THE INFLUENCE OF INTEREST AND LEARNING READINESS ON LEARNING ACTIVITIES OF HIGH SCHOOL STUDENTS IN CHEMISTRY ONLINE LEARNING IN SOUTH SULAWESI

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ABSTRACT
This study aims to determine the effect of students’ interest and readiness to learn on the learning activities of high school students in online chemistry learning in South Sulawesi. This research is quantitative research using the ex post facto method. The population of this research is all students of high school student majoring in science in South Sulawesi Province. The research sample was 402 students obtained by using two stage clustering random sampling method. Research data collection was carried out using questionnaires on learning interest, readiness to learn and learning activities of students during online learning of chemistry. Instrument were validated by using corrected item total correlation value. The reliability test used the Cronbach Alpha coefficient on the learning interest variable of 0.804, the learning readiness variable was 0.721 and the learning activity variable was 0.753 with a very high category. The data analysis technique used was path analysis. The findings indicated that interest in learning had a significant effect, accounting for 53.1% and 52.3% at a 5% significance level. Additionally, learning readiness demonstrated a 29% influence on learning activities at the same significance level. When combined, the total influence of both interest in learning and learning readiness on high school students’ learning activities reached 67.6% at a 5% significance level. Overall, the study concluded that the impact of interest in learning and readiness to learn on learning activities was notably high.

KEYWORDS
Learning interest, learning readiness, learning activity, online learning

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INTRODUCTION

In the field of education, learning activities play a central role in the progress of learners. Educational variables, performance, and strategies are essential aspects evaluated in learning activities (Al-BiRuNi, 2021; Alhassan, 2019; De Bruyckere & Kirschner, 2017). Teaching and Learning Activities (KBM) become an interactive process between teachers and learners to achieve learning objectives (Cipta, n.d.). However, the Covid-19 pandemic in 2020 caused a drastic change in learning, forcing a shift from face-to-face to online, with significant impacts, especially in Indonesia.

Amid the challenges of the pandemic, teachers, parents, and learners faced significant changes in learning, with schools closed and education shifted to homes (C. Lin et al., 2020). Chemistry education also underwent adjustments, with the implementation of online learning bringing various changes in teaching methods, teacher-learner interactions, and learning assessments. In this research context, online learning refers to learning methods mediated by the internet (Rapanta et al., 2020).

Learners' activities, including conscious activities like note-taking, listening to explanations, discussing, and completing assignments, underwent significant transformation during online learning. Learning interest, which is an individual's tendency to enjoy learning without coercion, becomes a key factor influenced by changes in learning methods (S.-H. Lin & Huang, 2016). In the case of online chemistry learning, there is a decrease in learners' interest influenced by various factors, including limited facilities and parental support.

Apart from learning interest, learning readiness also plays a crucial role in determining the success of online learning. Learning readiness involves the psychological and technical preparation of learners to engage in online learning (Pete et al., 2017). Learners' readiness influences their learning activities, evident in low participation, delayed task submissions, and learners' discomfort in online interactions.

These changes not only impact learners' learning activities but also concern the well-being of teachers. Teachers face challenges in assessing learners' understanding, delivering materials effectively, and maintaining participation levels. Therefore, in-depth research is needed to understand the extent to which learners' learning interest and readiness influence learning activities during online chemistry learning. Thus, concrete solutions can be developed to enhance learning effectiveness amid the pandemic.

Based on the background of the problem, the researcher formulates the following research questions: 1. To what extent does the direct influence of learning interest affect the learning readiness of high school learners during online chemistry learning in South Sulawesi Province? 2. To what extent does the direct influence of learning interest affect the learning activities of high school learners during online chemistry learning in South Sulawesi? 3. To what extent does the direct influence of learning readiness affect the learning activities of high school learners during online chemistry learning in South Sulawesi Province? 4. To what extent is the total influence of learning interest and learning readiness on the learning activities of high school learners during online chemistry learning in South Sulawesi Province?
This research explores the variables of learning activities, learning interest, and learning readiness in the context of online learning during the Covid-19 pandemic. Previous studies have observed these variables separately, but there is limited research integrating all three, especially in the context of online learning. Relevant examples of previous research include the study by (Kpolovie et al., 2014), which found a significant influence of learning interest on the academic performance of learners. Rozai et al., (2017) focused on the relationship between learning interest and geography learning activities of learners. Syifa, (2021) examined online learning readiness and learning motivation's impact on the learning activities of new students. Similarly, the research by BEAUTY et al., (2021) investigated the influence of learning interest and learning motivation on the activities and readiness of learners. Although these studies share similarities in variables, methods, and subjects, this research attempts to fill the knowledge gap by combining the variables of learning interest, learning readiness, and learning activities in the context of online chemistry learning.

Based on the stated research questions, this study aims to: 1. Determine the extent of the influence of learning interest on the learning readiness of high school learners during online chemistry learning in South Sulawesi. 2. Determine the extent of the influence of learning interest on the learning activities of high school learners during online chemistry learning in South Sulawesi. 3. Determine the extent of the influence of learning readiness on the learning activities of high school learners during online chemistry learning in South Sulawesi Province. 4. Determine the extent of the total influence of learning interest and learning readiness on the learning activities of high school learners during online chemistry learning in South Sulawesi Province.

**RESEARCH METHOD**

This research employs a quantitative method with an ex post facto design. It was conducted in 32 high schools in South Sulawesi during the second semester of the academic year 2021/2022. The research population includes high school students in South Sulawesi who participated in online learning during the pandemic. The sample was selected using two-stage cluster random sampling, involving 110 schools and 384 students.

The research variables include learning interest (X1), learning readiness (X2), and learning activities (Y). Data collection instruments consist of a questionnaire tested for validity and reliability. Data analysis includes normality testing, multicollinearity testing, heteroskedasticity testing, descriptive analysis, and path analysis (Susanto et al., 2019). Path analysis is used to determine the direct and indirect influences among variables. The results of validity and reliability tests indicate that the instruments are reliable. Analysis requirement tests show that the data meet assumptions. Path analysis reveals a positive and significant relationship between learning interest, learning readiness, and the learning activities of students.
RESULT AND DISCUSSION

A. Descriptive Analysis

1. Variable of Student Learning Interest (X₁)

Learning Interest Data from students was obtained through the distribution of questionnaires to 402 high school students in South Sulawesi, consisting of 12 statements using a Likert scale that has undergone validity and reliability testing. Learning interest has 4 indicators: feelings of pleasure, involvement, interest, and attention. The results of descriptive analysis and recapitulation of the learning interest variable (X₁) indicators can be seen in Table 1.

<table>
<thead>
<tr>
<th>Number of Respondents (N)</th>
<th>402</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>44,17</td>
</tr>
<tr>
<td>Median</td>
<td>44</td>
</tr>
<tr>
<td>Mode</td>
<td>45</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>5,941</td>
</tr>
<tr>
<td>Highest Score</td>
<td>59</td>
</tr>
<tr>
<td>Lowest Score</td>
<td>25</td>
</tr>
</tbody>
</table>

Table 1 presents the descriptive analysis results of the learning interest variable. The obtained data range from a minimum score of 25 to a maximum score of 59. The mean is 44.17, standard deviation is 5.941, median is 44, and mode is 45. The data distribution shows that the mean, median, and mode scores are close, indicating a tendency for normal distribution. Here is the recapitulation of the learning interest variable for each indicator, as shown in Table 2.

<table>
<thead>
<tr>
<th>No</th>
<th>Indicator</th>
<th>Score</th>
<th>Max Score</th>
<th>Min Score</th>
<th>Mean Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pleasurable Feelings</td>
<td>5682</td>
<td>8040</td>
<td>1608</td>
<td>3.53</td>
<td>Good</td>
</tr>
<tr>
<td>2</td>
<td>Interest</td>
<td>3058</td>
<td>4020</td>
<td>804</td>
<td>3.80</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>Involvement</td>
<td>4486</td>
<td>6030</td>
<td>1206</td>
<td>3.72</td>
<td>Good</td>
</tr>
<tr>
<td>4</td>
<td>Attention</td>
<td>4536</td>
<td>6030</td>
<td>1206</td>
<td>3.76</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>17762</td>
<td>24120</td>
<td>4824</td>
<td>14,82</td>
<td></td>
</tr>
</tbody>
</table>

| Mean | 3,70 | Good |

Table 2. Recapitulation of Learning Interest (X₁) Variable Indicators

Source: Processed primary data, 2022 (Appendix 2, pp. 120-124)

Based on Table 2, the recapitulation of the Learning Interest Variable (X₁) dimensions shows that the average dimension value is in the "good" category, with a value of 3.70. This indicates that students' learning interest in learning is good. The interest indicator, with an average score of 3.80, has the largest influence on students' learning interest in learning.

2. Learning Readiness Variable of Students (X₂)

Learning readiness data of students, consisting of statements using a Likert scale that has undergone validity and reliability testing, has three indicators:
psychological readiness, physical readiness, and material readiness. Descriptive analysis of the learning readiness variable can be seen in Table 3.

**Table 3.** Descriptive Analysis of the Learning Readiness Variable \((X_2)\)

<table>
<thead>
<tr>
<th>Learning Readiness ((X_2))</th>
<th>Number of Respondents ((N))</th>
<th>402</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>35.99</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Mode</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>3.652</td>
<td></td>
</tr>
<tr>
<td>Highest Score</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Lowest Score</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>

Table 3 presents the descriptive analysis results of the learning readiness variable. The obtained data range from a minimum score of 26 to a maximum score of 47. The mean is 35.99, standard deviation is 3.652, median is 36, and mode is 35. The data distribution indicates a tendency for normal distribution. Here is the recapitulation of the learning readiness variable for each indicator, as shown in Table 4.

**Table 4.** Recapitulation of Learning Readiness Variable Indicators \((X_2)\)

<table>
<thead>
<tr>
<th>No</th>
<th>Indicator</th>
<th>Score</th>
<th>Max Score</th>
<th>Min Score</th>
<th>Mean Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Physical Readiness</td>
<td>5297</td>
<td>8040</td>
<td>1608</td>
<td>3.29</td>
<td>Good</td>
</tr>
<tr>
<td>2</td>
<td>Psychological Readiness</td>
<td>5696</td>
<td>8040</td>
<td>1608</td>
<td>3.54</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>Material Readiness</td>
<td>3475</td>
<td>4020</td>
<td>804</td>
<td>4.32</td>
<td>Very Good</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>14468</td>
<td>20100</td>
<td>4020</td>
<td>11,16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>3,72</td>
<td></td>
<td></td>
<td></td>
<td>Good</td>
</tr>
</tbody>
</table>

Based on the results in Table 4, the learning readiness variable has three indicators with the following results: physical readiness has an average score of 3.29, psychological readiness has an average score of 3.54, and material readiness has the highest average score of 4.32. The overall average score for the learning readiness variable is 3.72, categorized as "good." This indicates that students' learning readiness during learning is good.

3. Learning Activities Variable \((Y)\)

Data on students' learning activities, consisting of statements using a Likert scale that has undergone validity and reliability testing, has five indicators: visual, oral, listening, writing, and mental. Descriptive analysis of the learning activities variable can be seen in Table 5.

**Table 5.** Descriptive Analysis of the Learning Activities \((Y)\) Variable

<table>
<thead>
<tr>
<th>Learning Activities ((Y))</th>
<th>Number of Respondents ((N))</th>
<th>402</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>51.32</td>
<td></td>
</tr>
</tbody>
</table>

The Influence of Interest and Learning Readiness on Learning Activities of High School Students In Chemistry Online Learning In South Sulawesi

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Table 5 presents the descriptive analysis results of the learning activities variable. The obtained data range from a minimum score of 30 to a maximum score of 67. The mean is 51.32, standard deviation is 6.288, median is 51, and mode is 46. The data distribution indicates a tendency for normal distribution. Here is the recapitulation of the learning activities variable for each indicator, as shown in Table 6.

Table 6. Recapitulation of Learning Activities (Y) Variable Indicators

<table>
<thead>
<tr>
<th>No</th>
<th>Indicator</th>
<th>Score</th>
<th>Max Score</th>
<th>Min Score</th>
<th>Mean Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Visual</td>
<td>4114</td>
<td>6030</td>
<td>1206</td>
<td>3.41</td>
<td>Good</td>
</tr>
<tr>
<td>2</td>
<td>Oral</td>
<td>5781</td>
<td>8040</td>
<td>1608</td>
<td>3.60</td>
<td>Good</td>
</tr>
<tr>
<td>3</td>
<td>Listening</td>
<td>3015</td>
<td>4020</td>
<td>804</td>
<td>3.75</td>
<td>Good</td>
</tr>
<tr>
<td>4</td>
<td>Writing</td>
<td>4949</td>
<td>6030</td>
<td>1206</td>
<td>4.10</td>
<td>Very Good</td>
</tr>
<tr>
<td>5</td>
<td>Mental</td>
<td>2494</td>
<td>4020</td>
<td>804</td>
<td>3.10</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>20353</td>
<td>28140</td>
<td>5628</td>
<td>17.96</td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Recapitulation of Learning Activities (Y) Variable Indicators

Based on the data in Table 6, the average score for the learning activities variable is 3.59, categorized as "good." This indicates that students' learning activities during learning are good. Writing is the indicator with the highest average score, indicating that note-taking is the primary learning activity during the ongoing learning process, while the lowest is the mental indicator with a score of 3.10, indicating that students' further activities in remembering lessons are still lacking.

B. Assumption Test Analysis

1. Normality Test

The Normality Test is used to determine whether a sample is normally distributed or not. The analysis in this study measures ratio-scaled data using parametric statistical methods, so the normality requirement must be met, meaning the data should come from a normal distribution. In this study, the normality test is conducted using the One Sample Kolmogorov-Smirnov Test. The test uses a significance level (α) of 5% or 0.05, and the criteria are that if the significance value (Asymp. Sig 2-tailed) is greater than 0.05, the data is considered normally distributed, and if it is less than 0.05, the data is considered non-normally distributed. The normality test results for the residual data using the One Sample Kolmogorov-Smirnov Test in SPSS v.22.0 can be seen in Table 7 below:

Table 7. Normality Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Kolmogorov-Smirnov</th>
<th>Asymp.Sig</th>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
</table>

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Based on Table 7 above, the normality test results for the variables Interest in Learning (X1), Preparedness for Learning (X2), and Learning Activity (Y) using the One Sample Kolmogorov-Smirnov test indicate that the significance (Asymp.sig) is greater than 0.05, indicating that the data is normally distributed. Normality testing can also be observed from the Normal Probability Plot graph in Figure 7. The testing criterion is that if the data is spread around the diagonal line, then the null hypothesis (Ho) is accepted, meaning the data is normally distributed. If the data spreads away from the diagonal line, it indicates non-normal distribution.

The results of the normality test using SPSS 26.0 are shown in Figure 1.

![Normal Probability Plot](image)

Figure 1. Normal Probability Plot

2. Multicollinearity Test
Multicollinearity among exogenous variables can be assessed through tolerance and variance inflation factor (VIF) values. Multicollinearity may occur if VIF is greater than 10 (Steven, 2009:75). The results of the multicollinearity test using SPSS can be seen in Table 8.

<table>
<thead>
<tr>
<th>Exogenous Variable</th>
<th>VIF Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Interest</td>
<td>1.392</td>
</tr>
<tr>
<td>Learning Readiness</td>
<td>1.392</td>
</tr>
</tbody>
</table>

Based on the results of the multicollinearity test, with VIF values < 10, it can be concluded that there is no multicollinearity.

3. Heteroskedasticity Test
To determine heteroskedasticity, the Glejser test can be used. The decision criterion for this test is if the significance value is ≥ 0.05, it can be concluded that there is no heteroskedasticity. Conversely, if the significance value is < 0.05, it can be concluded that there is heteroskedasticity. The results of the heteroskedasticity test can be seen in Table 9.

<table>
<thead>
<tr>
<th>Exogenous Variable</th>
<th>VIF Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Interest</td>
<td>1.392</td>
</tr>
<tr>
<td>Learning Readiness</td>
<td>1.392</td>
</tr>
</tbody>
</table>

The Influence of Interest and Learning Readiness on Learning Activities of High School Students In Chemistry Online Learning In South Sulawesi
Table 9. Heteroskedasticity Test Results

<table>
<thead>
<tr>
<th>Model</th>
<th>t</th>
<th>Sig</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.909</td>
<td>0.000</td>
<td>No Heteroskedasticity</td>
</tr>
<tr>
<td>Minat Belajar</td>
<td>0.895</td>
<td>0.372</td>
<td>No Heteroskedasticity</td>
</tr>
<tr>
<td>Kesiapan Belajar</td>
<td>0.764</td>
<td>0.445</td>
<td>No Heteroskedasticity</td>
</tr>
</tbody>
</table>

Based on the results of the heteroskedasticity test, the significance value (Sig) is ≥ 0.05, indicating no heteroskedasticity.

C. Path Analysis

1. Regression Analysis Results

The results of the calculation to obtain the regression coefficients of Interest in Learning (X1) on Preparedness for Learning (X2) are shown in Table 10.

Table 10. Regression Coefficients of Interest in Learning (X1) on Preparedness for Learning (X2)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficient</th>
<th>Standardize Coefficient</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>18.905</td>
<td>0.983</td>
<td>0.000</td>
</tr>
<tr>
<td>Learning Interest</td>
<td>0.298</td>
<td>0.024</td>
<td>0.531</td>
</tr>
</tbody>
</table>

In Table 10, the coefficients show the beta or regression coefficient of interest in learning (X1) on preparedness for learning (X2) is 0.531, with a significance value (Sig.) of 0.000, indicating a significant regression coefficient.

Multiple linear regression is used to examine the influence of variables X1 and X2 on variable Y. For the Structural Equation, the regression coefficients between exogenous variables X1 and X2 on Y are sought, and the results can be seen in Table 11.

Table 11. Regression Coefficients of Interest in Learning (X1) and Preparedness for Learning (X2) on Learning Activity (Y)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficient</th>
<th>Standardize Coefficient</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>9.873</td>
<td>2.013</td>
<td></td>
</tr>
<tr>
<td>Learning Interest</td>
<td>0.529</td>
<td>0.041</td>
<td>0.523</td>
</tr>
<tr>
<td>Learning Readiness</td>
<td>0.522</td>
<td>0.074</td>
<td>0.290</td>
</tr>
</tbody>
</table>

Dependent Variable: Learning Activity (Y)

Source: Processed Data using SPSS v.26.0

In the coefficients table, the beta values or regression coefficients of interest in learning (X1) on learning activity (Y) and the preparedness for learning (X2) on learning activity (Y) are 0.523 and 0.290, respectively. The significance value (Sig.) is 0.000, indicating significant regression coefficients.

2. Coefficient of Determination ($R^2$)
Coefficient of Determination ($R^2$) is used to determine the percentage of the partial and simultaneous effects of interest in learning ($X_1$), preparedness for learning ($X_2$), and learning activity ($Y$). The results of the coefficient of determination test can be seen in Table 12.

**Table 12. Coefficient of Determination**

<table>
<thead>
<tr>
<th>Model</th>
<th>$R$</th>
<th>$R^2$</th>
<th>Adjusted $R$ Square</th>
<th>Std. Error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0.721</td>
<td>0.520</td>
<td>0.517</td>
<td>4.18123</td>
</tr>
</tbody>
</table>

Predictors: (Constant), Learning Readiness, Learning Interest
Dependent Variable: Learning Activity

The calculation using SPSS shows that $R^2$ or the coefficient of determination is 0.520.

$$\beta_{x_1x_2} = 0.531$$

**Figure 2. Path Influence Coefficients $X_1$, $X_2$ and $Y$**

Based on the results of the multiple linear regression equation test with two predictors, as seen in the beta coefficient values, for the variable interest in learning ($X_1$), it is 0.523, and for the variable preparedness for learning ($X_2$), it is 0.290. In Figure 2, it can be explained as follows:

1. The path coefficient of the interest in learning variable ($X_1$) on preparedness for learning ($X_2$) is positive, indicating that higher interest in learning leads to higher preparedness for learning among students. The regression coefficient value of $X_1$ is 0.531, meaning that an increase in interest in learning results in a 0.531 increase in learning activity.

2. The regression coefficient of the interest in learning variable ($X_1$) is positive, meaning that higher interest in learning leads to higher learning activity among students. The regression coefficient value of $X_1$ is 0.523, meaning that an increase in interest in learning results in a 0.523 increase in learning activity.

3. The regression coefficient of the preparedness for learning variable ($X_2$) is positive, meaning that higher preparedness for learning leads to higher learning activity among students. The regression coefficient value of $X_2$ is 0.290, meaning that an increase in preparedness for learning results in a 0.290 increase in learning activity.

**Total Influence**

There is a direct and indirect influence of the interest in learning variable on learning activity through preparedness for learning.
a. The direct influence of interest in learning on learning activity is 0.523 or 52.3%.

b. The indirect influence of interest in learning on learning activity through preparedness for learning is $0.531 \times 0.290 = 0.153$.

c. The total influence of interest in learning on learning activity through preparedness for learning is $0.523 + 0.153 = 0.676$ or 67.6%.

Based on these results, the direct and indirect effects of interest in learning on learning activity through preparedness for learning are smaller than the direct effect alone.

D. Hypothesis Test

1. Hypothesis Test 1

The first hypothesis test aims to determine the relationship between students' learning interest and their learning readiness during online chemistry learning. The test results for the first hypothesis are presented in Table 13.

<table>
<thead>
<tr>
<th>Model</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>19.122</td>
<td>0.000</td>
</tr>
<tr>
<td>Learning Readiness</td>
<td>12.528</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The first hypothesis test indicates a significant influence of learning interest on learning readiness. The critical $t$-value is 1.65. The results show that the calculated $t$-value (12.528) is greater than the critical $t$-value (1.65). The significance value (0.00) is also less than 0.05. Therefore, with the rejection of the null hypothesis ($H_0$) and acceptance of the alternative hypothesis ($H_1$), it can be concluded that there is a significant positive partial influence of learning interest on learning readiness.

2. Hypothesis Test 2

The second hypothesis test aims to investigate the influence of students' learning interest on their learning activities during online chemistry learning. The results are presented in Table 14.

<table>
<thead>
<tr>
<th>Model</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>4.906</td>
<td>0.000</td>
</tr>
<tr>
<td>Learning Interest</td>
<td>12.785</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The second hypothesis test indicates a significant influence of learning interest on learning activities. The critical $t$-value is 1.65, and the calculated $t$-value (12.785) is greater than the critical value. The significance value (0.00) is less than 0.05. Thus, with the rejection of $H_0$ and acceptance of $H_1$, it is concluded that there is a significant positive partial influence of learning interest on students' learning activities during online chemistry learning.

3. Hypothesis Test 3
The third hypothesis test aims to determine the influence of students’ learning readiness on their learning activities during online chemistry learning. The results are presented in Table 15.

Table 15. Results of t-Test for Learning Readiness (X₂) on Learning Activities (Y)

<table>
<thead>
<tr>
<th>Model</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>4.906</td>
<td>0.000</td>
</tr>
<tr>
<td>Learning Readiness</td>
<td>7.089</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The results indicate a significant influence of learning readiness on learning activities. The critical t-value is 1.65, and the calculated t-value (7.089) is greater than the critical value. The significance value (0.000) is less than 0.05. Therefore, with the rejection of H₀ and acceptance of H₁, it is concluded that there is a significant positive partial influence of learning readiness on students' learning activities during online chemistry learning.

4. Hypothesis Test 4

The F-test aims to examine the joint influence of all exogenous variables on the endogenous variable (Ghozali, 2016). The results are presented in Table 16.

Table 16. Uji F Statistik Anova

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>7544,384</td>
<td>2</td>
<td>3772,192</td>
<td>215,767</td>
<td>0.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>6975,601</td>
<td>399</td>
<td>17,483</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14519,985</td>
<td>401</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Learning Activities in Chemistry (Y)
b. Predictors: (Constant), X₂ (Learning Readiness), X₁ (Learning Interest)

The simultaneous F-test shows a significance value of 0.000, which is less than 0.05. This indicates the rejection of H₀ and acceptance of H₁, meaning that all independent variables, namely learning interest (X₁) and learning readiness (X₂), jointly have a significant and simultaneous influence on the variable learning activities (Y) of high school students during online chemistry learning.

E. Discussions

The main objective of this research is to determine the influence of learning interest and learning readiness on learning activities in the online learning process of chemistry for high school students majoring in science in South Sulawesi Province.

1. Influence of learning interest on learning readiness of students during online chemistry learning:
This study measured four indicators of learning interest during online chemistry learning: feelings of enjoyment, interest in learning, showing attention while learning, and involvement in the learning process (Lestari & Yudhanegara, 2017). The results showed that all four indicators fell into the good category, with a score of 3.70. This indicates that the learning interest of students during online chemistry learning is good, although there is room for improvement, especially in the indicator of enjoyment, which scored 3.53, the lowest among the indicators. This suggests that students' enjoyment during online chemistry learning is not optimal, possibly due to the change in teaching methods causing boredom and affecting students' learning interest.

The interest indicator achieved the highest average score of 3.80, categorized as good, the involvement indicator with an average score of 3.72, and the attention indicator with an average score of 3.76. These results indicate that all four indicators are in the good category. In summary, the learning interest during online chemistry learning is relatively good. The data obtained from the descriptive analysis ranged from a minimum score of 25 to a maximum score of 59. The average score was 44.17, with a standard deviation of 5.941, a median of 44, and a mode of 45. The data distribution indicates a tendency toward normal distribution.

Learning readiness can be described as the overall condition of students that makes them ready to respond to various situations before learning activities take place (Syifa, 2021). In this study, three indicators of learning readiness during online chemistry learning were measured: physical readiness, psychological readiness, and material readiness. Individual readiness consists of physical and psychological readiness. Good physical and psychological readiness during online learning will facilitate the smooth progress of online chemistry learning, allowing students to receive the material effectively (Akmal & Kumalasari, 2021). The results showed that the average scores for physical readiness and psychological readiness were 3.29 and 3.54, respectively. This indicates that students' physical and psychological readiness during online chemistry learning is not optimal. The shift to online learning requires students to adjust both physically and psychologically. This finding is supported by Joosten & Cusatis, (2020), stating that students' readiness for online learning requires more preparation than face-to-face learning, and cognitive, physical, and social limitations significantly affect students during online learning. The material readiness indicator obtained the highest average score of 4.32, categorized as excellent. This indicates that the material readiness of high school students in South Sulawesi Province for online learning is excellent. Material readiness includes the tools used by students in online learning, such as smartphones and laptops, which support students during online chemistry learning. This finding is supported by Barbara (2014), stating that students with smartphones and laptops will be helpful during online learning. The data obtained from the descriptive analysis ranged from a minimum score of 26 to a maximum score of 47. The average score was 35.99, with a standard deviation of 3.652, a median of 36, and a mode of 35. The data distribution indicates a tendency toward normal distribution. The descriptive analysis results obtained from the learning readiness variable, when compared with other variables, are not strongly supported, with the highest score being only 47.
Based on the calculation results with SPSS, the path coefficient of the learning interest variable on the learning readiness is 0.531. This means that for every increase in students' learning interest, the learning readiness variable will increase by 0.531. This value falls into the category of quite high, indicating that the learning interest and learning readiness of students have a positive and significant relationship. This is supported by hypothesis testing using the correlation coefficient with SPSS, which shows that t-value > t-table, i.e., 12.528 > 1.65, and a significance value < 0.05, i.e., 0.000. This result means that the hypothesis testing indicates that H0 is rejected and H1 is accepted, meaning that there is a significant influence of learning interest on students' learning readiness. This finding is reinforced by Beauty et al. (2021), stating that learning interest is closely related to learning readiness. Interest drives students' desires in learning, leading them to prepare for everything before the learning process takes place.

2. Influence of learning interest on learning activities of high school students during online chemistry learning:

Learning activities encompass all activities carried out by students in the learning process. Students' learning activities have five indicators: visual activities, oral activities, listening activities, writing activities, and mental activities. The overall average score for the learning activities variable obtained from the respondents was 3.59, categorized as good. The average scores for the visual, oral, listening, writing, and mental activity indicators were 3.41, 3.60, 3.75, 4.10, and 3.10, respectively. Among the five indicators, the writing activity indicator had the highest average score of 4.10, categorized as excellent. This indicates that students remain active in writing assignments and taking notes while listening to the teacher's explanation during online chemistry learning. The lowest score was obtained from the mental activity, which scored 3.10 (good). Mental activity indicates that students during online chemistry learning may have difficulty understanding and remembering the ongoing learning process.

The data obtained from the descriptive analysis ranged from a minimum score of 30 to a maximum score of 67. The average score was 51.32, with a standard deviation of 6.288, a median of 51, and a mode of 46. The data distribution indicates a tendency toward normal distribution. The descriptive analysis results obtained from the learning activities variable, when compared with other variables, are the highest in terms of average and highest scores, namely 51.32 and 67.

Based on the calculation results with SPSS, the regression coefficient for the learning interest variable on learning activities is 0.523. This means that for every increase in students' learning interest, the learning activities variable will increase by 0.523, assuming that the exogenous variable remains constant. This coefficient value falls into the category of quite high, indicating that learning interest has a quite significant effect on students' learning activities. This is supported by hypothesis testing using the t-test with SPSS, which shows that t-value < t-table, i.e., 12.785 > 1.650, and a significance value < 0.05, i.e., 0.000. This result means that hypothesis testing indicates that H0 is rejected and H1 is accepted, meaning that there is a significant influence of learning interest on students' learning activities. Therefore, to optimize students' learning activities, efforts should be made to

The Influence of Interest and Learning Readiness on Learning Activities of High School Students In Chemistry Online Learning In South Sulawesi
increase students' learning interest, making students feel happy, interested, and actively engaged in the online chemistry learning process. Interest etymologically comes from the English word "interest," meaning liking, desire, and attention to something. In the learning process, students must have an interest or inclination to participate in learning activities so that interest can encourage students to show participation, activity, and attention during online chemistry learning (Kurniawan, 2021).

Path analysis results show that learning interest contributes or influences 52.3% of high school students' learning activities during online chemistry learning. This means that every increase in students' learning interest will have a 52.3% impact on students' learning activities. This percentage is relatively high, indicating that interest has a significant influence on students' learning activities. This is supported by the statement made by Suci et al. (2020), stating that learning interest is one of the internal factors that influence students' learning activities. This finding is reinforced by Beauty et al. (2021), stating that factors influencing learning activities consist of two factors: internal factors and external factors. Internal factors include learning interest, motivation, and intelligence. Learning interest is a strong driver for learning activities to create concentration during the learning process. This result is supported by previous research; according to Besare, (2020), the influence of learning interest on learning activities is categorized as very high. According to Pangestu & Rohinah, (2018), from the research results, it is concluded that the higher the learning interest in the learning process, the greater its influence on students' learning activities. Thus, learning interest significantly influences students' learning activities during online chemistry learning.

3. Influence of learning readiness on learning activities of high school students during online chemistry learning

Based on the calculation results with SPSS, the regression coefficient for the learning readiness variable on learning activities is 0.290. This means that for every increase in students' learning readiness, the learning activities variable will increase by 0.290. The regression coefficient obtained is in the low category, indicating that the influence of learning readiness on students' learning activities is small. Hypothesis testing using the t-test with SPSS shows that t-value < t-table, i.e., 7.089 > 1.650. The significance value obtained is 0.000, which is smaller than 0.05. This result indicates that H0 is rejected and H1 is accepted, meaning that there is a significant influence of learning readiness on students' learning activities. The path analysis results show that learning interest contributes or influences 29% of high school students' learning activities during online chemistry learning. This means that every increase in students' learning readiness will have a 29% impact on students' learning activities. This finding is supported by the research of Syifa (2021), which states that students' learning readiness in online learning significantly influences learning activities. The research results of Pangestu & Rohinah, (2018) obtained a result that the influence of students' learning readiness on online learning activities is 55.8%, categorized as good. With learning readiness for a subject, students will be encouraged to pay more attention to that subject. In the learning process, learning readiness causes students to be more active, serious, and enthusiastic.
about learning. Learning that is full of readiness will produce satisfactory results, and conversely, learning will succeed if individuals are prepared to perform those actions (Thorndik, in Alwiyah & Imaniyati, 2018).

4. Total influence of learning interest and learning readiness on learning activities of high school students during online chemistry learning

The total influence of learning interest and learning readiness on learning activities is obtained from the total calculation of direct and indirect effects. Based on the data analysis, the direct effect value is 52.3%, and the indirect effect value is 15.3%, meaning that the overall total influence of the learning interest and learning readiness variables is 67.6%. This percentage is considered high, considering that there are still other factors or variables that can influence the learning activities of high school students in South Sulawesi during online chemistry learning. This is reinforced by the results of the simultaneous F test, which obtained a significance value of 0.000. The significance value obtained < 0.05 indicates that H0 is rejected and H1 is accepted, meaning that all independent variables, namely learning interest (X1) and learning readiness (X2), together have a significant and simultaneous effect on the learning activities variable (Y) of high school students during online chemistry learning.

CONCLUSION

Based on the results of the data analysis, the relationships among the variables of learning interest, learning readiness, and learning activities of students can be identified. The research findings can be summarized as follows: 1. The influence of learning interest on learning readiness of high school students in South Sulawesi Province is 53.1% at a significance level of 5%. 2. The influence of learning interest on learning activities of high school students in South Sulawesi Province is 52.3% at a significance level of 5%. 3. The influence of learning readiness on learning activities of high school students in South Sulawesi Province is 2.90% at a significance level of 5%. 4. The total influence of learning interest and learning readiness on learning activities of high school students in South Sulawesi Province is 67.6% at a significance level of 5%.

Based on the summarized research findings, the implications are as follows: 1. The research results indicate that learning interest during the learning process has a positive influence on the learning activities of students. Therefore, teachers are expected to enhance students' learning interest through the selection of suitable teaching methods during online learning to improve students' learning activities. 2. The research results show that learning readiness has a positive influence on learning activities. Therefore, teachers are encouraged to pay attention to students' learning readiness before starting the learning process. Good learning readiness will ensure that the learning process and students' learning activities in receiving the material are carried out effectively.

Based on these implications, the researcher provides some recommendations that are expected to be useful inputs, including: 1. Subsequent research is recommended to explore different populations and regions, aiming to provide a more specific understanding of the influence of learning interest and learning readiness on learning activities of high school students in South Sulawesi.
learning activities during online chemistry learning. 2. Subsequent research is suggested to expand the research model to identify other factors influencing students' learning activities.

REFERENCES


Lin, S.-H., & Huang, Y.-C. (2016). Examining charisma in relation to students’