

# A Study on Gender Difference of High School Students' Ability in Literature Appreciation under Emotional Education System

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## ABSTRACT

Past studies and previous research have shown that gender difference is an important factor for affecting students' achievements. Nevertheless, the gender difference in the literature appreciation ability of high school students has been rarely concerned. This study is seeking to examine whether gender difference exists in literature appreciation ability by analyzing 117 senior-three students from M school – 44 female students and 73 male students. In this research method, arithmetic mean and t-test are quantified for whether there's a literature appreciation ability's gender difference in mathematics and statistics. Furthermore, the standard deviation is used to see which gender group's ability fluctuates more. For results, it shows that there is a mathematical and statistical significance in genders' literature appreciation abilities, and female students showed greater ability than male students in literature appreciation. Nevertheless, female students' literature appreciation scores fluctuated more than those of male students. Limitations, implications, and future directions of the research are also discussed in this study.

**Keywords:** *gender difference, literature appreciation ability, high school students, emotional education system.*

## 1. INTRODUCTION

### 1.1. Introduction of Research Backgrounds

Modern teaching methods can be divided into two important parts, cognitive education, and emotional education. Being a teaching method and purpose, emotional education is the core of humanistic quality education [1]. Liao and Wang [2] pointed that literature education which provides both clear research ideas and direct research objects for the study of emotional education can be used as a channel for students to access other human's experiences and to develop their creativity, flexibility [3], sensitivity, empathy, and compassion toward others. Being the product of emotions [4], the ability of literature appreciation, also being an ability of process as someone gauge their interpretive responses as readers to literary works ([5]; see also, [6]), has significant meanings not just narrow in education (e.g., linguistics; vocabulary abilities; [7]), but also in social motivation and concerns [8].

Fired by the depth and creative power of narration and the insight into human characters it revealed [9], appreciating literary works has functions in entertainment as well as gives moral values to influence students' behaviors [10] and shape good personalities and attitudes towards life through the positive characters they learn in the literature [11]. According to the requirement of the National Exam (e.g., UN) senior high school in Bali and Indonesia [12] and 2019 Chinese Curriculum Standards for Junior High Schools, it's a common question type and an important examination point [13] for students to gain the ability to appreciate literary works, being able to analyze the characteristic of characters and thoughts of authors and telling their own feelings, in other words, it is an important index to cultivate and improve the students' literary appreciation abilities [14].

A substantial body of evidence showed that the effect of the learning environment on academic performance can be investigated according to a broad range of factors, and many differences in academic performance have been associated with the gender of students [15], Burns and Bracey ([16]; see also, [17]) viewed that male students' performance and grades have gaps from female

students in academic achievement at their age of sixteen. That is to say, gender is an explicit factor that has an impact on students' present performance (e.g., mathematics; [18]), classroom interactions [19], and future achievements (e.g., self-efficacy; [20]). Furthermore, Chaplin [21] found there's a small but significant difference in emotional expression and perception that females showed greater talent and ability to express emotions than males, and also females express more powerless emotions (e.g., sadness; [22]) while males have more powerful emotions (e.g., anger; [22]). Due to the possibility of gender differences in different academic fields, curiosity leads to a major and hot topic of gender discussions in Humanities & Social Sciences [23]. Connected with the gender difference in emotional feelings, perceptive abilities, and other areas of humility, curiosity is awarded and a relationship was assumed between gender and literary appreciation ability.

Considering the impact of gender on emotional perception (e.g., humor appreciation; [24]), and to explore relations between gender and students' ability in literature appreciation, students' genders (e.g., male students and female students) are set to be independent variables, and students' performances, also called as abilities, in literature appreciation are set to be dependent variables. And according to previous researches and the lack of studies on gender differences of literature appreciation in emotional education, specific gender differences, moreover, backgrounds and prerequisites of an efficient teaching method for students in accordance with their genders, are expected to be found in this study.

### **1.2. Objectives of the Research**

Although many researches have shown abundant gender differences in academia, Igbokwe et al. [25] found that significant gender difference in the manifestation of brain fog syndrome, which also has can-not-be-ignored significance to students' performance, was not shown in this case. Given all these considerations, the purpose of the present study was conducted to 1) examine the relations between gender and the ability to appreciate literary works; and 2) determine which gender shows more relevant ability in literature appreciation if there's a relation.

### **1.3. Hypotheses of the Research**

Considering the backgrounds and researches mentioned before, the hypotheses were stated as:

- 1) there is a mathematical and statistically significant difference in the ability of literature appreciation to different genders;
- 2) female students show a greater ability to appreciate literary works than male students;

3) male students' literature appreciation scores fluctuated more than those of female students.

## **2. METHODOLOGY**

### **2.1. Participants**

This design chose students from senior three as research objects to examine the gender difference in literature appreciation and consideration of students' comprehensive knowledge, experiences, and educational levels. To ensure the accuracy of the results, the plan-controlled factors (e.g., teachers' qualifications and teaching methods) may influence the results, and then 117 grade-three high school students were chosen from M school, Mianyang Sichuan.

The research objects were grouped from two classes teaching by the same literary appreciation course teacher. Although the numbers of male students and female students were different, the plan did not use a random selection method to control quantitative equivalence of male students and female students; the number of students was not seen as a confounding variable in the study, all collected and efficient data was tested.

There were 50 students from Class One, and 67 students were from Class Two. Being classified by gender, 73 male students and 44 female students were included in this study. And as was mentioned above, the independent variable was students' gender (e.g., male and female), the dependent variables were their literary appreciating abilities, being proxied by their scores on the literature appreciation part of the test.

### **2.2. Measurements**

Test scores were used as data [26] to measure students' abilities [27].

#### **2.2.1. Arithmetic Mean**

The average literature appreciating levels of male students and female students were separately calculated by using an arithmetic mean. For using the arithmetic mean, it could tell if there is a mathematical difference between male and female students' literature appreciating abilities, that is to say, the higher arithmetic means are, the better literature appreciation ability they have.

#### **2.2.2. T-Test**

T-test was expected to examine if there's a statistically significant difference between their literature appreciation abilities. After calculating by using a t-test and being compared with the corresponding boundary table, both t-value and p-value, being two important

indexes for testing the significance level of independent samples, could be determined.

After setting null hypothesis and alternative hypothesis, t-value was compared with the critical value table of t-test, and it could show if the null hypothesis should be rejected or accepted, which means to see whether a statistical significance exists between the samples. For p-value,  $\alpha$  was chosen to be 0.05 in this study. Therefore, comparing the p-value to  $\alpha$ , it could also tell if there is a statistical significance. Furthermore, the smaller the p-value is, the more reliability of their significance level has.

### 2.2.3. Standard Deviation

Standard deviation describes the average distance from the mean of each data point, measuring the degree of dispersion between data points. In this study, the plan was to use standard deviation to reflect the fluctuation for the scores of male students and female students. The smaller the standard deviation is, the less fluctuation of the samples is, and vice versa.

All data and results were analyzed and calculated by SPSS 26.0.

### 2.3. Procedure

Approval for the study will be obtained from both students and the teacher from M high school. Informed consent Participants will not make aware of the purpose of the study until after they had completed all measures. After submission, they will be debriefed.

#### Data Source and Collection

The Third-Month Academic Examination of M high school was chosen to be the research instrument because of its timeliness, and to protect the reliability and validity of the test, both 8th (*Analyze the Characteristics of the Foster Father in the Essay*) and 9th (*Analyze the Writing Methods and Skills for How Grandmother's Whole Life is Full Narrated, and the Advantages of Writing in This Way*) items were carefully designed by the whole group

of Chinese Language teachers, and the essay was excepted from *Long Kneeling on the Dabie Mountain* to test students' literary appreciation abilities which were proxied by students' scores. Their scores were gathered and grouped in one table. After all the preparations and inspections, it was starting to test the hypotheses.

## 3. RESULTS

### 3.1. Gender Difference

The number of the samples was 117 among 44 female students ( $n_a=44$ ) and 73 male students ( $n_b=73$ ), Their literature appreciation scores were denoted as G. And a was used to represent female students (e.g.,  $a_1, a_2, a_3, \dots, a_{44}$ ), b was used as the number of male students (e.g.,  $b_1, b_2, b_3, \dots, b_{73}$ ).

By using the formula of Arithmetic Average (1) which took female students as an instance.

$$\bar{G}_a = \frac{G_{a1} + G_{a2} + G_{a3} + \dots + G_{a44}}{n_a} \quad (1)$$

After calculation, the average of male students and female students were shown separately and compared together. The average literature appreciation score of male students was 6.73, and the average score of female students was 7.41 (see also in Table 2). Apparently, the scores were different, which meant that there was a gender difference in literature appreciation ability in mathematics (Hypothesis 1) between male students and female students. And the results ( $G_a=7.41 > G_b=6.73$ ) also showed that, in literature appreciation ability, female students were better than male students, holding Hypothesis 2 of the study.

Then, a t-test was used to check if there is a statistical difference. In the beginning, both null hypothesis (*having no gender difference*) and alternative hypothesis (*having gender difference*) were set. As mentioned before,  $\alpha=0.05$ . According to SPSS 26.0, t-value and p-value (shown in Table 1) as well as standard deviation (see in Table 2) were shown.

**Table 1** T-test for the mean level across genders.

		T-Test				
		Levene Variance Equality Test		T-Test for Equality of Means		
		F	Sig.	t	df	Sig.
Score	Equal-variance Assumption	.450	.504	2.762	115	.007
	Non-equal-variance Assumption			2.671	81.487	.009

As what was shown in Table 1, it could be seen that the *t-value* was 2.762, according to the degree of freedom, which was 115, and then comparing with the critical value table of the *t-test* which shown the corresponded value should be 1.981. As the *t-value* of the study was much greater than the critical one, the result got a similar conclusion to the mathematical gender difference. Specifically considering about the *p-value* which equaled 0.007 was significantly weaker than  $\alpha$  (=0.05) settled before, it could be ensured the research rejected the null hypothesis and accept the alternative hypothesis. Thus, it meant there was also an obvious significance between genders' literature appreciation abilities in statistics. Thus, Hypothesis 1, having both mathematical and statistical differences and significance between literature appreciation ability of male students and female students, holds.

To test and verify Hypothesis 3, the standard deviation was used. The formula of standard deviation (2) was shown behind, and it took male students' literature appreciation scores as an example.

$$\sigma = \sqrt{\frac{1}{n_b - 1} \sum_{i=1}^{n_b} (X_i - \bar{X})^2} \tag{2}$$

The results of both arithmetic average and standard deviation of each gender group were shown in Table 2. As shown in Table 2, female students' literature appreciation ability was better than that of male students in the arithmetic average score part.

**Table 2.** Descriptive results (M and SD) of students' literature appreciation ability

Group Statistics				
	Gender	Numbers of Sample	Arithmetic Average	Standard Deviation
Score	Female students	44	7.41	1.403
	Male Students	73	6.73	1.228

See as a standard deviation representing the degree of dispersion between data in each group. The standard deviation of female students was 1.403 which was a bit stronger than male students' 1.228, meaning that female students had a high degree of dispersion. Therefore, due to the standard deviation, it could tell that female students' literature appreciation scores fluctuated more than male students', disapproving of Hypothesis 3.

**3.2. Findings**

As a conclusion for the whole study, it showed that there is a mathematical and statistical significance in genders' literature appreciation abilities, and female students showed greater ability than male students in literature appreciation. Nevertheless, female students' literature appreciation scores fluctuated more than male students. In other words, Hypothesis 1 & 2 had been approved, but the result of standard deviation disagreed with Hypothesis 3.

**4. DISCUSSION**

**4.1. Results Explanation**

As the finding has already pointed out, Hypothesis 1 & 2 have already been approved by data analysis. Nonetheless, the results of the study disagreed with Hypothesis 3.

**4.1.1. Approved Reasons of Hypotheses 1&2**

For being verifying, both mathematical and statistical significance have shown in genders' literature appreciation abilities (Hypothesis 1), and in this field, female students held stronger abilities than male students (Hypothesis 2). To tell the reasons why these hypotheses came into existence, research results of genders' differences from different academic fields should be carefully thought about.

From education, the result of a peace education program revealed that Jewish and Arab female high school students were more dovish than the males to use peaceful and diplomatic methods to gain their achievements or face conflicts [28]. And consisted with past studies, most females reported positive attitudes and gratitude than males [29]. For having greater empathized ability which has been found its ways for having impacts into mainstream practices (e.g., customer service; [30]), it is female's gift to understand and have heart-resonances with others' experience and feelings not only narrowed in reality but towards emotions literary works want to express by words for having functions and abilities to invoke people's imaginations (e.g., sympathy).

Besides, in line with social psychology theories which pointed that female is more easily influenced by peers, Han and Li [31] said that most female students had

respondents to peer influence, whereas male students did not. Being more influenced by peers means that female students have stronger empathy, they are much easier to perceive emotions from others and incorporate their feelings into others', including characters from literary works. Thus, it is not surprising for female students to get higher scores and have greater ability in the literature appreciation part.

#### *4.1.2. Disapproved Reasons of Hypotheses 3*

To explain the disagreement between the result and Hypothesis 3, two main possible reasons were considered. The first one is the possibility of randomization of chosen samples. Because of the under-estimation for the influence of factors like sample numbers and individualization, it might cause incorrect results [32]. To solve this problem, a cardinal number of samples should be larger. Thus, having incorrect results due to samples' contingency and cardinality was assumed to be one of the reasons.

Secondly, if the factors mentioned above did not affect the result, meaning that what the research got was true, it could also be interpreted. The overall literature appreciation scores of male students were weaker than female students, and noted that male students did not have that rich emotion expression and perception abilities than females. Therefore, their feelings' differences would not be that diversified, meaning that their feelings toward the same thing or people (e.g., film characters and their experience) would not be that different in their group than in females'. And the level of literature appreciation would not fluctuate more than female students.

#### *4.2. Limitations*

The study got limitations for a number of reasons. Firstly, it was the students' diversities which could not be greatly considered and controlled in this plan, for instance, some already-considered factors like students' family backgrounds, their daily educational atmospheres, comprehensive learning abilities, personalities, and attitudes towards both interests of literature appreciation and the teacher, and so on. Secondly, this research took Chinese students as the samples. Students' cultural backgrounds might be a strong confounding variable if it is going to test students from a different culture.

And then, the number of samples was limited due to factors mentioned above which had already been fully considered for having possible impacts on the results. Thus, samples seemed to be a little bit single and simple to approve and verify. Nevertheless, there also might be some factors that still not be noticed or considered in this plan. And the study only chose two classes classified by gender, the futurity could not be ignored.

### *4.3. Implications & Future Directions*

#### *4.3.1. Implications*

The research thought out of the box for both educators and learners to improve students' examination scores and enhance their practice with a clear and straightforward orientation. The research also filled up the lack of studies for gender differences in literature appreciation abilities. The results could give the front-line teachers a way to emphasize different parts of study abilities according to the gender differences, providing them a thoughtful method to separate male students and female students' education and then let them focus on their relative weaknesses, handle and solve them with the guidance of teachers.

#### *4.3.2. Future Directions*

Take both limitations and implications as considerations, the study provided another train of thinking of teaching. For future directions, researchers should consider factors that were considered unconsidered in this study as confounding variables to check the results and gain more precious consequences, ensuring and protecting the validity and reliability for the results of gender difference in literature appreciation. Also, it is important for researchers to think about the cultural backgrounds of samples, which means students in this kind of study. Compared the results of Chinese students' gender differences in this test and the results of students from other countries or other cultural backgrounds, like European students or African students, in literature appreciation abilities, it may gain different or similar results to this study. Summarizing research results and completing parts of the vacancy in this academic field and offering new and free teaching methods for teachers, students' development can be greater education strategies may become more integrated. A brighter and better education future, some more humanized and personalized teaching methods can be expected not just narrowed in some specific countries or cultures.

### **5. CONCLUSION**

In summary, this paper argued that if there is a gender difference in high school students' literature appreciation ability under the emotional education system. The main conclusion can be drawn that gender difference exists in this study, and female students have better literature appreciation abilities than male students. However, female students' literature appreciation scores fluctuate more than male students. These findings may be concerned by front-line teachers and educators expected to find a more efficient and critical teaching method due to gender differences between female and male students. Gaining this result, it will provide the backgrounds and

prerequisites for the improvement of humanistic quality education.

## REFERENCES

- [1] Li, S. L. (2002). On the humanistic significance of emotion education in Chinese classical literature. *Journal of Ningxia University (Humanities and Social Sciences)*, 24(006), 84-88. DOI:10.3969/j.issn.1001-5744.2002.06.020
- [2] Liao, H. C. & Wang, Y. (2011). Using Appreciative Pedagogy to Teach Literature to ESL Students. *Asian Journal of University Education*, 7(2), 21-34.
- [3] Lee, S. S. (2018). The effects of literature activities using masterpiece appreciation on young children's creativity, character, and language expression. *Parenting support research*, 13 (4), 151-178. DOI:10.16978/eccc.2018.13.4.007
- [4] Ren, N. Y. (2013). On the humanistic significance of emotion education in Chinese classical literature. *Journal of Teacher Education*, 11(5), 121-122.
- [5] Nilsen, A. & Donnellson, K. (2009). Understanding the stages of literary appreciation. *Literature for Today's Young Adult*, 8, 10-16.
- [6] Magulod, G. C. (2018). Innovative learning tasks in enhancing the literary appreciation skills of students. *SAGE Open*, 8(4). DOI:10.1177/2158244018820382
- [7] Garrison, K. C. & Mabel Thomas, K. C. (2015). A Study of Some Literature Appreciation Abilities as they Relate to Certain Vocabulary Abilities. *The Journal of Educational Research*, 22(5), 396-399. DOI:10.1080/00220671.1930.10880112
- [8] Rahmawati, L. E., Al-Ma'Ruf, A. I., & Pratiwi, D. R. (2016). Peningkatan kompetensi mengapresiasi sastra melalui siaran pembinaan bahasa indonesia di radio republik indonesia surakarta. *Warta LPM*, 19(1), 21. DOI:10.23917/warta.v19i1.1981
- [9] Praver, S. S. (2008). The Dog, the Knight, and the Squire Sigmund Freud's Reading of Cervantes. *Oxford German Studies*, 37(1), 74-91. DOI:10.1179/174592108x334454
- [10] Inderawati, R. (2012). The Development of Literary Appreciation Instrument in Building Students' Character. *Sino-US English Teaching*, 9(2), 937-945. DOI:10.17265/1539-8072/2012.02.007
- [11] Chae, J. (2003). Educational Effects of Literature Extension Activities: A Review on Research Papers. *Journal of Children's Literature and Education*, 4(1), 1-20.
- [12] Tribana, I. G. K. (2014). Multitafsir Materi Sastra pada Ujian Nasional: Studi Kasus di SMAN 8 Denpasar. *Journal of Balinese Studies*, 4(1).
- [13] Li, H. (2014). How to cope with the question of character image appreciation in modern essay reading of college entrance examination. *Extra-lingual Learning: High School Chinese Teaching*, 1(11), 69-70.
- [14] Feng Y. (1999). Analysis of characters and learning to appreciate novels. *Journal of College of Literature, Nanjing Normal University*(10), 64-66. CNKI:SUN:NJSD.0.1999-10-060
- [15] Hakami, A. R. (2021). Effect of absenteeism on the performance of medical sciences students: gender differences. *Medical education online*, 26(1), 1875531. DOI:10.1080/10872981.2021.1875531
- [16] Burns, J. & Bracey, P. (2001). Boys' underachievement: issues, challenges and possible ways forward. *Westminster Studies in Education*, 24(2), 155-166. DOI:10.1080/01406720120069507
- [17] Clark, M. A., Lee, S. M., Goodman, W., & Yacco, S. (2008). Examining Male Underachievement in Public Education: Action Research at A District Level. *NASSP Bulletin*, 92(2), 111-132. DOI:10.1177/0192636508321155
- [18] Matteucci, M. & Mignani, S. (2021). Investigating gender differences in mathematics by performance levels in the Italian school system. *Studies in Educational Evaluation*, 70. DOI:10.1016/J.STUEDUC.2021.101022
- [19] Fan, X. (2011). Intelligent Information Technology Application Association. *Proceedings of 2011 International Conference on Applied Social Science*, 4, 72-76.
- [20] Nissen, J. M. (2019). Gender differences in self-efficacy states in high school physics. *Physical Review Physics Education Research*, 15(1). DOI:10.1103/PhysRevPhysEducRes.15.013102
- [21] Chaplin, T. M. (2015). Gender and emotion expression: a developmental contextual perspective. *Emotion Review Journal of the International Society for Research on Emotion*, 7(1), 14. DOI:10.1177/1754073914544408
- [22] Fischer, A. H., Mosquera, P. M. R., van Vianen, A. E. M., & Manstead, A. S. R. (2004). Gender and Culture Differences in Emotion. *Emotion*, 4(1), 87-94. DOI:10.1037/1528-3542.4.1.87
- [23] Kessels, U. & Steinmayr, R. (2013). Macho-Man in School: Toward the Role of Gender Role Self-Concepts and Help Seeking in School Performance.

- Learning and Individual Differences, 23, 234-240.  
DOI:10.1016/j.lindif.2012.09.013
- [24] Mundorf, N., Bhatia, A., Zillmann, D., Lester, P. & Robertson, S. (1988). Gender differences in humor appreciation, 1(3), 231-244.  
DOI:10.1515/humr.1988.1.3.231
- [25] Igbokwe, D., Ola, B. A. & Ndom, R. J. E. (2016). Gender differences in the manifestation of brain fog, depression and indices of anxiety among secondary school students in Nigeria. *European Psychiatry*, 33, 154-154. DOI:10.1016/j.eurpsy.2016.01.282
- [26] Mcmillan, J. H., & Schumacher, S. . (1997). *Research in education : a conceptual introduction*. Beltwide Cotton Conferences, 9.
- [27] Jacob, B., & Rothstein, J. (2016). The measurement of student ability in modern assessment systems. *Journal of Economic Perspectives*, 30(3), 85-108. DOI:10.2307/43855702
- [28] Yablon, Y. B. (2009). Gender differences in peace education programs. *Gender and Education*, 21(6), 689-701. DOI:10.1080/09540250902748192
- [29] Lasota, A., Tomaszek, K., & Bosacki, S. (2020). Empathy, Resilience, and Gratitude: Does Gender Make a Difference? *Anales De Psicologia*, 36(3), 521-532. DOI:10.6018/analesps.391541
- [30] Thexton, T., Prasad, A., & Mills, A. J. (2019). Learning empathy through literature. *Culture and Organization*, 25(2), 83-91. DOI:10.1080/14759551.2019.1569339
- [31] Han, L., & Li, T. (2009). The gender difference of peer influence in higher education. *Economics of Education Review*, 28(1), 129-134. DOI:10.1016/j.econedurev.2007.12.002
- [32] Tian, G. L. & Li. H. Q. (2017) [1] Tian, G. L., & Li, H. Q. . (2015). A new framework of statistical inferences based on the valid joint sampling distribution of the observed counts in an incomplete contingency table. *Statistical Method in Medical Research*, 26(4), 1712-1736. DOI:10.1177/0962280215586591