The Influence of Gender and Intrapersonal Skills on High-Order Thinking Skills (HOTS) of History Students in Historiography Courses

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Abstract. The importance of improving the quality of history learning, particularly in higher-order thinking skills (HOTS), is the primary focus of this research. Linked to the influence of gender, this study aims to provide information on whether there is an effect of gender on the HOTS abilities of history students in the Historiography course. The method used is ex post facto quantitative research, examining the relationship between variables that have already occurred. Data was collected through tests, questionnaires, and portfolios. The sample consisted of 80 history students. Based on the research results, there is a significant difference in higher-order thinking skills (HOTS) between male and female students. Therefore, it can be concluded that gender has an influence on the higher-order thinking skills (HOTS) of history education students. Descriptively, the average HOTS score of female students (Mean = 83.64, Standard Deviation = 3.089) is higher than the average HOTS score of male students (Mean = 81.00, Standard Deviation = 4.299), meaning H_0 is rejected and H_a is accepted. Based on the Mann-Whitney U test results, there is no influence of intrapersonal intelligence on male and female students in HOTS thinking.

Keywords: Gender Influence, Intrapersonal, HOTS, History Students

1. Introduction

Learning in the 21st century demands a balance between critical thinking, analysis, synthesis, and evaluation skills, to produce students who are critical, creative, innovative, skilled, and capable of creating new works, knowledgeable, and good communicators [1]. 21st-century learning emphasizes students' ability to seek information from various sources, formulate problems, think analytically, and cooperate and collaborate in solving problems. The concept of 21st-century learning involves students learning to think in a way that is oriented towards logical and rational knowledge. Learning activities are geared towards acquiring, deepening, and utilizing knowledge for future purposes, with new situations requiring new skills oriented towards having a cooperative attitude and high-order thinking skills (HOTS) [2].
HOTS thinking skills are high-level cognitive abilities that are very important in the learning process and daily life. These skills involve students having the ability to think critically, creatively, and analytically, and to solve problems in daily life [3].

High Order Thinking Skills (HOTS) are becoming an important aspect of improving the quality of learning. HOTS includes students' abilities in analysis, evaluation, and creativity, enabling individuals to solve complex problems in Historiography material [4]. However, in the context

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of gender, there are differences that may influence the development of HOTS involving analytical, synthesis, and evaluation thinking skills. Social and cultural differences often shape communication patterns, ways of thinking, and approaches to problem-solving between men and women.

Skills needed by students to face the 21st century are more focused on how to think critically and be able to solve problems, collaborate, demonstrate leadership, be adaptable, communicate effectively both orally and in writing, and possess a sense of curiosity [5].

Students' High Order Thinking Skills to understand and analyze every problem that occurs in their surrounding environment have not developed optimally, resulting in low critical thinking skills, so finding and overcoming problems to take a solution or idea is not yet flexible [6].

Students' critical thinking skills can be measured by observing their activities during the learning process, namely focus, reason, inference, situation, clarity, and overview. Several aspects indicate that students are able to think critically, including providing further explanations, the basis for decision-making, generating ideas, finding problem-solving strategies, and implementing all HOTS thinking skills [7], especially if, during the learning process, students can solve real-life problems or understand the historiography that exists around them.

The influence of gender on HOTS (Higher Order Thinking Skills) in History Education students is important to research because society often has stereotypes that associate men with fairly high logical abilities, while women are considered inferior, so their thinking abilities are in the fields of art and language. These stereotypes greatly affect learning expectations and opportunities to achieve aspirations [8].

Based on the explanation above, it is important to hone students' critical thinking skills or HOTS to be able to solve problems and find solutions in their surrounding environment, through concepts and also whether there is an influence of gender on HOTS thinking skills by involving intrapersonal intelligence. Therefore, this study aims to analyze how gender influences HOTS abilities related to intrapersonal thinking intelligence.

The theory used in analyzing the influence of gender refers to Nasaruddin [9], stating that gender is performative, shaped through the repetition of actions and social practices. The concept of gender refers to the roles, behaviors, and attributes associated with men and women by society. This is different from sex, which refers to biological characteristics. The concept of gender emphasizes that these roles and attributes are social constructs, meaning they are formed and learned through culture and social norms, not determined biologically. The theory of intrapersonal intelligence was first proposed by Gardner [10] in his book Frames of Mind: The Theory of Multiple Intelligences. Gardner explained that intelligence is not singular (IQ alone), but rather consists of various types of intelligence, one of which is intrapersonal intelligence, which relates to the ability to understand oneself, feelings, motivations, and awareness of personal strengths and weaknesses.

2. Method

This research uses a quantitative approach with descriptive statistical methods [11] to describe and analyze the influence of gender and intrapersonal intelligence variables on the high-order thinking skills (HOTS) of history students in understanding Historiography material. The research instrument was designed to measure three main variables, namely gender, intrapersonal intelligence, and HOTS abilities, which include aspects of analysis, evaluation, and creation. The results of the collected data were analyzed using descriptive statistical techniques [12], in

the form of frequency distribution, percentages, and average value trends, to determine general patterns and relationships between the variables studied.

The population in this study consisted of history students taking the Historiography course. The sample was taken using purposive sampling [13], total 81 respondents consisting of male and female students with varying backgrounds in Intrapersonal intelligence. This technique was chosen to obtain a representative picture of the relationship between gender, Intrapersonal intelligence, and high-order thinking skills (HOTS) in understanding historiography material.

The research instrument used in this study consisted of closed questionnaires in the form of a Likert scale, tests, and observations designed to measure three main variables: gender, Intrapersonal intelligence, and the high-order thinking skills (HOTS) of history students in understanding historiography material [14].

The gender variable was identified as categorical data based on the respondent's sex, while intrapersonal intelligence was measured through indicators such as communication skills, empathy, and cooperation in the academic social environment. Meanwhile, HOTS abilities were measured through items that reflected the ability to analyze, synthesize, evaluate, and create based on the context of historiography [15].

The data collection process in this research was carried out through three main techniques: closed questionnaires, used to measure gender and Intrapersonal intelligence variables, with a Likert scale containing indicators related to social interaction skills, empathy, and cooperation [16].

Pre- and post-tests were used to measure students' HOTS abilities before and after engaging in learning activities related to historiography material. In addition, observations were conducted during group discussions and student presentations to directly observe how intrapersonal skills and critical thinking patterns of students were reflected in academic interactions [17].

The data analysis process in this research was carried out using descriptive statistical analysis [18] to interpret data from questionnaires, tests, and observations. Closed questionnaire data were analyzed using descriptive statistics in the form of percentages, frequencies, and mean values to describe the gender profile and level of intrapersonal intelligence of students. Meanwhile, the results of the pre- and post-tests were analyzed by comparing the average score to see the increase in HOTS abilities, as well as calculating the score difference (gain score) as an indicator of the effectiveness of understanding historiografi [19].

Observation data from discussions and presentations were analyzed using observation sheets with assessment rubrics, which included HOTS indicators (analysis, synthesis, evaluation, and creation) as well as aspects of Intrapersonal skills (communication, cooperation, and empathy) [20].

The results from these three instruments are then presented narratively and tabularly to provide a comprehensive overview of the relationship between gender, intrapersonal intelligence, and HOTS thinking skills of history students in understanding historiography material. The hypothesis testing process in this study was conducted to determine whether there was a significant influence between gender and intrapersonal intelligence on the high-order thinking skills (HOTS) of history students in understanding historiography material. Before testing, assumption testing was first carried out through a normality test to ensure that the data met the requirements for inferential analysis [21].

Furthermore, hypothesis testing was conducted using parametric statistical tests, with an independent t-test to determine differences in HOTS abilities based on gender, as well as simple or multiple linear regression tests to analyze the influence of intrapersonal intelligence variables on HOTS, both partially. The results of the hypothesis test are determined based on the significance value (p-value) at a 95% confidence level ($\alpha = 0.05$). If the significance value is less than 0.05, then the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted, which means there is a significant influence between the variables studied [22].

The process of presenting data in this study is carried out systematically to facilitate the reading and interpretation of results. The data that has been collected through questionnaires, tests (pre-test and post-test), and observations, are arranged and presented in the form of tables, diagrams, and descriptive narratives. Questionnaire data related to gender and intrapersonal intelligence are presented in the form of frequency distributions and percentages, to show the tendency of the respondent's profile. The results of the pre-test and post-test of HOTS abilities are presented in the form of a comparative table to show an increase or difference in high-level thinking abilities.

Meanwhile, observation data related to discussion and presentation activities were analyzed and presented in the form of observation score tables based on assessment rubrics, which included indicators of critical and intrapersonal thinking skills. The data is presented sequentially according to the research variables, so that the relationship between variables can be seen comprehensively and structurally.

3. Results and Discussion

3.1. Descriptive Analysis of HOTS Ability Based on gender

Descriptive analysis was conducted to obtain an initial overview of HOTS ability score in both gender groups. HOTS score were measured using pre-post test (UAS) score after participating in historiography learning. The results of the descriptive analysis are presented in Table 1.1 below:

Table 1. Descriptive statistics of HOTS score based on gender

Gender	(N)	(Mean)	Standard Deviation	Minimum value	Maximum value
Men	34	81.00	4.299	72	88
Women	47	83.64	3.089	78	90
Total	81	–	–	–	–

Based on Table 1, it is known that out of a total of 81 students, 47 of them (58.0%) are female and 34 (42.0%) are male. Descriptively, the average HOTS score of female students with (Mean = 83.64, Standard Deviation = 3.089) is higher than the average HOTS score of male students with (Mean = 81.00, Standard Deviation = 4.299).

Gender Perspective views that differences in learning outcomes between men and women are not solely caused by biological factors, but also by social constructs, learning experiences, and environmental expectations. In this context, female students, based on Table 1, show that female students (Mean=83.64; SD=3.089) have HOTS score that are, on average, higher than male students (Mean=81.00; SD=4.299) after participating in historiography-based learning, possibly

due to higher levels of learning engagement, more consistent diligence, and a tendency to follow learning instructions in a structured manner, thus positively influencing HOTS achievement.

The difference in score can be explained as a result of the interaction between the social construction of gender and HOTS cognitive processes. Female students who are socially encouraged to be thorough, diligent, and communicative may be more optimal in working on HOTS-based assignments that require complex information processing on historiografi material. To ensure whether this average difference is statistically significant, a hypothesis test is conducted.

Hypothesis Testing of Differences in HOTS Ability Based on Gender

Hypothesis testing was conducted using the Independent Samples T-Test. This test aims to statistically prove whether the difference in average HOTS score between male and female student groups occurs significantly.

The hypotheses being tested are:

- H_0: There is no significant difference in HOTS ability between male and female students.
- H_a: There is a significant difference in HOTS ability between male and female students

Decision-making criteria:

- If the significance value (p-value) < 0.05, then H_0 is rejected and H_a is accepted.
- If the significance value (p-value) > 0.05, then H_a is rejected and H_0 is accepted. The results of the T-Test are presented in Table 2 below:

Table 2. Results of Independent Samples T-Test for HOTS Score

Variable	t-value	df	Sig. (2-tailed)	Mean Difference	description
HOTS scores	−3.216	79	0.002	−2.638	Signification

The analysis results in Table 2 show that the significance value (Sig. 2-tailed) is 0.002. Because the value 0.002 < 0.05, or is smaller than the established significance level ($\alpha = 0.05$), then H_0 is rejected and H_a is accepted

Based on the results of the statistical analysis, there is an influence of gender on HOTS (critical) thinking in history students in historiography learning, because there is a significant difference in high-order thinking skills (HOTS) between male and female students, it can be concluded that gender has an influence on high-order thinking skills (HOTS) in History Education students. Specifically, in this study, female students showed significantly higher HOTS abilities than male students. This finding is in line with the opinion of [23]

Based on the results of the Independent Samples T-Test, a Sig. (2-tailed) value of 0.002 (< 0.05) was obtained, which means that there is a significant difference in the average HOTS score between male and female students. The mean difference value of -2.638 indicates that the average score of women is higher than that of men.

Interpretation from a Gender perspective [24], gender explains that differences in academic achievement are not only influenced by innate cognitive abilities, but also by social and cultural

constructs that shape learning patterns, motivation, and student interaction. In the context of historiography-based learning, women tend to show higher emotional and social engagement. Values often attached to women's gender roles, such as perseverance, attention to detail, and patience, can support high-level thinking processes that require in-depth analysis, critical evaluation, and the ability to connect concepts with socio-cultural contexts. Conversely, men may have a wider variation in learning strategies, as seen from the higher standard deviation of their score in the descriptive analysis, but on average their HOTS achievements are lower compared to women.

Relating to the concept of HOTS according to, HOTS requires analysis, synthesis, and evaluation skills that not only depend on factual knowledge but also on the ability to relate knowledge to reality [25]. Historiography learning provides a real context rich in culture and history. Female students, based on a gender perspective, are often more responsive to these historical, socio-cultural contexts, thereby significantly promoting HOTS improvement. The significant t-test results support the assumption that learning contexts that align with specific interests, learning styles, and value orientations can produce differences in achievement based on gender.

Theoretically, these findings reinforce the view that gender differences can influence how students process information and build high-order thinking skills, especially in contextual learning. Practically, educators can use these results to design teaching strategies that can bridge gender differences, for example by integrating collaborative approaches, critical discussions, and context-based problem solving that is relevant to all students.

There is a difference in HOTS abilities between male and female students in historiography learning. Based on the results of the analysis, the decision criterion obtained is that H_0 is rejected and Ha is accepted. Therefore, it can be concluded that there is a statistically significant difference in high-order thinking skills (HOTS) between male and female students in historiography learning.

The results of the data analysis indicate that gender has a significant influence on high-order thinking skills (HOTS), particularly on the critical thinking aspect of history students in historiography learning. Female students tend to show higher accuracy in analyzing historical sources, especially those related to historiographical narratives, such as oral traditions, customary law, and cultural practices. Meanwhile, male students are more prominent in their ability to evaluate arguments and synthesize information across sources. This finding is in line with the concept of doing gender [26], which asserts that gender identity influences interaction patterns and cognitive strategies used in academic activities.

This difference cannot be seen as an absolute advantage of one gender over another, but rather as a tendency formed through social processes and learning experiences. In the context of historiography-based history learning, the critical thinking skills of both female and male students appear to develop when they are involved in group discussions, presentations, and case studies that require them to compare historiographical perspectives and interpret historical evidence creatively. This is in line with Bloom's revised taxonomy, which places analysis, evaluation, and creation as the main indicators of HOTS, where gender factors can influence how students process and articulate their understanding of learning. In the context of learning history with historiography material, the critical thinking skills of both female and male students appear to develop when they are involved in group discussions, presentations, and case studies that require them to compare historiographical perspectives and interpret historical evidence

creatively. This is in line with Bloom's revised taxonomy, which places analysis, evaluation, and creation as the main indicators of HOTS, where gender factors can influence how students process and articulate their understanding.

3.3 Descriptive Analysis for Intrapersonal Intelligence

Descriptive analysis and the Independent Samples T-Test were conducted to obtain an initial overview of the differences in intrapersonal intelligence between male and female students in understanding historiography learning. The results of the descriptive analysis are presented in Table 3 below:

Table 3. Descriptive Statistics of Intrapersonal Score

Variable	Gender	(N)	(Mean)	Standard Deviation
Intrapersonal Score	Men	34	49.41	4.391
	Women	47	50.43	4.231

Based on Table 3, descriptively, the average intrapersonal intelligence score for female students is higher than that of male students. To prove the significance of this difference, a T-Test was conducted.

Hypothesis Testing of Differences in Intrapersonal Intelligence

Hypothesis testing was conducted using the Independent Samples

T-Test.

This test aims to statistically prove whether the difference in intrapersonal intelligence between male and female student groups occurs significantly.

The hypotheses being tested are:

- H_0: There is no significant difference in intrapersonal intelligence between male and female students.
- H_a: There is a significant difference in intrapersonal intelligence between male and female students.

For Intrapersonal Intelligence, the significance value (Sig. 2-tailed) is 0.298. Because this value is greater than the significance level of 0.05 ($p > 0.05$), it can be concluded that there is no statistically significant difference in intrapersonal intelligence between male and female students.

The analysis results in Table 3 show that:

Based on Table 3, descriptively, female students have an average intrapersonal intelligence score of 50.43 (SD = 4.231), slightly higher than male students who have an average score of 49.41 (SD = 4.391). This difference was then tested using the Independent Samples T-Test to determine its significance.

Intrapersonal Intelligence Perspective, according to the theory of Multiple Intelligences developed, intrapersonal intelligence is the ability to understand, manage, and direct oneself with other people. This intelligence includes self-reflection, the ability to motivate, effective

communication, and sensitivity to self-awareness. In the context of education, intrapersonal intelligence plays a very important role in collaborative learning, group discussions, and project-based activities, because students who have high intrapersonal score find it easier to work together and utilize team strengths

From a Gender Perspective, differences in self-motivation and self-awareness between men and women are seen as a result of social construction, not just biological factors. In many cultures, women are encouraged from an early age to have the ability to be independent, motivated, and care for social relationships. This socialization pattern strengthens intrapersonal skills that are relevant in an academic environment. Men tend to be socialized to be more independent and competitive, which, although having certain advantages, sometimes does not highlight the intrapersonal relationship aspect in learning.

Interpretation of T-Test Results, If the test results show a p-value < 0.05, then this difference in means can be declared statistically significant. If significant, then this finding supports the theory that gender differences in intrapersonal intelligence are not coincidental, but rooted in differences in patterns of social interaction, communication styles, and collaborative motivation that are formed early in life. If not significant, then although women descriptively have a slightly higher average, individual variation within the group is greater than the gender difference itself.

Table 4. Results of Independent Samples T-Test for Intrapersonal Intelligence

Variable	t-value	df	Sig. (2-tailed)	Mean Difference	description
Intrapersonal score	-1.048	79	0.298	-1.014	no Signification

Based on the results of the statistical analysis, there is no statistically significant difference in intrapersonal intelligence between male and female students in understanding historiography learning.

The results of the difference test show that the significance value (Sig. 2-tailed) for intrapersonal intelligence is 0.298, which is greater than the significance level of 0.05 ($p > 0.05$). This indicates that there is no statistically significant difference in intrapersonal intelligence between male and female students. In other words, the ability to establish social relationships, communicate effectively, and work together in groups is relatively equal in both gender groups.

This condition has important implications for the development of high-order thinking skills (HOTS) of history students in Historiography learning. Because intrapersonal intelligence is one of the factors that supports analysis, evaluation, and creation skills, the equality of this ability among male and female students indicates that collaborative learning processes, such as group discussions, case studies, or historiography-based research projects, can be optimized without significant gender-related obstacles. In this context, both male and female students have equal opportunities to develop critical thinking about historical sources, compare historical perspectives, and produce interpretations that are creative and socially relevant.

This finding is in line with Gardner's (1993) view in the Multiple Intelligences Theory, which states that intrapersonal intelligence develops through social interaction and learning experiences, not solely determined by biological factors or gender. This equality is an important asset in Higher Order Thinking Skills (HOTS)-based learning, which, according to [27], requires collaboration, discussion, and exchange of ideas to hone analysis, evaluation, and creation skills.

In the context of history learning that focuses on historiography, the equality of intrapersonal intelligence between male and female students allows for the creation of effective group work. Students can jointly analyze historical sources, evaluate historical meanings, and create new, inclusive interpretations, without significant obstacles due to gender differences. This supports the achievement of history education goals that not only master facts, but are also able to think critically, creatively, and collaboratively according to the characteristics of HOTS.

3.4. Descriptive analysis to see if intrapersonal intelligence affects HOTS abilities in History Education students

Multiple linear regression analysis was performed to prove the question above:

Table 5. Regression Results of Intrapersonal Intelligence Influencing HOTS Ability

Model	Unstandardized Coefficients (B)	t	Sig.
(Constant)	74.074	14.796	0.000
Interpersonal score	0.174	0.195	0.974

Based on Table 5 above, it was found that the significance value for the intrapersonal score is 0.974, which is greater than the established significance level of 0.05. Therefore, it can be concluded that intrapersonal intelligence does not significantly affect HOTS abilities. Based on the regression analysis, neither type of intelligence was proven to be a significant predictor of students' high-order thinking skills.

Normality Test is a test conducted with the aim of assessing the distribution of data in a group of data or variables, whether the data distribution is normally distributed or not [28]. The Normality Test is useful for determining whether the data that has been collected is normally distributed or taken from a normal population. The classical method in testing the normality of a data is not so complicated. Based on the empirical experience of several statistical experts, data with more than 30 numbers ($n > 30$) can be assumed to be normally distributed. It is usually referred to as a large sample.

However, to ensure whether the data is normally distributed or not, it is best to use a normality test. Because it is not certain that data with more than 30 can be confirmed to be normally distributed, and vice versa, data with less than 30 is not necessarily not normally distributed, so proof is needed. Therefore, a normality test will be carried out on pre-test and post-test data, intrapersonal intelligence data, intrapersonal intelligence based on social awareness and social facilities.

The normality test of pre-test and post-test data in table 6 will be carried out using SPSS. The following is a table of normality tests for pre-test and post-test data of history students

Table 6. Normality Test of Pre-Test and Post-Test Data of History Students

Variable	Gender	N	Mean	Median	Std. Deviation	Statistic	Sig.
Pre-Test	Men	34	12.50	10.00	5.401	0.881	0.01

	Women	47	13.02	14.00	5.359	0.907	0.01
Post-Test	Men	34	81.00	82.00	4.299	0.903	0.006
	Women	47	83.64	84.00	3.089	0.897	< 0.01

Analysis of table 6, the results of the normality test of pre-test and post-test data. This normality test uses the Shapiro-Wilk test because it has a data amount of <50. The criteria for testing the normality of the data are as follows:

- If the significance >0.05, then the data is normally distributed
- If the significance <0.05, then the data is not normally distributed

Based on table 6, the results of the normality test of pre-test and post-test data, it was found that the significance value of pre-test data between male and female students is 0.01, which is smaller than the significance level value of 0.05, so it can be seen that the pre-test data between male and female students is not normally distributed. Then, the significance values of post-test data between male and female students are 0.006 and <0.01, respectively, which are smaller than the significance level value of 0.05, so it can be seen that the post-test data between male and female students is not normally distributed.

Next, a normality test of intrapersonal intelligence data based on social awareness and social facilities will be carried out using SPSS in table 7. The following is a table of normality tests for intrapersonal intelligence data based on social awareness and social facilities of history students:

Intrapersonal skills refer to your ability to understand yourself and relate to your own thoughts and feelings. Here are some key components:

- Self-Awareness: recognizing your own emotions, strengths, weaknesses, value and motivations
- Self-Reflection: taking time to thoughfully consider your experiences and actions.
- Self-Motivation: Having the drive and initiative to pursue your goals
- Self-regulation: managing your emotions, thoughts and behaviors effectively
- Independence: Being able to work autonomously and make decisions on your own
- Goal-Setting: Defining clear objectives and creating plans to achieve them
- Time management: organizing and prioritizing task to make the most of your time
- Stress management; Using healthy coping mechanism to deal with pressure and challenges
- Personal Values: Understanding and living in accordance with your core beliefs

Based on these intrapersonal skills, questionnaires were distributed to see if there was an influence of intrapersonal skills on HOTS thinking among history education students in historiography material.

The purpose of distributing the questionnaire: To determine whether there is a significant relationship or influence between students' intrapersonal intelligence and their HOTS abilities in the context of historiography learning.

Table 7. Normality Test of Intrapersonal Intelligence Data

Variable	Gender	N	Statistic	Sig.
Self -Awareness	Men	34	0.606	< 0.001
	Women	47	0.617	< 0.001
Self-Reflection	Men	34	0.255	< 0.001
	Women	47	0.356	< 0.001
Self-Motivation	Men	34	0.591	< 0.001
	Women	47	0.633	< 0.001
Self- Regulation	Men	34	0.590	< 0.001
	Women	47	0.732	< 0.001
Independence	Men	34	0.626	< 0.001
	Women	47	0.637	< 0.001
Goal-Setting	Men	34	0.638	< 0.001
	Women	47	0.609	< 0.001
Time-Management	Men	34	0.552	< 0.001
	Women	47	0.644	< 0.001
Stress Management	Men	34	0.629	< 0.001
	Women	47	0.662	< 0.001
Personal Values	Men	34	0.606	< 0.001
	Women	47	0.617	< 0.001

The results of the normality test of intrapersonal intelligence data based of history students. This normality test uses the Shapiro-Wilk test because it has a data amount of <50. The criteria for testing the normality of the data are as follows:

If significance >0.05, then the data is normally distributed
If significance <0.05, then the data is distributed

Based on table 7, the results of the normality test of intrapersonal intelligence data based of history students, it was found that the significance value of intrapersonal intelligence data based on social awareness and social facilities between male and female students is <0.001, which is smaller than the significance level value of 0.05, so it can be seen that the intrapersonal intelligence data between male and female students is not normally distributed. Because the data to be tested is not normally distributed, a non-parametric test will be carried out using the Mann Whitney test

Mann Whitney test is a test used to examine differences, means or medians between 2 groups of data. The Mann-Whitney test is used in the comparison test of two unrelated samples or independent samples [29]. The Mann Whitney test refers to the null hypothesis which states that there is no real difference between the two groups of data and where the data is taken from unrelated samples. In this study, the Mann Whitney test was used to test the differences or influences of several data, namely pre-test and post-test data, intrapersonal intelligence data, based on social awareness and social facilities on high-order thinking skills (HOTS). A Mann Whitney test will be carried out regarding the influence of gender on the high-order thinking skills (HOTS) of history students in historiography learning. The hypothesis criteria are as follows:

Ho: There is no significant influence on HOTS abilities between male and female students.

Ha: There is a significant influence on HOTS abilities between male and female students.

Here is a table of Mann Whitney test results of the influence of gender on high-order thinking skills (HOTS).

Table 8. Results of the Influence of Gender on High-Order Thinking Skills (HOTS) Score

	High-Order Thinking Skills (HOTS) Score
Mann-Whitney U	538.000
Wilocoxon W	1133.000
Z	−2.560
Asymp. Sig. (2-tailed)	.010

Decision-making criteria:

- If the Asymp. Sig. (2-tailed) value >0.05, then H_0 is accepted.
- If the Asymp. Sig. (2-tailed) value <0.05, then H_0 is rejected and H.a is accepted.

Based on table 8, the results of the influence of gender on high-order thinking skills (HOTS) score, it was found that the Asymp. Sig. (2-tailed) value is < than the significance level, which is 0.10<0.05, so based on the decision-making criteria, it is stated that H_0 is rejected and H_a is accepted. Thus, it can be concluded that there is a significant influence on HOTS abilities between male and female students.

Then, it will be seen whether there is a difference in high-order thinking skills (HOTS) between male and female students in historiography learning, through the following descriptive analysis table:

This finding indicates that gender has an influence on the high-order thinking skills (HOTS) of history education students, especially in historiography courses. Thus, this study supports the aim of testing the influence of gender on HOTS mastery, as well as providing an overview that female students tend to be superior in developing critical, analytical, and reflective thinking skills through the historiography learning approach.

3.5. Descriptive Analysis of HOTS Score Based on Gender

The minimum and maximum score for male students are 72 and 88, respectively, while for female students, they are 78 and 90, respectively. This indicates that the range of HOTS score for female students is slightly higher and more homogeneous (smaller standard deviation) compared to male students, who have a wider distribution of values.

Descriptively, female students show a higher average HOTS score compared to male students. This difference indicates that, in the context of historiography learning, female students tend to have better high-order thinking skills, especially in the aspects of analysis, evaluation, and creation as explained by [23] in Bloom's revised taxonomy.

If linked to the theory of doing gender, this difference may be influenced by variations in learning styles and cognitive strategies formed through social interactions and expectations of gender roles in the academic environment. Female students, in this context, may be more involved in discussions, pay attention to detail, and integrate cultural perspectives in interpreting historiography, thus contributing to higher HOTS score.

Table 9. Results of T-test of HOTS Score based on Gender

Variable	Gender	N	Mean	Std, Deviation	t-test	df	Sig (2-tailed)	Note
HOTS	Men	34	81.00	4.299	-3.022	79	0,003	Significantly different
	women	47	83,64	3.089				

Note: t-count and Sig. values.

Based on the results of the independent samples t-test, the Sig. (2-tailed) value = 0.003 ($p<0.05$) was obtained, which shows that there is a statistically significant difference in HOTS score between male and female students. The average HOTS score for female students (83.64) is higher than that of male students (81.00).

This finding indicates that in historiography learning, female students tend to have better high-order thinking skills, especially in the aspects of analysis, evaluation, and creation as explained in Bloom's revised taxonomy by [23]. This difference can be attributed to the theory of doing gender, which explains that gender roles shape patterns of interaction and cognitive strategies in the learning process. Female students, for example, may be more involved in discussions, pay more attention to detail, and relate historical information to cultural values, thus contributing to higher HOTS achievements.

4 Conclusion

Based on the analysis results, the intrapersonal variable shows a significance value of 0.974, which is greater than the significance level of 0.05. This means that intrapersonal intelligence does not significantly affect students' high-order thinking skills (HOTS). Thus, it can be understood that students' ability to manage emotions, self-awareness, and personal reflection does not directly determine their achievement in mastering HOTS in historiography learning.

On the other hand, the gender factor shows a difference in HOTS score, where female students tend to have higher score than male students. This indicates that gender plays a role in contributing to HOTS achievement, although it is not the only determining factor.

Overall, the regression results show that neither intrapersonal intelligence nor gender is proven to be a significant predictor in influencing the level of students' high-order thinking skills. In other words, there are other factors outside of intrapersonal and gender that are more dominant in determining the HOTS abilities of history education students, especially in historiography courses. These findings suggest that efforts to improve HOTS should be focused on learning strategies, pedagogical approaches, as well as academic environment that supports the development of critical, analytical, and reflective thinking skills.

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