Emotional Regulation Ability on Test Results: Factors Affecting Motivation and Learning Achievement

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Abstract. The ability to regulate emotions in the acceptance of test results can impact both the increase and decrease of motivation. Unfortunately, there has not been much research explaining this phenomenon. Therefore, this study aimed to examine the influence of emotions on the acceptance of test results on students’ learning motivation. This research used an ex post facto approach with a cause-and-effect correlation design. The population consisted of 300 students at SMP N 2 Kuta Selatan. Using purposive sampling, 30 students were involved as research samples. The research instrument consisted of 21 statements from the DAS questionnaire about test results, 20 statements about student motivation, and a formative test. Data were analyzed descriptively, using correlation statistics and paired sample t-tests. The research results showed that there was a significant relationship between the ability to manage depression, anxiety, and stress in the acceptance of test results. In addition, students with better emotional management skills tended to have positive motivation if their test results were disappointing. Meanwhile, students with low emotional abilities also had low motivation. For these affecting factors on students’ achievements, this study suggests a more holistic pedagogical approach and intervention as essential components in efforts to improve their learning achievement.

Keywords: academic emotion regulation, test results, motivation

Introduction
The ability to control academic emotions among English as a Foreign Language (EFL) students plays an important role in achieving better test results. To Gilar-Corbi et al., (2020), academic emotion becomes one of the important factors affecting learning outcomes.

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factors in the learning process to obtain the students’ test results. Academic emotion is an emotional ability that includes self-control, endurance when facing a problem, control of impulses, self-motivation, mood, empathy, and managing relationships with others (Prastiyo & Muzzamil, 2023). When considering emotions in an academic context, it's essential to recognize two key dimensions, including arousal and valence (Kuperman et al., 2014). Academic emotional valence, according to Tan et al., (2021) refers to whether a stimulus is perceived as pleasant or unpleasant, while academic emotional arousal describes the intensity of emotional response evoked by an academic stimulus. However, Brosch et al., (2010) underline that dimensions offer a comprehensive perspective on the emotional experiences within an educational setting, capturing both the qualitative and quantitative aspects of how individuals respond emotionally to academic stimuli. As a result, academic emotion processing ability can help the students handle any difficulties in any situation.

The way students manage their academic emotions can effectively regulate an individual's emotional state, facilitating the sorting of satisfaction and mood control. Central to positive social relationships is the adept control of one's mood. Proficiency in adjusting to others' moods and demonstrating empathy contributes to heightened emotional intelligence, enabling smoother adaptation to social interactions and environments. Students possessing strong emotional intelligence tend to foster better relationships with peers in grasping educational content. Conversely, not all students have the same level of emotional control as stated by Järvenoja & Järvelä (2009). The inability to regulate emotions in the context of learning activities can directly impact student academic performance.

Several previous studies on emotion regulation exist, with their findings serving as a reference for the statements above. Singh and Singh (2013) found evidence that there are six types of difficulties in emotion regulation affecting the academic performance of the subjects. Individuals facing greater difficulties in emotion regulation showed poor performance in academics. While certain writers contend that emotional intelligence encompasses various social and emotional skills, including self-motivation (Murad, 2021). Others assert that emotional intelligence abilities are limited to skills directly connecting emotions to cognition (Mayer & Salovey, 1995). This latter perspective excludes motivation as a component but recognizes it as a distinct yet related function. Niroomand et al., (2014) claim that motivation is a factor related to emotional intelligence but is not a part of the emotional intelligence construct. indicates that emotional changes are highly dependent on various factors, such as psychological factors, including student maturity.

Although the research findings highlight the importance of emotion regulation, there is no specific study investigating the relationship between students' emotions toward test results and their motivation levels. Therefore, this study focuses on exploring students' feelings about test results obtained after exams and examining the impact on their learning motivation. This research aims to provide a detailed explanation of the psychological conditions of students regarding exam results and their effects on motivation. Consequently, it is anticipated that the results of this study will offer evidence of the significance of
emotion-processing abilities in accepting stimuli from test results and provide innovative strategies for guiding students to become more resilient.

Based on the objective of the study, the investigation is solely focused on the extent of students’ ability to regulate emotions in the context of test result acceptance might directly impact student academic performance. This observation aligns with findings from interviews and observations on Eighth-grade students of SMPN 2 Kuta Selatan. It will indicate students frequently experience frustration when they receive their tests. Therefore, this study proposes two main questions;

1) How is the student's emotional state before and after the test?
2) Are there any differences in depression, anxiety, and stress before the test results?

**Emotion regulation**

This study refers to some findings and statements regarding emotion regulation on test interpretation. Emotion regulation in the context of test results refers to the ability of individuals to manage and control their emotional responses to the outcomes of academic assessments. It encompasses how individuals cope with emotions such as stress, anxiety, satisfaction, or disappointment related to their performance on tests. Effective emotion regulation can play a crucial role in influencing subsequent learning behaviors, motivation, and overall academic success. Pekrun's control-value theory delves into the interplay between academic emotions, achievement goals, and academic performance, shedding light on how emotion regulation may influence outcomes.

According to Li (2021), Control-Value Theory (CVT) identifies a range of academic emotions, including enjoyment, boredom, anxiety, and pride. These emotions are categorized based on two dimensions: valence (positive or negative) and activation (high or low arousal). CVT emphasizes the role of cognitive appraisals, specifically control appraisals (perceptions of control over academic tasks) and value appraisals (subjective valuing of the task or subject matter). These appraisals contribute to the elicitation of specific emotions.

**Students' achievement**

Wolters and Hussain (2015) elaborate that students' achievement refers to the level of success or accomplishment attained by students in their academic pursuits. It means that test encompasses various aspects of learning and performance, including academic grades, test scores, mastery of subject matter, completion of assignments, and overall educational progress. Meanwhile, (Guskey, 2013) states that student achievement is often measured through assessments, examinations, projects, and other evaluations that gauge the extent to which students have met specific learning objectives or educational standards. Furthermore, (Hattie, 2012) emphasizes that achievement can be both quantitative, such as receiving high grades or scoring well on standardized tests, and qualitative, reflecting a deeper understanding of the material, critical thinking skills, and the ability to apply knowledge in practical situations. As a result, It is a multifaceted concept is not only academic outcomes but also the development of skills, competencies, and a love for learning.

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Factors that influence student achievement, according to Wilder (2014) include effective teaching methods, a conducive learning environment, parental involvement, student motivation, individual learning styles, and gender differences. The assessment of students' achievement is a fundamental aspect of the education system, providing valuable insights into the effectiveness of instructional strategies and the overall success of the learning process (Darling-Hammond, 2013).

From these perspectives, this study believes that academic emotion can be influenced by test results. On the other hand, the ability to regulate emotion, the level of students' depression, anxiety, stress, and motivation can be controlled, as learning involves not only cognitive intelligence but also emotional intelligence.

**Method**

The aim of this study is solely to describe student's emotional state before and after the test and measure the correlation between students' motivation and test results. Thus, this research employs an ex post facto approach, allowing the researcher to observe relationships between variables without manipulating independent variables. It means that the researcher does not have direct control over the variables. The research design utilized is a correlational cause-and-effect design, enabling the exploration of the causal relationship between emotional processing abilities on test results and the level of student motivation (Cresswell et al., 2015).

**Population and Sample**

The research population consists of 300 students from SMP2 Kuta Selatan. Sample selection is carried out using purposive sampling, where 30 students are chosen based on specific criteria to participate in the research. This sample is considered sufficient to represent the entire population for result generalization because it shares similar learning experiences, and psychological development, has studied English during the same time frame, and possesses the same English language proficiency.

**Research Instruments**

The research instruments consist of two questionnaires. First, a 21-statement DAS (Depression, Anxiety, Stress) questionnaire is used to measure students' test results. Second, a student motivation questionnaire with 20 statements is employed to assess the level of students' learning motivation. The instruments are administered through questionnaire sheets that have been validated through the distribution of a Google Form link. DASS (Oei et al., 2013) used in the present study is presented in Table 1.
Table 1. Scale Criteria of DAS

<table>
<thead>
<tr>
<th>Grade</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>0 – 9</td>
<td>0 – 7</td>
<td>0 – 14</td>
</tr>
<tr>
<td>Mild</td>
<td>10 – 13</td>
<td>8 – 9</td>
<td>15 – 18</td>
</tr>
<tr>
<td>Moderate</td>
<td>14 – 20</td>
<td>10 – 14</td>
<td>19 – 25</td>
</tr>
<tr>
<td>Severe</td>
<td>21 – 27</td>
<td>15 – 19</td>
<td>26 – 33</td>
</tr>
<tr>
<td>Very Severe</td>
<td>&gt; 28</td>
<td>&gt; 20</td>
<td>&gt; 34</td>
</tr>
</tbody>
</table>

Research Procedure

Selected students as samples were asked to fill out both questionnaires. Then test result data was collected from school records or previous examinations. After data collection, statistical analysis was conducted according to the described approach. The instruments used have been etymologically tested to ensure their suitability for the research context. Instrument validity is also examined to ensure that the questionnaires genuinely measure what the researcher intends using SPSS (Pallant, 2020). This study is expected to provide a deeper understanding of the relationship between emotional processing abilities in test results and the level of student motivation in the secondary school environment.

Data Analysis

The collected data will be analyzed using three main approaches; (1) descriptive analysis was applied to provide a general overview of test results, student motivation, and other observed variables. (2) Correlation Statistics were also used to evaluate the relationship between emotional processing abilities in test results and the level of student motivation. (3) Paired Sample t-test was used to assess significant differences between test results and the level of student motivation.

Findings and Discussion

The findings of this research refer to two research objectives, namely (1) to determine the level of academic emotions and motivation of participants before and after the test is administered, and (2) to determine whether there are any differences in depression, anxiety, and stress before the test administration. Therefore, there are two subtopics of the research results, namely the level of academic emotions and the impact of academic emotions on test results.

The level of academic emotions of participants.

The academic emotions focused on in this research are psychological pressure, including depression, anxiety, and stress, and inner-drive emotion, which is the learning motivation towards the test results obtained. To compare the two different conditions, the results of the emotion and motivation questionnaire without a test and after the test are presented in Table 2.

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Based on the data in Table 2, there are differences in the emotional conditions of participants before and after the test results were given. Before the test, participants experienced "mild" depression, but it became "moderate" after the test was administered. Meanwhile, students experienced "moderate" anxiety before the test and became "severe" after the test. For stress emotions, participants did not show "stress" before the test but felt "mild" stress after receiving the test results. The levels of academic emotions for participants before and after the test can be presented in Figure 1.

Figure 1. The level of participants’ academic emotion before and after test

The information from Table 2 reveals variations in the emotional states of participants before and after the presentation of test results. Before the test, participants encountered "mild" depression, which escalated to "moderate" following the test administration. Concurrently, students underwent "moderate" anxiety before the test and escalated to "severe" after the test. Regarding stress emotions, participants did not exhibit "stress" before the test but experienced "mild" stress upon receiving the test results. The levels of academic emotions for participants before and after the test can be illustrated in Figure 2.

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Figure 2 illustrates that the difference in students' learning motivation before and after receiving test results is not very significant. Only 23% of the 30 participants showed "very high" motivation before the test results were given, and this increased to 40% of participants after the test results were provided. Subsequently, 60% of participants displayed "high" motivation before the test results, which decreased to 43% after the test results. Only 10% had "moderate" motivation, which increased to 17% of students after receiving the test results. Among all participants, only 7% of students had low motivation during the test, and none had low motivation after the test results were given. Thus, even though overall students have "high" motivation, there is a slight difference in motivation levels before and after the test is received.

The test results that affect the emotional and academic conditions of the participants in this study were obtained from formative tests. The results of the English language retest indicate that their understanding is categorized as "fair" but below the minimum passing score. The test results of the participants can be presented in Table 3.

| Table 3. The test results of the participants |
|---------------|-------------|-----------|-------------|-------------|---------------|
|               | excellent   | good      | fair        | poor        | total         |
| Male          | 1 (3.4%)    | 4 (13.3%) | 3 (10%)     | 7 (23.3%)   | 15 (50%)      |
| female        | 2 (6.7%)    | 0 (0%)    | 5 (16.7%)   | 8 (26.7%)   | 15 (50%)      |
| total         | 3 (10%)     | 4 (13.3%) | 8 (26.7%)   | 15 (50%)    | 30 (100%)     |

The research results indicate that the majority of respondents received a "Poor" rating (50%), with a nearly equal percentage between males and females. Meanwhile, the "Fair" category shows a significant contribution from females (16.7%) compared to males (10%). Although there are male respondents who received an "Excellent" and "Good" rating, their numbers tend to be lower compared to females. The gender analysis in this study provides additional insights into the distribution of rating categories, which can serve as a basis for further
research or specific corrective actions based on the gender characteristics of the respondents.

The differences between academic emotion on test results

The second research objective is to determine the comparison between the initial conditions of participants' emotions and motivation and the test results. For this purpose, data on the emotional and motivational conditions of students are compared with the test results of the participants. Before that, there is a procedure in the application of parametric statistics where the data must be homogeneous and normally distributed. Homogeneity testing compares the group means where the variability in each group is equal. If the variability is not uniform, the results of t-tests or ANOVA may be inaccurate. Meanwhile, normality testing uses Kolmogorov-Smirnov, Shapiro-Wilk, and Lilliefors tests. Meanwhile, for homogeneity testing, this data is tested with the Levene test. Therefore, as a prerequisite for conducting the t-test, the data must be homogeneous and normally distributed. The Test of Homogeneity can be found in Table 4.

Table 4. Test of Homogeneity of Variances

<table>
<thead>
<tr>
<th></th>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>motivation Based on Mean</td>
<td>.472</td>
<td>1</td>
<td>58</td>
<td>.495</td>
</tr>
<tr>
<td>depression Based on Mean</td>
<td>.021</td>
<td>1</td>
<td>58</td>
<td>.885</td>
</tr>
<tr>
<td>anxiety Based on Mean</td>
<td>.991</td>
<td>1</td>
<td>58</td>
<td>.324</td>
</tr>
<tr>
<td>stress Based on Mean</td>
<td>.614</td>
<td>1</td>
<td>58</td>
<td>.213</td>
</tr>
</tbody>
</table>

The linearity test showed a significance value (Sig) greater than 0.05 (0.885 > 0.05). Meanwhile, the homogeneity test indicated that the Sig value was greater than 0.05 (0.495 > 0.05). This means that the research data is linear and homogenous, thus suitable for correlation and t-test analysis. were tested for normality using the Shapiro-Wilk test (because the sample was less than 50) with a significance level of 0.05. The null hypothesis for this test is that the data is normally distributed. Since the significance values (Sig.) for both treatments (0.320 for motivation and 0.318 for test are less than 0.05,

Based on the homogeneity and normality test results above, parametric statistical tests were conducted using the paired sample test and correlation test between emotions and students' test results. Therefore, the four mean scores of pretest-posttest that were compared to determine whether there is any difference within the variables include pre-depression and post-depression, (2) pre-anxiety and post-anxiety, (3) pre-stress and post-stress, and (4) pre-motivation and post-motivation. The comparison of mean scores between the pre-test and post-test in the paired sample t-test can be presented in Table 5.
Table 5. Pretest posttest Paired Samples Test

<table>
<thead>
<tr>
<th>Paired Samples Test</th>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1 Pre-dep post-dep</td>
<td>-1.833</td>
<td>3.824</td>
<td>.698</td>
<td>-3.261</td>
<td>-.405</td>
<td>-2.626</td>
<td>29</td>
<td>.014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2 Pre-anx – post-anx</td>
<td>-4.433</td>
<td>5.525</td>
<td>1.009</td>
<td>-6.497</td>
<td>-2.370</td>
<td>-4.395</td>
<td>29</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3 Pre-str – post-str</td>
<td>-3.133</td>
<td>4.783</td>
<td>.873</td>
<td>-4.919</td>
<td>-1.347</td>
<td>-3.588</td>
<td>29</td>
<td>.001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of the statistical analysis of the paired sample test for the 4 emotion variables in Table 3 above indicate differences and relationships between emotions before and after the test is administered. Students show a level of difference in depression before and after the test because the Sig Value < P Value (.014 < 0.05). Meanwhile, there is an effect of test results on participant depression because the calculated t-value is greater than the t-table value from the comparison of the table and calculated values (2.626 > 2.045). This means that students feel more depressed after recognizing their test results.

Regarding feelings of anxiety, participants also experience differences in anxiety before and after the test results are given. This can be seen from the Sig Value < P Value (.000 < 0.05). Test results show a significant influence on participants' anxiety because the calculated t-value is greater than the t-table value (4.395 > 2.045). Meanwhile, participants feel a difference in stress levels before and after they see the test results. This can be seen from the Sig Value < P Value (.001 < 0.05). Test results affect the feeling of stress after knowing the result of the test because it can be seen that the calculated t-value is greater than the t-table value (3.588 > 2.045).

Regarding participants' inner drive, there is a difference in motivation before and after the test is given. This is evidenced by the results of the paired sample test where the Sig Value < P Value (.042 < 0.05). Test results significantly affect participants' motivation because the calculated t-value is greater than the t-table value (2.123 > 2.045). It means that the lower the test results the students obtained, the more depressed, anxious, and stressful the students felt. However, though the results were not satisfying, students were still motivated to gain better goals.

To investigate the relationship between academic emotions and participants' learning outcomes, the Pearson product-moment correlation test was employed. This was done to determine whether there is a correlation between motivation and the test results obtained by the students. Consequently, the results
of the correlation test between motivation and test outcomes can be presented in Table 6.

Table 6. Output of Correlation Between Motivation and Test Results

<table>
<thead>
<tr>
<th>Correlations</th>
<th>anxiety</th>
<th>test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>anxiety</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>test result</td>
<td>Pearson Correlation</td>
<td>.741**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the above output, it is known that the significance value Sig. (2-tailed) between motivation (X) and test results (Y) is .000 < 0.05, indicating a significant correlation between motivation and test results. Based on the calculated r-value (Pearson correlation), the r-value is 0.741, which is greater than the critical r-value (0.741 > 0.349). This means there is a positive relationship between test results and student motivation. This finding can be interpreted to suggest that the levels of depression, anxiety, and stress in participants are influenced by both the test questions and the test results. This occurs because the test results do not meet expectations due to language misconceptions. However, participant motivation tends to increase slightly after learning about the test results, as a good test fundamentally has the potential to enhance students' learning motivation.

Discussion

This research has two main objectives: to describe the student's emotional state including depression, anxiety, stress, and motivation before and after the test and to find out whether there are any differences in depression, anxiety, and stress before the test results. Before the test, participants encountered "mild" depression, which escalated to "moderate" following the test administration. Concurrently, students underwent "moderate" anxiety before the test and escalated to "severe" after the test. Regarding stress emotions, participants did not exhibit "stress" before the test but experienced "mild" stress upon receiving the test results. For the motivation, students' learning motivation before and after receiving test results was not very significant. It showed "very high" motivation before the test results. However, after the test, the participants’ motivation varied depending on the score they achieved. Smart participants got better motivation before and after the test, meanwhile, the rest felt fairly positive motivation. Thus, even though overall students have "high" motivation, there is a slight difference in motivation levels before and after the test is received.

The second finding indicates significant differences between emotional regulation in test results and student learning motivation. Regarding participants' inner drive, there is a difference in motivation before and after the test is given. Test results significantly affect participants' motivation because the calculated t-
value is greater than the t-table value (2.123 > 2.045). It means that the lower the test results the students obtained, the more depressed, anxious, and stressful the students felt. However, though the results were not satisfying, students were still motivated to gain better goals. Students with good emotional regulation skills may find it easier to accept test results, whether satisfactory or disappointing. They might be better able to cope with disappointment and see test results as opportunities for learning and self-improvement. The ability to manage emotions effectively can help students maintain positive motivation, even if test results fall short of expectations. They may view failure as part of the learning process and an opportunity for growth. Students struggling with emotional regulation tend to have lower levels of motivation. They may be disheartened by less satisfactory test results and face difficulties in self-motivation to improve performance.

The previous research aligns with the current study. Adesola and Li (2018), in their research on "The relationship between self-regulation, self-efficacy, test anxiety, and motivation," found that students reporting high levels of self-regulation are more likely to report high levels of cognitive strategy use. Furthermore, the study's results revealed a high correlation between test anxiety and academic outcomes. Meanwhile, Fried and Chapman (2012), discovered that students who used avoidant strategies were less likely than others to develop resilience. This has implications for the classroom, including the teaching of specific motivation and emotion regulation strategies to students and creating the right classroom environment for strategy development. Graziano et al.(2007) indicated that emotion regulation was positively associated with teacher reports of children's academic success and productivity in the classroom, as well as standardized early literacy and math achievement scores. Daniela (2015) found that the competence of self-regulated learning has a strong impact on the level of attainment achieved by students, enhancing the relationship between motivation and performance. Sari and Zuhriyah (2023) proposed that students' limited enthusiasm for learning English can be effectively addressed by incorporating games or facilitating learning experiences outside the traditional classroom setting, creating an environment that promotes comfort and joy.

This research can serve as a foundation for a more holistic educational approach. Educators may consider strategies that focus on the development of social and emotional skills alongside academic learning. Pedagogical interventions could include programs for emotional skill development, counseling support, and the integration of social and emotional aspects into the curriculum (Aydawati & Suratno, 2022). Students not only need to be provided with academic knowledge but also with skills to manage their emotions. This holistic approach can help create a learning environment that supports the full development of students' potential. By understanding and acknowledging the relationship between emotional regulation, motivation, and test results, educators can create a more inclusive and supportive learning environment that fosters the comprehensive development of students.

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Conclusion

From the research results, it can be concluded that there is a significant relationship between the ability to manage emotions in accepting test results and student motivation. Better emotional management skills are associated with more positive student motivation, even when test results are not as expected. Conversely, students with lower emotional abilities tend to have lower motivation as well. This research supports the attention of teachers and educational institutions to the development of emotional management skills as an integral part of pedagogical approaches. Educators and policymakers need to consider strategies and interventions that can enhance students' emotional management skills to stimulate positive motivation, irrespective of potentially unsatisfactory test results. Formal education can include programs for training emotional management skills for students to enhance psychological well-being and motivation. Social-Emotional Interventions: Implementation of social and emotional interventions in classrooms to assist students in developing positive strategies. These findings provide a foundation for a holistic approach to improving learning outcomes, recognizing the central role of student's social and emotional aspects in the learning process.

References


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