where successful learning requires sustained engagement in both theoretical and practical activities. However, empirical evidence regarding its relationship with learning outcomes in culinary vocational education remains limited. This study aimed to examine the relationship between students' learning interest and learning outcomes in the Food Processing and Presentation subject among Grade XI Culinary students at SMK Negeri 1 Ampek Angkek. A quantitative correlational research design was employed involving all 44 Grade XI Culinary students using a total sampling technique. Primary data on learning interest were collected through a validated Likert-scale questionnaire, while secondary data on learning outcomes were obtained from students' official Summative Scope of Material assessment scores. Prior to the main study, the questionnaire was validated and demonstrated excellent reliability (Cronbach's Alpha = 0.952). The collected data were analyzed using descriptive statistics and Pearson Product-Moment correlation analysis after satisfying the assumptions of normality. The findings revealed that students generally demonstrated a high level of learning interest and achieved relatively good learning outcomes. Furthermore, the analysis identified a positive and statistically significant relationship between learning interest and learning outcomes ( $r = 0.425$ ,  $p = 0.004$ ), indicating that students with higher learning interest tended to achieve better academic performance. These findings suggest that learning interest serves as an important psychological resource that supports students' cognitive engagement and competency development in practice-oriented vocational learning. The study underscores the importance of implementing learner-centered pedagogical strategies that cultivate students' interest through authentic practical experiences, active participation, meaningful feedback, and collaborative learning. Strengthening students' learning interest should therefore be considered an integral component of efforts to improve learning quality and workforce readiness in vocational culinary education.*

## Introduction

Education is widely recognized as one of the primary drivers of human resource development and national competitiveness. Through education, individuals acquire knowledge, skills, attitudes, and values that enable them to adapt to social change, technological advancement,

and the evolving demands of the labor market (Mustafazada, 2024; Jafarov, 2025). Beyond academic achievement, education contributes to economic productivity, social inclusion, and sustainable development by preparing learners to become competent and responsible citizens (Tyagi, 2024; Challoumis, 2024). In Indonesia, educational goals emphasize the balanced development of cognitive, affective, and psychomotor competencies, ensuring that learners possess not only academic knowledge but also practical skills and positive character traits required for lifelong learning and employment (Damopolii, 2025; Rusdiyanti et al., 2025; AlAfnan, 2025; Rammayani, 2026). Consequently, improving learning quality remains an important priority at all educational levels, particularly in vocational education where graduates are expected to enter the workforce immediately after completing their studies.

Vocational High Schools play a strategic role in producing graduates equipped with occupational competencies that align with the needs of industry and business. Unlike general secondary education, vocational education combines theoretical understanding with extensive practical experience to prepare students for specific professions (Mordhorst & Jenert, 2023; Fantinelli et al., 2024). The Indonesian Ministry of Education and Culture emphasizes that vocational education should develop skilled, productive, independent, and professional graduates who are capable of meeting industrial standards and adapting to technological changes in the workplace (Tammets & Ley, 2023). Achieving these objectives requires effective learning processes that promote both conceptual understanding and practical competence, particularly in vocational subjects where mastery of technical skills is essential (Dahalan et al., 2024).

One of the essential subjects in the Culinary Expertise Program is Food Processing and Presentation. This subject requires students to master various competencies related to food preparation, processing techniques, sanitation and hygiene, nutritional principles, plating aesthetics, and food presentation standards. Unlike predominantly theoretical subjects, Food Processing and Presentation integrates classroom instruction with intensive practical activities conducted in laboratories or training kitchens. Students are expected not only to understand theoretical concepts but also to demonstrate technical proficiency, creativity, precision, and professional work attitudes during practical sessions. Therefore, successful learning in this subject depends on active student participation, consistent practice, and sustained engagement throughout the learning process (Zitha et al., 2023; Dzaiy & Abdullah, 2024; Khatter et al., 2024; Himmele & Himmele, 2026).

Student achievement in vocational education is commonly reflected through learning outcomes, which represent the extent to which learners achieve predetermined educational objectives after participating in instructional activities. Learning outcomes encompass cognitive achievement, affective development, and psychomotor competence acquired through learning experiences (Owan et al., 2022; Yasmin et al., 2023; Anand et al., 2024; AlAfnan, 2025). In vocational settings, learning outcomes are particularly significant because they indicate students' readiness to perform occupational tasks and meet workplace competency standards. Previous studies have shown that strong learning outcomes in vocational education are associated with improved employability, professional competence, and career readiness. Consequently, understanding the factors that influence student learning outcomes remains an important concern for educators and researchers.

Learning outcomes are influenced by multiple interacting factors that originate from both internal and external sources. Internal factors include intelligence, motivation, self-regulation, learning interest, learning strategies, attitudes, and physical condition, whereas external factors

include family support, school environment, instructional quality, peer relationships, and learning facilities. Although these factors collectively shape students' academic performance, educational researchers consistently identify learning interest as one of the most influential determinants of successful learning because it directly affects students' willingness to participate actively, maintain concentration, and persist when encountering learning difficulties (Skinner et al., 2022; Mulaudzi, 2023; Suleiman et al., 2024; Wang & Chen, 2025).

Learning interest refers to a relatively stable tendency to experience enjoyment, curiosity, and personal engagement toward learning activities (Yan et al., 2025; Tu et al., 2025). Students with high learning interest generally exhibit greater enthusiasm, stronger concentration, higher participation, and greater persistence in completing academic tasks. They also tend to seek additional learning opportunities, ask questions, and demonstrate intrinsic motivation to improve their understanding (Murayama, 2022; Guo & Fryer, 2025). Conversely, students with low learning interest frequently experience boredom, reduced classroom participation, limited attention during instruction, and lower persistence when confronted with challenging learning tasks. These conditions often contribute to lower academic achievement and reduced mastery of vocational competencies.

Previous educational research consistently demonstrates a positive relationship between learning interest and student achievement across various educational settings. Students who possess higher levels of learning interest generally achieve better academic performance because they devote greater attention, invest more effort, and actively engage in learning activities (Hendrawijaya, 2022; Jafre, 2022). Furthermore, learning interest has been associated with improved classroom participation, increased learning motivation, better problem-solving ability, and stronger long-term knowledge retention (Batool et al., 2023). In vocational education, where practical competence requires repeated practice and continuous engagement, maintaining students' learning interest becomes even more critical because practical learning cannot be effectively achieved through passive participation alone (Wahdib et al., 2024).

Several indicators have been proposed to measure students' learning interest, including enjoyment during learning activities, focused attention, active participation, willingness to engage in academic tasks, and initiative to achieve learning objectives (Solari et al., 2023; Wibowo et al., 2025; Siregar, 2025). These indicators reflect students' emotional, cognitive, and behavioral engagement throughout the instructional process. When these dimensions are weak, students are less likely to participate actively in classroom discussions, complete assignments responsibly, or practice vocational skills consistently. Consequently, learning outcomes may decline despite the availability of adequate instructional resources and qualified teachers (Mhlongo et al., 2023).

Despite growing recognition of the importance of learning interest, many vocational schools continue to encounter challenges in fostering active student engagement, particularly in practical subjects. During the Field Work Experience (PLK) conducted between July and December 2025 at SMK Negeri 1 Ampek Angkek, classroom observations and interviews with teachers responsible for Food Processing and Presentation revealed that many students demonstrated limited enthusiasm during learning activities. Teachers reported that students were often reluctant to participate actively during practical sessions, paid insufficient attention to instructional explanations, and showed limited initiative in completing learning tasks independently. These behavioral characteristics suggested relatively low levels of learning interest, which teachers perceived as contributing to unsatisfactory academic performance.

School academic records further support these observations. Among 44 eleventh-grade students enrolled in the Culinary Expertise Program, only 19 students achieved scores exceeding the Minimum Competency Criterion (KKM), while 25 students scored below the required standard. This distribution indicates that more than half of the students had not yet attained the expected learning outcomes in Food Processing and Presentation. Considering that this subject constitutes a fundamental component of vocational competence in culinary education, the prevalence of learning outcomes below the established standard raises important educational concerns. Students who fail to master these competencies may encounter difficulties in subsequent vocational courses and experience reduced readiness for industrial practice and future employment.

The discrepancy between the expected competencies and the actual academic achievement observed at SMK Negeri 1 Ampek Angkek highlights the need to better understand factors that contribute to students' learning outcomes. Although numerous variables influence academic achievement, learning interest represents an important internal factor because it shapes students' engagement, persistence, and commitment throughout the learning process. Investigating the relationship between students' learning interest and their learning outcomes in Food Processing and Presentation is therefore important for identifying strategies that can improve instructional effectiveness and support the development of vocational competencies. Findings from this study are expected to contribute to efforts aimed at enhancing student engagement and improving learning quality in vocational education, particularly within culinary education programs that emphasize both theoretical understanding and practical skill mastery.

## **Method**

### **Research Design**

This study employed a quantitative research approach using a correlational design to examine the relationship between students' learning interest and their learning outcomes in the Food Processing and Presentation subject. A correlational design was considered appropriate because the purpose of the study was to determine the magnitude and direction of the relationship between two naturally occurring variables without manipulating the learning environment or administering any experimental treatment. In this study, learning interest served as the independent variable (X), while students' learning outcomes served as the dependent variable (Y). The research was conducted at SMK Negeri 1 Ampek Angkek, West Sumatra, Indonesia, during May and June 2026.

### **Population and Sample**

The target population consisted of all Grade XI students enrolled in the Culinary Expertise Program at SMK Negeri 1 Ampek Angkek during the 2025/2026 academic year. The population comprised two classes with a total of 44 students. Considering that the population size was relatively small and accessible, this study adopted a total sampling technique, whereby every member of the population was included as a research participant. Total sampling was selected to eliminate sampling error and ensure that the findings accurately represented the characteristics of the entire population under investigation. Consequently, the final sample consisted of all 44 Grade XI Culinary students.

## Research Variables

The study examined two research variables. The independent variable was students' learning interest, defined as students' psychological tendency to demonstrate enjoyment, attention, enthusiasm, active participation, and willingness to engage in learning activities during the Food Processing and Presentation course. The dependent variable was students' learning outcomes, defined as the level of academic achievement attained after participating in the learning process, as reflected in the official Summative Scope of Material assessment scores for the Food Processing and Presentation subject. These scores represented students' mastery of the competencies established in the curriculum and were obtained from school academic records.

## Research Instruments

Two instruments were employed to collect the research data. The first instrument was a structured questionnaire used to measure students' learning interest. The questionnaire consisted of closed-ended statements developed using a five-point Likert scale with response categories of Always (5), Often (4), Sometimes (3), Rarely (2), and Never (1). The instrument was constructed to assess multiple dimensions of learning interest, including students' enjoyment during learning activities, attention and concentration, willingness to participate actively, initiative in learning, and efforts to achieve learning objectives. Higher questionnaire scores indicated higher levels of learning interest.

The second instrument consisted of documentation obtained from school academic records. Students' learning outcomes were measured using the official Summative Scope of Material scores in the Food Processing and Presentation subject. These assessment results were provided by the course teacher and represented students' academic performance based on the school's standardized assessment procedures. The use of official academic records ensured the objectivity and authenticity of the learning outcome data.

## Instrument Validation and Reliability

Prior to the main data collection, the learning interest questionnaire underwent a pilot study to evaluate its validity and reliability. The pilot test was administered to 30 Grade XI Culinary students at SMK Negeri 2 Bukittinggi. These students were selected because they possessed characteristics similar to those of the research participants and had previously completed the Food Processing and Presentation subject, making them suitable respondents for instrument testing. The questionnaire was distributed electronically using Google Forms to facilitate data collection.

Item validity was evaluated using the Pearson Product-Moment correlation coefficient at a significance level of 0.05. Each questionnaire item was correlated with the total questionnaire score to determine its ability to measure the intended construct. Of the initial 60 statement items, 49 demonstrated correlation coefficients exceeding the critical value and were therefore retained as valid items. The remaining 11 items failed to satisfy the validity criterion and were excluded from the final questionnaire.

Following the validity assessment, the internal consistency of the instrument was examined using Cronbach's Alpha reliability analysis. The reliability coefficient obtained was 0.952, indicating excellent internal consistency according to commonly accepted reliability standards. This result demonstrates that the questionnaire consistently measured students' learning interest and was therefore considered appropriate for use in the main study.

## **Data Collection Procedures**

Data collection was conducted after obtaining permission from the school administration. Primary data were collected by administering the validated learning interest questionnaire to all Grade XI Culinary students. Before completing the questionnaire, participants were informed about the purpose of the study and were assured that their responses would be treated confidentially and used solely for academic research purposes. Participation was voluntary, and respondents completed the questionnaire individually to minimize response bias.

Secondary data were obtained through documentation of students' official Summative Scope of Material scores in the Food Processing and Presentation subject. These records were provided directly by the subject teacher with authorization from the school. The combination of questionnaire responses and official academic records enabled the researcher to examine the relationship between students' learning interest and their learning outcomes using objective and complementary data sources.

## **Data Analysis**

The collected data were analyzed using descriptive and inferential statistical techniques. Descriptive statistics were first employed to summarize the characteristics of the research variables by calculating frequencies, percentages, means, standard deviations, minimum scores, and maximum scores. These statistics provided an overview of the distribution of students' learning interest and learning outcomes.

Before testing the research hypothesis, assumption tests were conducted to determine whether the data satisfied the requirements for parametric statistical analysis. The normality test was performed to examine whether the data followed a normal distribution, while the linearity test was conducted to verify the existence of a linear relationship between the independent and dependent variables. These preliminary analyses ensured the appropriateness of the selected inferential statistical procedure.

The relationship between students' learning interest and learning outcomes was subsequently examined using the Pearson Product-Moment correlation analysis. This statistical technique was selected because both variables were measured on interval scales and the study aimed to determine the strength and direction of their linear relationship. Statistical significance was evaluated at the 0.05 level. In addition to the correlation coefficient, the coefficient of determination ( $R^2$ ) was calculated to estimate the proportion of variance in students' learning outcomes that could be explained by their learning interest. All statistical analyses were conducted using IBM SPSS Statistics software.

## **Result and Discussion**

This study consists of two variables, namely the independent variable of students' learning interest in the subject of Food Processing and Presentation (X) and the dependent variable of learning outcomes in the subject of Food Processing and Presentation (Y). The results of the study are in accordance with the research objectives that have been obtained, namely analyzing the relationship between learning interest and learning outcomes in the subject of Food Processing and Presentation of Class XI Culinary SMK Negeri 1 Ampek Angkek. In this section, the results of the study will be described in full from the data obtained, namely the research sample data totaling 44 samples from class XI culinary students of SMK Negeri 1 Ampek Angkek.

## Data Description of Interest in Learning Food Processing and Serving

Table 1. Descriptive Statistics of Learning Interest Variables

| Statistics                | Score       |
|---------------------------|-------------|
| Number of Respondents (N) | 44          |
| Mean                      | 191,18      |
| Median                    | 191,00      |
| Mode                      | 187 dan 202 |
| Standard Deviation        | 21,59       |
| Minimum Score             | 141         |
| Maximum Score             | 242         |

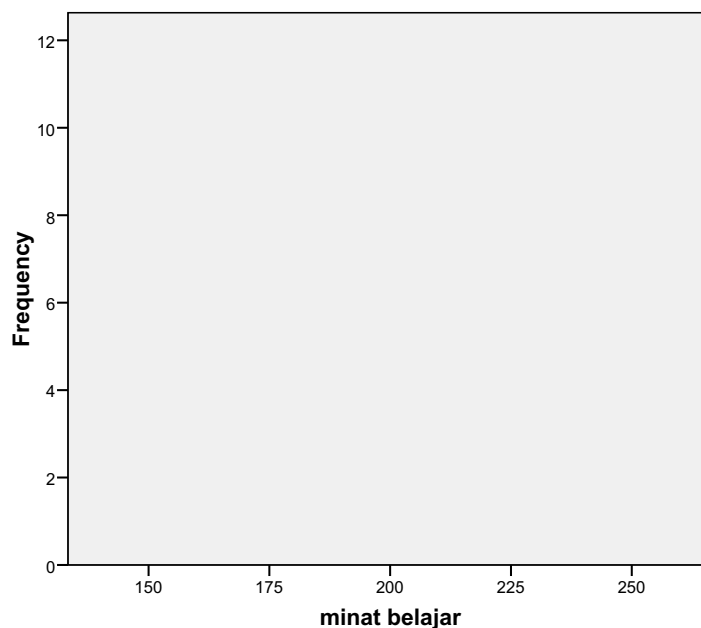


Figure 1. Histogram of Learning Interest Data Curve for Food Processing and Serving Subject

Based on the results of the descriptive analysis, the learning interest variable measured in 44 students obtained an average value (mean) of 191.18, with a median value of 191, and a standard deviation of 21.59. The minimum score obtained by respondents was 141, while the maximum score reached 242. The relatively high average value indicates that in general students have a good learning interest in the subject of Food Processing and Presentation.

Table 2. Categories of Interest in Learning Methods (Mi and SDi)

| Category  | Frequency | Percentage |
|-----------|-----------|------------|
| Very High | 19        | 43,18%     |
| High      | 21        | 47,73%     |
| Medium    | 4         | 9,09%      |
| Low       | 0         | 0,00%      |
| Very Low  | 0         | 0,00%      |
| Total     | 44        | 100%       |

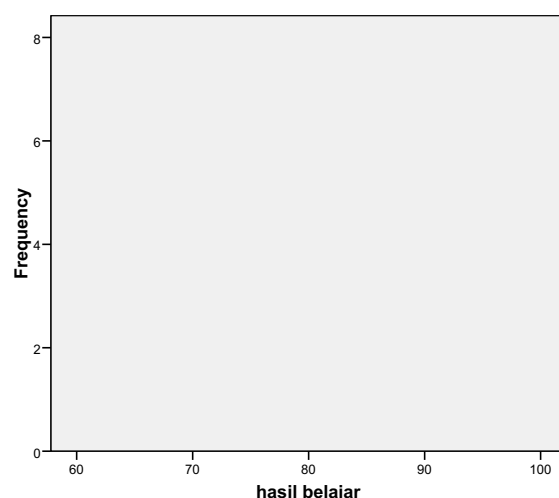
Grouping based on the MI and SDi categories shows that 21 students (47.73%) are in the high category, 19 students (43.18%) are in the very high category, and 4 students (9.09%) are in the medium category. There are no respondents in the low or very low categories. Thus, in general, the learning interest of class XI Culinary students at SMK Negeri 1 Ampek Angkek can be said to be high. This high learning interest indicates that most students have a good interest, attention, and desire to participate in the learning process. This condition can be an important asset in supporting active student involvement during learning and has the potential to make a positive contribution to the achievement of learning outcomes in the subject of Food Processing and Presentation.

### Description of Learning Outcomes Data on Food Processing and Serving

The description of learning interest data aims to provide a general overview of the level of learning interest of class XI Culinary students of SMK Negeri 1 Ampek Angkek in the subject of Food Processing and Presentation. Data on learning interest were obtained through the distribution of questionnaires to 44 respondents which were arranged based on indicators of desire, feelings of pleasure, attention, environment, and learning experience. Furthermore, the collected data were analyzed using descriptive statistics to determine the characteristics of the data, including the number of respondents, average value (mean), median, mode, standard deviation, minimum score, and maximum score. This descriptive analysis was conducted to provide a clear picture of the condition of students' learning interest before further analysis was carried out to test the relationship between learning interest and learning outcomes.

Table 3. Descriptive Analysis of Learning Outcomes

| Statistics                | Score              |
|---------------------------|--------------------|
| Number of Respondents (N) | 44                 |
| Mean (Average)            | 78,27              |
| Median                    | 78,00              |
| Mode                      | 70, 78, 80, dan 85 |
| Standard Deviation        | 7,51               |
| Minimum Value             | 63                 |
| Maximum Value             | 95                 |



*Figure 2. Histogram of Learning Outcome Data Curve for Food Processing and Serving Subject*

The learning outcome variables in this study were measured using the Summative Scope of Material score in the Food Processing and Presentation subject obtained from 44 class XI Culinary students of SMK Negeri 1 Ampek Angkek. Based on the results of descriptive statistical analysis, the average score (mean) was 78.27, the median was 78.00, and the standard deviation was 7.51. The lowest learning outcome score obtained by students was 63, while the highest score reached 95.

Table 4. Frequency Distribution of Learning Outcomes

| Value Interval | Frequency | Percentage |
|----------------|-----------|------------|
| 63–68          | 4         | 9,09%      |
| 69–74          | 9         | 20,45%     |
| 75–80          | 15        | 34,09%     |
| 81–86          | 8         | 18,18%     |
| 87–95          | 8         | 18,18%     |
| Total          | 44        | 100%       |

Based on the frequency distribution, most students are in the 75–80 range, namely 15 students (34.09%). Furthermore, 9 students (20.45%) are in the 69–74 range, 8 students (18.18%) are in the 81–86 range, 8 students (18.18%) are in the 87–95 range, and 4 students (9.09%) are in the 63–68 range. Student learning outcomes tend to be at a fairly good level, with an average score of 78.27 and a relatively homogeneous data distribution as indicated by a standard deviation of 7.51. This indicates that most students have achieved adequate learning outcomes in the Food Processing and Presentation subject.

### Normality Test

The normality test was performed using the Shapiro-Wilk test at a significance level of 0.05. The decision-making criteria were: if the significance value (sig.)  $> 0.05$ , then the data is normally distributed. Conversely, if the significance value (sig.)  $< 0.05$ , then the data is not

normally distributed. The results of the Shapiro-Wilk normality test can be seen in the following table:

Table 5. Normality Test

| Variable          | Kolmogorov–Smirnov |    |       | Shapiro–Wilk |    |       |
|-------------------|--------------------|----|-------|--------------|----|-------|
|                   | Statistic          | df | Sig.  | Statistic    | df | Sig.  |
| Learning Interest | 0.072              | 44 | 0.200 | 0.985        | 44 | 0.830 |
| Learning Outcomes | 0.073              | 44 | 0.200 | 0.985        | 44 | 0.843 |

Based on the table above, in the Shapiro-Wilk column, the learning interest variable shows a greater significance value ( $0.830 > 0.05$ ). Meanwhile, the learning outcome variable has a greater significance value ( $0.843 > 0.05$ ). Based on these results, it can be concluded that the data from both variables in this study are normally distributed.

## Hypothesis Testing

### *Product Moment Correlation Test*

Product moment correlation, also known as Pearson correlation, is a parametric statistical technique for measuring the strength and direction of a linear relationship between two variables on an interval or ratio scale. A positive correlation coefficient indicates a unidirectional relationship (if one variable increases, the other variable also tends to increase), while a negative value indicates an inverse relationship (if one variable increases, the other variable tends to decrease). The strength of the relationship can be classified based on the magnitude of the correlation coefficient: 0.00-0.199 (very weak), 0.20-0.399 (weak), 0.40-0.599 (moderate), 0.60-0.799 (strong), and 0.80-1.000 (very strong). The basis for decision making if the significance value is  $< 0.05$  then the correlation is reversed, if the significance value is  $> 0.05$  then there is no correlation. The results of the correlation test can be seen in the following table:

Table 6. Product Moment Correlation Test

| Variables                             | <i>r</i> | <i>p</i> | <i>N</i> | Interpretation                |
|---------------------------------------|----------|----------|----------|-------------------------------|
| Learning Interest – Learning Outcomes | 0.425    | 0.004    | 44       | Moderate positive correlation |

Based on the table of product moment correlation test results between the variables of learning interest and learning outcomes, a correlation coefficient of 0.425 with a significance value (Sig. 2-tailed) of 0.004 is shown. The correlation coefficient of 0.425 is in the "Moderate" category (range 0.40-0.599), indicating that there is a moderate positive relationship between learning interest and learning outcomes. A significance value of less than  $0.004 < 0.05$  indicates that learning interest and learning outcomes are correlated, meaning the relationship between learning interest and learning outcomes is not a coincidence but a real and reliable relationship with a confidence level of 99.9%. The interpretation of this positive correlation of 0.425 means that the higher the student's learning interest, the higher the learning outcomes achieved. Conversely, if the student's learning interest is low, the student's learning outcomes tend to be lower.

### **T-test**

In this study, the t-test was used to test the hypothesis regarding the relationship between learning interest and learning outcomes in the Food Processing and Presentation subject for class XI Culinary students of SMK Negeri 1 Ampek Angkek. Decision making was carried out

by comparing the calculated  $t$  value with the  $t$  table at a significance level of 5% ( $\alpha = 0.05$ ) and looking at the significance value ( $p$ -value). If the calculated  $t$  value  $>$   $t$  table and the significance value is less than 0.05, then the alternative hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_0$ ) is rejected, which means the relationship between the two variables is proven to be statistically significant. The results of the T-test can be seen in the following table:

Tabel 7. Uji Koefisien Korelasi

| Predictor         | B      | SE    | $\beta$ | $t$   | $p$    |
|-------------------|--------|-------|---------|-------|--------|
| Constant          | 49.986 | 9.345 | —       | 5.349 | <0.001 |
| Learning Interest | 0.148  | 0.049 | 0.425   | 3.046 | 0.004  |

Based on the results of hypothesis testing using the  $t$ -test, the calculated  $t$  value was 3.046 and the table  $t$  value was 1.681 at a significance level of 5% ( $\alpha = 0.05$ ). In addition, a significance value (Sig.) of 0.004 was obtained, which means it is smaller than 0.05 ( $0.004 < 0.05$ ). These results indicate that the calculated  $t$  is greater than the table  $t$  and the significance value is smaller than the specified significance level, so the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_a$ ) is accepted. Thus, it can be concluded that there is a positive and significant relationship between learning interest and learning outcomes in the Food Processing and Presentation subject for class XI Culinary students of SMK Negeri 1 Ampek Angkek.

### Learning Interest as a Foundation for Competency Development in Vocational Education

The present study reinforces the view that learning interest constitutes more than a favorable emotional response toward classroom activities; rather, it functions as a fundamental psychological resource that shapes how students engage with learning opportunities, particularly in vocational education where competence is constructed through repeated interaction between conceptual understanding and practical performance. The observed relationship between learning interest and learning outcomes suggests that students' willingness to invest cognitive effort, sustain attention, and participate actively during instruction contributes meaningfully to the acquisition of vocational competencies. Although learning outcomes are influenced by numerous internal and external factors, the present findings indicate that learning interest remains an important mechanism through which students transform instructional experiences into measurable academic achievement. This interpretation shifts attention from viewing learning interest as merely an accompanying characteristic of successful students to recognizing it as a catalyst that facilitates productive learning behaviours throughout the educational process.

This perspective is consistent with contemporary theories of motivation and educational psychology that conceptualize interest as a self-reinforcing process rather than a static personal characteristic. Kharroubi & ElMediouni (2024) argue that interest develops progressively through continuous interaction between learners and meaningful learning experiences. Once students perceive instructional activities as personally relevant and intellectually engaging, they are more likely to allocate sustained attention, process information more deeply, and voluntarily participate in learning tasks (Mhlongo et al., 2023; Dumont & Ready, 2023; Wahyuni & Handriani, 2025). Demonstrates that interest enhances cognitive engagement by encouraging learners to employ deeper learning strategies instead of relying on surface memorization. Consequently, the contribution of learning interest extends beyond increasing students' enjoyment of learning; it improves the quality of cognitive processing, thereby enabling more durable knowledge construction and more effective transfer of learning into authentic performance contexts.

These arguments are particularly relevant within vocational education, where learning is expected to culminate not only in conceptual understanding but also in demonstrable occupational competence. Unlike many academic subjects in which achievement may depend predominantly on theoretical mastery, vocational learning requires students to repeatedly integrate declarative knowledge, procedural knowledge, technical skills, and professional attitudes. Such integration cannot be achieved through passive classroom attendance alone. Instead, it requires sustained engagement during demonstrations, practical exercises, collaborative activities, and reflective evaluation of one's own performance. Emphasizes that successful technical and vocational education depends substantially on learner engagement because vocational competencies emerge through active participation in authentic learning environments rather than through the transmission of information alone. From this perspective, learning interest functions as a psychological condition that enables students to persist through the iterative and often demanding process of skill acquisition.

The significance of learning interest becomes even more apparent when considering the characteristics of Food Processing and Presentation as a vocational subject. Competence in culinary education develops through repeated observation, experimentation, practice, refinement, and feedback. Students are expected to master technical procedures while simultaneously developing precision, creativity, hygiene awareness, time management, teamwork, and aesthetic judgment. Such multidimensional competencies require students to remain actively involved throughout the learning process. Students who approach practical learning with genuine curiosity and intrinsic interest are generally more willing to experiment with different techniques, seek clarification when encountering difficulties, and reflect critically on their own performance. Conversely, students with limited interest may complete practical tasks merely to satisfy course requirements without engaging in the reflective processes necessary for long-term competency development. In this respect, learning interest serves as an enabling condition that supports continuous improvement rather than merely influencing immediate academic performance.

The present findings also align with an expanding body of empirical evidence demonstrating that learning interest consistently predicts positive educational outcomes across diverse educational settings. Wu et al. (2024) argue that interest enhances both academic persistence and long-term achievement because interested learners voluntarily invest greater effort even when instructional tasks become increasingly challenging. Found that situational and individual interest contribute directly to sustained engagement, which subsequently improves learning performance and conceptual understanding. Within vocational education specifically, Li et al. (2024) reported that students with stronger learning interest demonstrate higher academic achievement because they participate more actively during instruction and display greater responsibility toward learning tasks. Comparable conclusions were reached by Derakhshan et al. (2025), who observed that learning interest encourages consistent participation and strengthens students' willingness to complete demanding learning activities. Collectively, these studies suggest that the influence of learning interest is neither incidental nor context-specific; instead, it represents a robust educational construct that supports successful learning across multiple disciplines and instructional environments.

The moderate magnitude of the relationship observed in this study deserves careful consideration. While learning interest contributes meaningfully to students' learning outcomes, it should not be interpreted as the sole determinant of academic success. Learning within vocational education represents a multidimensional process influenced simultaneously by instructional quality, teacher expertise, assessment practices, learning facilities, self-efficacy,

prior knowledge, family support, peer interaction, and opportunities for authentic workplace experience. Emphasize that academic achievement emerges through dynamic interactions among motivational, cognitive, behavioural, and contextual variables rather than through any single psychological factor. Consequently, improving students' learning interest alone is unlikely to eliminate disparities in learning outcomes unless it is accompanied by broader improvements in instructional design and learning environments. Recognizing this complexity prevents an overly simplistic interpretation of the findings and underscores the need for comprehensive educational interventions that address both learner characteristics and institutional conditions.

The implications of this interpretation extend beyond individual classroom practice. If learning interest is understood as a central mechanism supporting competency development, then cultivating interest should become an explicit objective of vocational education rather than an incidental consequence of effective teaching. This requires teachers to design learning experiences that connect classroom activities with authentic professional practice, encourage active problem solving, provide meaningful feedback, and create opportunities for students to experience competence and autonomy during practical learning. Such approaches are consistent with contemporary learner-centred pedagogies that emphasize engagement as a prerequisite for meaningful learning rather than merely an outcome of successful instruction.

### **Why Learning Interest Exerts Particular Influence in Practice-Oriented Learning**

The educational significance of learning interest becomes considerably more pronounced when viewed through the pedagogical characteristics of vocational education. Unlike conventional academic instruction, where learning outcomes are frequently assessed through written examinations emphasizing conceptual understanding, vocational education requires students to demonstrate competence through authentic performance. Food Processing and Presentation is fundamentally a practice-oriented subject in which successful learning depends upon the integration of technical knowledge, procedural accuracy, creativity, hygiene awareness, time management, communication, and professional discipline. These competencies cannot be developed through passive observation or short-term memorization. Instead, they emerge through repeated participation in authentic learning activities that demand sustained attention, deliberate practice, and continuous refinement of performance. Within this educational context, learning interest assumes a pivotal role because it determines whether students remain cognitively and behaviorally engaged throughout what is often a demanding and iterative learning process.

This observation challenges a common assumption in vocational education that increasing instructional time or expanding practical sessions will automatically improve students' competence. Practical exposure alone does not guarantee meaningful learning if students participate merely to complete required tasks without genuine cognitive engagement. Experiential learning theory has consistently argued that experience becomes educationally valuable only when learners actively reflect upon and make sense of their experiences (Chan, 2023; Esser et al., 2024; Abdallah, 2026). Students who demonstrate stronger learning interest are more likely to question instructional demonstrations, compare alternative techniques, evaluate the quality of their own products, and incorporate feedback into subsequent performances. These reflective behaviours transform practical activities into opportunities for knowledge construction rather than simple task completion. Consequently, the contribution of learning interest extends beyond motivating participation; it influences how students interpret and internalize practical experiences that ultimately shape vocational competence.

This mechanism is particularly relevant in culinary education because the acquisition of professional expertise depends upon incremental improvement rather than immediate success. Preparing food that satisfies professional standards requires repeated experimentation, correction of errors, sensory evaluation, and adaptation to varying ingredients, equipment, and production conditions. Such learning inevitably involves mistakes, imperfect outcomes, and occasional failure. Students with well-developed learning interest are generally more willing to tolerate these challenges because they perceive difficulties as integral components of mastery rather than obstacles to be avoided. This interpretation aligns with Boonma (2025) work on growth mindset, which suggests that learners who embrace challenges are more likely to persist and improve their competence over time. Although learning interest and growth mindset represent distinct psychological constructs, both facilitate adaptive responses to learning difficulties by encouraging persistence rather than withdrawal. In practical learning environments where improvement depends upon continuous rehearsal, this persistence becomes indispensable.

The moderate relationship identified in this study further suggests that learning interest should be understood as an important, yet incomplete, contributor to vocational achievement. From a statistical perspective, the observed association indicates that learning interest explains only part of the variation in students' academic performance, leaving substantial room for other determinants. Rather than weakening the educational significance of the findings, this outcome reflects the inherently multidimensional nature of vocational learning. Competence in culinary education develops through interactions among learner characteristics, instructional quality, learning facilities, assessment practices, teacher expertise, peer collaboration, and opportunities for authentic workplace simulation. Vocational education therefore differs from simplified models of academic achievement that seek single-factor explanations for learning success. As argued by Karlen & Hertel (2024), professional expertise emerges through the integration of theoretical knowledge, practical experience, and self-regulated learning within authentic contexts. Learning interest contributes to this integration by sustaining engagement, but it cannot substitute for high-quality instruction or supportive learning environments (Bransen et al., 2022; Isbej et al., 2025).

The present findings therefore caution against educational interventions that attempt to improve learning outcomes exclusively by increasing students' motivation while neglecting broader pedagogical conditions. Educational reforms frequently focus on encouraging students to become more motivated, disciplined, or enthusiastic, implicitly assuming that responsibility for learning resides primarily with the learner. Such perspectives overlook the reciprocal nature of engagement. Students' interest is continuously shaped by instructional experiences, classroom climate, assessment practices, and opportunities to experience competence. Motivation flourishes when learning environments satisfy learners' psychological needs for autonomy, competence, and relatedness. This theoretical perspective suggests that learning interest should be viewed not merely as an individual disposition but also as an outcome of effective educational design. Teachers who provide meaningful choices, constructive feedback, authentic practical challenges, and collaborative learning opportunities are more likely to cultivate enduring interest than those relying predominantly on procedural instruction or repetitive demonstrations.

These considerations are especially important as vocational education increasingly seeks to prepare graduates for industries characterized by rapid technological development and evolving professional expectations. Culinary professionals today are expected not only to execute standardized procedures but also to demonstrate creativity, adaptability, problem-

solving ability, and lifelong learning capacity. Such attributes cannot be cultivated solely through technical instruction. They require educational environments that encourage curiosity, experimentation, and continuous professional growth. Emphasizes that vocational graduates must possess adaptive competencies enabling them to respond effectively to changing workplace demands rather than merely reproduce existing procedures. From this perspective, fostering learning interest contributes not only to immediate academic achievement but also to developing the dispositions necessary for sustained professional development throughout graduates' careers.

### **Pedagogical and Institutional Implications for Vocational Education**

An important implication emerging from the present study is that improving vocational learning outcomes cannot rely exclusively on strengthening students' individual motivation. Although learning interest contributes meaningfully to academic achievement, interest itself is neither innate nor fixed. Rather, it is continuously shaped by the quality of instructional experiences that students encounter throughout their education. This perspective shifts the focus from asking why some students lack interest toward examining how schools create or fail to create learning environments that stimulate sustained engagement. Such a shift is particularly important within vocational education because practical competence develops through continuous interaction between learners, instructors, learning resources, and authentic workplace experiences. Consequently, efforts to improve learning outcomes should prioritize the design of learning environments capable of fostering enduring interest rather than assuming that motivation is solely the responsibility of individual students.

For teachers, the findings underscore the need to reconsider the dominant instructional orientation commonly found in practical vocational classrooms. Practical sessions frequently emphasize procedural compliance, where students are expected to imitate demonstrations and reproduce standardized techniques with minimal opportunity for exploration or independent decision-making. While procedural accuracy remains essential for developing occupational competence, an overreliance on teacher-directed instruction may inadvertently limit students' intellectual engagement by reducing practical learning to routine task completion. Educational research increasingly suggests that meaningful learning occurs when students actively construct understanding through inquiry, reflection, and problem solving rather than through mechanical repetition alone (Andrews et al., 2023; Bryce & Blown, 2024). In culinary education, this implies that practical activities should extend beyond demonstrating recipes toward encouraging students to justify ingredient selection, evaluate alternative preparation techniques, diagnose production errors, and critically assess the quality of finished products. Such learning experiences stimulate curiosity because they position students as active participants in professional reasoning rather than passive executors of predetermined procedures.

This pedagogical shift also reflects broader developments in competency-based education. Contemporary conceptions of vocational competence no longer define professional expertise exclusively in terms of technical proficiency. Instead, competence encompasses adaptive expertise the ability to apply knowledge flexibly, respond effectively to unfamiliar situations, and continuously improve professional performance throughout one's career. Culinary professionals increasingly operate in environments characterized by changing consumer preferences, technological innovation, sustainability concerns, and evolving food safety standards. Consequently, vocational schools should prepare students not only to execute established procedures but also to think critically, solve problems creatively, and engage in

continuous professional learning. Learning interest becomes particularly valuable within this framework because students who remain intellectually curious are more likely to embrace innovation, seek new knowledge, and adapt to changing professional demands. Thus, cultivating interest contributes directly to workforce readiness by supporting the development of adaptive rather than routine expertise.

The present findings likewise have important implications for curriculum implementation. Although competency-based curricula emphasize authentic performance and practical skill development, curriculum effectiveness depends largely on how learning experiences are enacted within classrooms. A curriculum may specify relevant competencies, yet students are unlikely to develop those competencies if instructional activities fail to generate meaningful engagement. Effective learning occurs when intended learning outcomes, teaching activities, and assessment practices are constructively aligned. Applying this principle to culinary education suggests that assessments should evaluate not only technical accuracy but also students' capacity for reflection, creativity, collaboration, and problem solving. Similarly, learning activities should progressively challenge students with increasingly authentic culinary scenarios that require the application of integrated knowledge rather than isolated procedural skills. When curriculum, pedagogy, and assessment are coherently aligned, students are more likely to perceive learning as purposeful and professionally relevant, thereby strengthening their interest and engagement.

Institutional support represents another critical dimension of these findings. Teachers' efforts to cultivate learning interest are unlikely to achieve sustainable impact if schools fail to provide appropriate structural conditions for effective vocational learning. Practical instruction requires adequate laboratory facilities, modern equipment, sufficient ingredients, manageable class sizes, and opportunities for authentic workplace simulation. Emphasizes that high-performing vocational education systems consistently combine learner-centred pedagogy with substantial institutional investment in practical learning environments. Vocational schools should function as authentic professional communities in which students experience workplace cultures rather than merely study occupational content. These recommendations imply that increasing students' learning interest requires organizational commitment extending beyond individual classroom practices. School leaders therefore play a strategic role in creating institutional conditions that allow teachers to implement engaging and professionally meaningful learning experiences.

Equally important is the recognition that learning interest should become an explicit indicator of educational quality within vocational schools. Educational evaluation frequently focuses on examination scores, competency certification, and graduation rates while paying comparatively little attention to students' psychological engagement with learning. Although academic achievement remains an essential outcome, it represents only one dimension of educational effectiveness. Students who complete vocational education with adequate technical skills but limited enthusiasm for continued learning may encounter difficulties adapting to rapidly changing professional environments after graduation. Monitoring students' learning interest through regular classroom evaluation, learner feedback, and reflective assessment could therefore provide valuable information regarding the effectiveness of instructional practices before declining motivation manifests as lower academic performance or disengagement. Such formative evaluation aligns with contemporary quality assurance frameworks that increasingly recognize learner engagement as a central indicator of educational excellence.

Beyond the institutional level, the findings also carry implications for educational policy. Many vocational education reforms have concentrated on curriculum modernization, industry partnerships, digital technologies, and competency certification. While these initiatives are undoubtedly important, they often devote comparatively less attention to the psychological conditions that enable students to benefit fully from such reforms. Policies aimed at strengthening vocational education should therefore incorporate teacher professional development focused on learner engagement, active learning strategies, authentic assessment, and motivational pedagogy. Professional learning programs should equip teachers not only with updated technical knowledge but also with pedagogical expertise capable of transforming practical instruction into intellectually stimulating educational experiences. Such an approach recognizes that educational innovation depends as much upon instructional practice as upon curriculum reform or infrastructure investment.

## Conclusion

This study demonstrates that learning interest constitutes a meaningful psychological factor associated with students' learning outcomes in the Food Processing and Presentation subject among Grade XI Culinary students at SMK Negeri 1 Ampek Angkek. More importantly, the findings highlight that the educational value of learning interest extends beyond increasing students' enthusiasm for classroom activities; it facilitates sustained cognitive, behavioral, and emotional engagement that is essential for developing vocational competence in practice-oriented learning environments. Given that culinary education requires students to integrate theoretical understanding with repeated practical application, learning interest functions as an important condition that encourages active participation, persistence, reflective practice, and continuous skill improvement. At the same time, the moderate relationship observed in this study indicates that learning outcomes are shaped by a broader constellation of learner, instructional, and contextual factors, suggesting that improving academic achievement requires comprehensive educational strategies rather than interventions targeting motivation alone. Therefore, vocational schools should complement curriculum and technical training with learner-centered pedagogical approaches that cultivate students' interest through authentic practical experiences, meaningful feedback, collaborative learning, and opportunities for professional problem-solving. By positioning learning interest as an integral component of competency development rather than merely an individual characteristic, this study contributes to the growing body of research emphasizing the importance of psychological engagement in vocational education and provides practical evidence for teachers, school leaders, and policymakers seeking to enhance both learning quality and workforce readiness in culinary education.

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