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The Influence of English Literacy on High School Students' Academic Achievement

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Abstract. In the digital age, English literacy is one of the key competences for high school students. This study aimed to explore the relationship between English literacy and academic achievement. To this end, the four-dimensional English literacy scale by the *General High School English Curriculum Standard (2017 Edition, 2020 Revised Edition)* set was used, and 446 high school students participated in the survey in March 2022. The results indicate no significant difference in English literacy between male and female students. Moreover, the structural equation model results showed that (1) Language ability significantly predicted cultural consciousness, thinking quality, and learning ability; (2) Thinking quality and learning ability correlated with students' academic achievement; (3) Nevertheless, cultural consciousness did not predict academic achievement; and (4) Learning ability mediated between language ability and academic achievement. This conclusion highlights that cultivating students' learning ability and language ability can improve their academic achievement. Therefore, teachers should exert more effort to develop students' language ability and learning ability in the future.

Keywords: English literacy; language ability; cultural consciousness; thinking quality; learning ability; academic achievement

1. Introduction

Curriculum standards need to be changed to meet the literacy standards required for student development in the 21st century (Voogt & Roblin, 2012;

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Wang, 2018). The Ministry of Education in China published *Opinions on Comprehensively Deepening the Curriculum Reform and Implementing the Fundamental Task of Building Morality and Cultivating People* (2014), which proposes that schools of all levels and types move on from the actual situation and revise the curriculum plan and curriculum standards. Moreover, according to the system applicable to students' core literacy development, the *New Curriculum Standard for Senior High School English* emerged.

Due to national policy and historical reasons, in China, English teaching at high schools has long been oriented by examinations and scores, which means teachers focus on book knowledge and neglect the comprehensive cultivation of English literacy (Gong, 2014; Wang, 2018). However, with the development of the digital age and a society oriented to lifelong learning, it is far from enough for students to have only textbook knowledge. Only when students learn English literacy can they acquire competences and basic qualities of the English language.

The research on English core literacy mainly focuses on its concept and constituent elements (Cheng & Zhao, 2016; Sun, 2015), evaluation methods (Huang, 2016), and cultivation strategies (Chen & Liu, 2016; Wang & Li, 2019). However, the relationship between English literacy and academic achievement has not been extensively studied. Therefore, this research aimed to explore the relationship between high school students' English literacy and their academic achievement through structural equation modeling (theoretical model and competitive model), and then, improving their academic achievement by cultivating English literacy. The following were the research questions:

- (1) What is English literacy level of high school students?
- (2) Is there a relationship between students' English literacy and their academic achievement?
- (3) Does high school students' academic achievement improve through English literacy?

2. Literature review

2.1 English literacy

English literacy covers a system of knowledge and skills, processes and methods, emotional attitudes, and value education (Mei, 2016). In particular, China's *General High School English Curriculum Standard (2017 Edition, 2020 Revised Edition)* suggests that the core literacy goals for English subjects involve four elements: language competence, cultural consciousness, thinking quality, and learning ability (Ministry of Education, 2020).

Language ability refers to competence in comprehensively using language in social situations, and is a direct manifestation of high school students' English literacy (Sun, 2015). Moreover, language ability refers to not only the language comprehension ability that is formed by listening, speaking, reading, and writing, but also the ability to express oneself in a language, which is gradually formed and developed through learning and practice. Therefore, English

language ability constitutes the fundamental element of English literacy (Ministry of Education, 2020).

Cultural consciousness refers to not only students' understanding of domestic and foreign cultures, appreciation of traditional culture and excellent culture, but also involves students' cultural identification ability in the context of globalization, that is, an ability to compare, summarize and explain cultural phenomena, and to form their own cultural opinions and attitudes, and behavioral orientations (Cheng & Zhao, 2016).

Thinking quality is described as the competence and reflection level in relation to aspects of logic, criticality, and innovation. Thinking quality embodies the intellectual features of English literacy. On the one hand, developing thinking quality is conducive to improving students' analytic skills and problem-solving. It can encourage students to recognize and comprehend the world from a cross-cultural perspective, and shape appropriate value judgments about things (Ministry of Education, 2020).

Learning ability describes the awareness and competence of students to actively apply English learning strategies, access English learning resources from multiple approaches, and attempt to upgrade their English learning efficiency. Therefore, learning ability is a crucial prerequisite for and assurance of the improvement of English literacy (Ministry of Education, 2020).

The relationship between the four elements is as follows: Language ability constitutes a fundamental element of English literacy; cultural consciousness manifests the value orientation of English literacy; thinking quality demonstrates the intellectual characteristics of the development of English literacy, and learning ability constitutes an important condition for and guarantee of the development of English literacy (Ministry of Education, 2020).

2.2 Academic achievement

Academic achievement is the degree to which a student meets their short or long-term education objectives, and is usually evaluated by test scores (e.g., final exam scores) (Woodcock et al., 2001). In China's education system, test scores are frequently used to gauge students' academic progress. More specifically, the student's scores in major subjects, such as Chinese, mathematics and English, are considered reliable measures of academic achievement (Chen et al., 1997).

Students are not only the subject of learning, but also the subjects of evaluation (Wang, 2017). Students, as the main participants in the evaluation process, should be encouraged to self-evaluate and peer-evaluate. They should constantly reflect on the evaluation and summarize their experiences (Ministry of Education, 2020). Some scholars have pointed out that predicting academic achievement should include a wider range of factors, such as students' self-assessments and scores (Kerstjens & Nery, 2000; Park & Li, 2022).

English competence should be guided by English literacy, should pay attention to the diversity and rationality of evaluation methods, and realize the combination of formative evaluation and comprehensive evaluation (Ministry of Education, 2020). In this study, formative assessment refers to the assessment of students' self-learning of English, and comprehensive assessment refers to students' final exam scores. Both constitute students' academic achievement.

2.3 The relationship among variables

Language ability is the foundation of English literacy. Cultural consciousness, thinking quality, and learning ability refer to the expansion and extension of language ability; that is, the growth of language ability can aid in the growth of cultural consciousness, thinking quality and learning ability (Sun, 2015; Wang, 2018).

The curriculum standard lists cultural awareness as one of the teaching goals, which marks a shift from pragmatism to humanism in English teaching in high school. At the same time, it marks the pivotal position of cultural teaching in the context of English globalization (Zhang & Zhang, 2007). Besides, some researchers believe that students' perceptions of cultural diversity predict academic achievement (Chang & Le, 2010; Nasir, 2012; Tan, 1999).

English literacy also refers to people's thinking quality. Some scholars believe that language ability can promote the development of thinking quality (Chen et al., 2019; Gong, 2014). For example, English language learning positively affects students' thinking cognition (Gong, 2014). Language has the ability to enrich someone's way of thinking and develop thinking ability further (Chen et al., 2019). Moreover, some scholars believe that developing students' thinking quality can improve students' academic achievement (Zhang, 2001). For example, Zhang (2001) surveyed students in mainland China and Hong Kong and proposes that thinking styles contributed positively to academic achievement.

Language ability requires learners to not only understand and express themselves through application of various language skills, but also to have a certain learning ability. With the assistance of various learning strategies, learners should actively expand and apply various learning skills, and carry out constructive learning through perception, prediction, analysis, generalization, comparison and innovation (Chen & Liu, 2016). Moreover, several studies have shown that learning strategies are related to achieving academic scores (Dignath & Büttner, 2008; Ramdiah & Corebima, 2014; Zimmerman, 1989).

2.4 Research model

From the above analysis of existing research, it can be seen that there is a significant correlation between language ability, cultural consciousness, thinking quality, learning ability and academic achievement. On this basis, a theoretical model and a competition model were established. The specific models and evidence are as follows.

As far as the four elements of English literacy are concerned, language ability is the most fundamental element, as it can promote the development of cultural awareness, thinking quality, and learning ability (Ministry of Education, 2020; Sun, 2015). Besides, language ability has been confirmed to be a vital contributing factor to students' academic achievement (Chen & Sun, 2006). Moreover, research is finding, more and more, that students' academic performance is significantly influenced by their level of English proficiency (Fakeye & Ogunsiji, 2009; Sahragard et al., 2011), by students' perceptions of cultural diversity (Chang & Le, 2010; Nasir, 2012; Tan, 1999), thinking styles (Chen et al., 2019; Zhang, 2001), and learning strategies (Dignath & Büttner, 2008; Ramdiah & Corebima, 2014; Zimmerman, 1989).

Therefore, a theoretical model with language ability as the independent variable, cultural consciousness, thinking quality and learning ability as mediating variables, and academic achievement as the dependent variable, was developed by this study; the relationships among the variables in the theoretical model are shown in Figure 1.

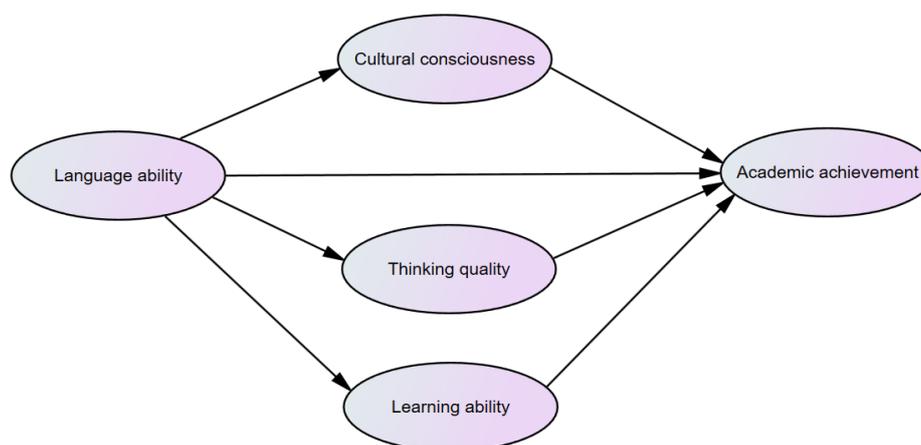


Figure 1: Theoretical model

However, some research claims that language ability does not directly affect academic achievement (Dev & Qiqieh, 2016; Oliver et al., 2012). For example, Dev and Qiqieh (2016) investigated the correlation between English language proficiency and academic achievement of non-native English speakers, and found no direct association. Another study, by Oliver et al. (2012) over three years with 5,675 undergraduate and graduate students, wanted to determine whether English language proficiency was sufficient to ensure academic achievement. Based on these arguments, this study constructed the competition model (See Figure 2), which assumes that language ability does not directly impact students' academic achievement.

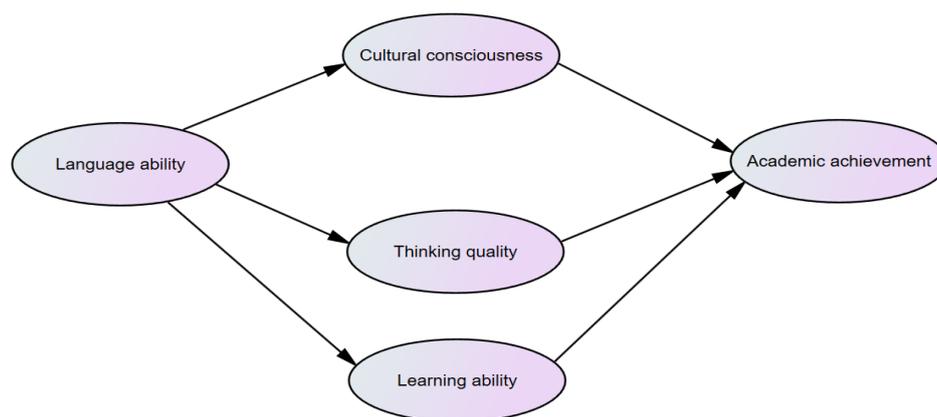


Figure 2: Competition model

3. Methodology

In order to verify the validity of the model proposed in Figure 2, this study adopted quantitative research methods to collect, process, and analyze data. This study collected data from a large population to analyze and discuss the relationship between students' English literacy and academic achievement.

3.1 Participants

In this study, the participants were sophomores randomly selected from three high schools in Shandong Province, China. The regulations of the Education Bureau forbid high school students to bring mobile phones to school, so paper questionnaires were issued to carry out the survey. A total of 620 surveys were issued, of which 523 were recovered. SPSS 26.0 was used to encode the survey data, and invalid data were deleted. Finally, 446 surveys were retained, with an effective rate of 85.2%. Moreover, the participants and data were used in the co-author's dissertation (Zhang, 2022), though the main hypotheses and research models were designed separately.

3.2 Measures

3.2.1 English literacy

The scale used was adapted from the *General High School English Curriculum Standard (2017 Edition, 2020 Revised Edition)* (Ministry of Education, 2020). The scale is divided into four dimensions: language ability (23 items), cultural consciousness (20 items), thinking quality (11 items), and learning ability (20 items). On a 5-point Likert scale, responses range from 1 (never able to) to 5 (entirely able to). The reliability and validity of the formal scale were explored using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The Cronbach's alpha values for language ability, cultural awareness, thinking quality, and learning ability were .898, .875, .891, and .855, respectively, indicating a reasonably good level of internal consistency. Moreover, the average variance extracted (AVE) is greater than 0.50 (from .587 to .678), and construct reliability (CR) is more significant than 0.70 (from .857 to .901), which indicates that the data is suitable (Fornell & Larcker, 1981).

3.2.2 Academic achievement

Academic achievement consists of two parts: self-assessment and English scores (Kerstjens & Nery, 2000; Park & Li, 2022). Self-assessment refers to the participants' rating of their English learning on a 5-point scale of low, average, fair, good, and excellent. The English score was based on the students' final English course test scores (0–150) of the previous semester. The test paper used by the students was compiled by the Education Bureau of Weifang City, Shandong Province. The standard for measuring the test paper generally involves difficulty and distinction. Difficulty is an indicator that measures the degree of difficulty of the test paper; generally, a degree of difficulty of between 0.4 and 0.7 is appropriate. The degree of distinction (D) of the test paper is an index to distinguish students' learning level, and its criteria are as follows: if $D > 0.4$, the test questions are considered to be excellent; if $0.39 > D > 0.3$, it is a good test question; if $D < 0.2$, test questions should be discarded (Liu, 2018). After calculation, the difficulty of the English test paper used in this study was found to be 0.46, and the discrimination was 0.59, which indicate that the quality of the test paper met the standard.

3.3 Procedures

In order to achieve the expected results of the scale, a pilot test was conducted, and 78 samples were recovered. EFA was performed with SPSS 26.0. Factor loading coefficients were less than 0.5, and some indistinguishable items were removed. The formal survey was conducted from March 16 to 30, thus, for two weeks. Surveys returned with the same answer for all items, or with less than 1 minute response time, were deleted. The final results are as follows: 5 items of language ability, 5 items of cultural consciousness, 4 items of thinking quality, and 4 items of learning ability. The survey commissioned English teachers from three high schools to distribute paper surveys during recess. The teacher informed all participants of the purpose of the study and obtained their consent. Participants filled out the survey within 25 minutes under the guidance of the English teacher.

This study adopted the following research steps and methods to process the collected survey data. Firstly, SPSS 26.0 was used to analyse the reliability, EFA, frequency, and correlation of the collected data. Secondly, this study used AMOS 26.0 for CFA and convergent validity. Finally, AMOS 26.0 was adopted to test and select an optimal structural equation model for mediation analysis.

4. Results

The data analysis was done according to four steps. First, descriptive analysis was undertaken to determine the participants' English literacy levels. Second, an independent sample t-test was used to compare the English literacy and academic achievement by gender. Thirdly, Pearson correlation analysis was used to verify whether language ability, cultural consciousness, thinking quality, learning ability, self-assessment, and English score were related. Finally, structural equation modeling was used to explore the effects of language ability, cultural consciousness, thinking quality, and learning ability on academic achievement.

4.1 Descriptive Analysis

Firstly, the results show that the analyzed data followed a normal distribution. As seen in Figure 3, the mean values of language ability, cultural consciousness, thinking quality and learning ability are 2.889, 3.037, 2.870, and 2.968, respectively. Regarding students' English literacy, the mean level of cultural consciousness is the highest, and the mean level of thinking quality is the lowest.

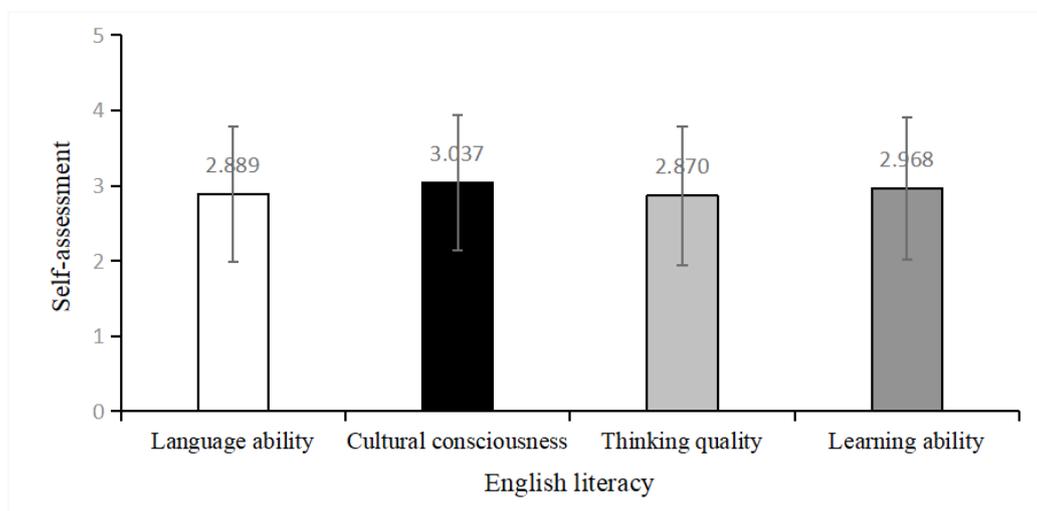


Figure 3: Mean values of English literacy

English scores were divided into a low score group (0-69, 143 students), a medium score group (70-109, 248 students) and a high score group (110-150, 55 students). As seen in Figure 4, the level of cultural consciousness was the highest in the medium and low score groups, but the lowest in the high score group. In contrast, in the high score group, students' learning ability and thinking quality were more prominent.

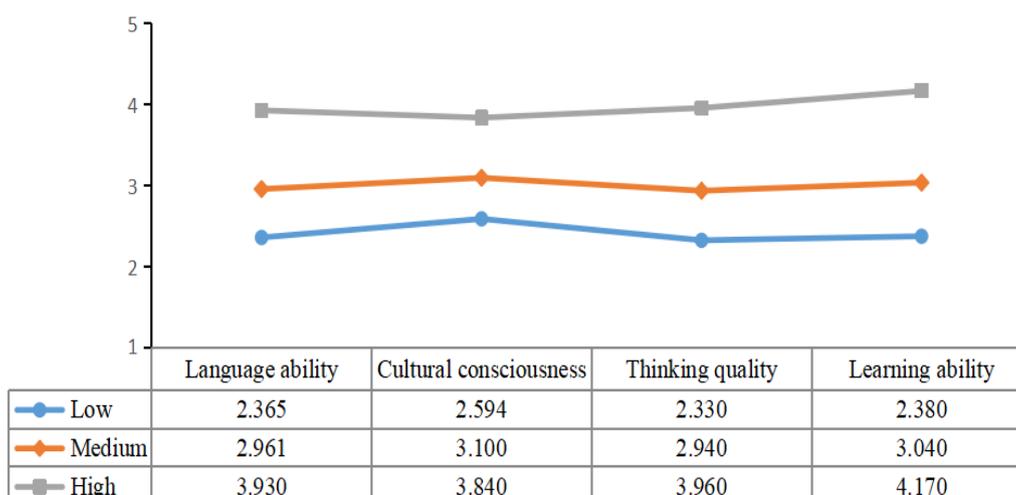


Figure 4: Mean values of English literacy for different groups

4.2 Independent samples t-test

The mean level on English literacy and academic achievement was compared by gender with the independent samples t-test (See Table 1). Between male and female students, there was no significant difference in language ability ($t=-1.045$), cultural consciousness ($t=-1.366$), thinking quality ($t=-.035$) and learning ability ($t=-1.630$), self-assessment ($t=.171$) and English score ($t=.214$). Therefore, there is no discernible difference in English literacy and academic achievement between male and female students.

Table 1: Results of the independent samples t-test

(N=205 Male, 241 Female)

Variable	Gender	Mean	SD	SE	t-test	P
Language ability	Male	2.841	.964	.067	-1.045	.297
	Female	2.930	.842	.054		
Cultural consciousness	Male	2.975	.928	.065	-1.366	.173
	Female	3.091	.860	.055		
Thinking quality	Male	2.868	.963	.067	-.035	.972
	Female	2.871	.888	.057		
Learning ability	Male	2.888	1.005	.070	-1.630	.104
	Female	3.035	.886	.057		
Self-assessment	Male	2.420	1.098	.077	.171	.864
	Female	2.402	1.000	.064		
English score	Male	1.810	.677	.047	.214	.831
	Female	1.800	.602	.039		

4.3 Correlation

Pearson's correlation analysis found that language ability, cultural consciousness, thinking quality, learning ability, self-assessment, and English scores were significantly connected with one another. As data in Table 2 indicates, the correlation coefficient among the four dimensions of English literacy ranges from .700 to .809 ($p<.01$) - a significant positive correlation. The highest correlation is observed between thinking quality and learning ability ($r=.809$, $p<.01$); the second-highest correlation is between language ability and learning ability ($r=.780$, $p<.01$). However, the lowest correlation is between cultural consciousness and thinking quality ($r=.700$, $p<.01$).

The correlation coefficient between the four dimensions of English literacy and self-assessment ranged from .440 to .583 ($p<.01$). The highest correlation is observed between language ability and self-assessment ($r=.583$, $p<.01$). However, cultural consciousness has the lowest correlation coefficient with self-assessment ($r=.440$, $p<.01$).

The correlation coefficient between the four dimensions of English literacy and English score ranges from .427 to .567 ($p<.01$). The highest correlation is the relationship between learning ability and English score ($r=.567$, $p<.01$). In turn,

the lowest correlation is between cultural consciousness and English score ($r=.427$, $p<.01$).

Table 2: Correlation analysis between variables

Variable	LA	CC	TQ	LAB	SA	ES
LA	1					
CC	.710***	1				
TQ	.743***	.700***	1			
LAB	.780***	.716***	.809***	1		
SA	.583***	.440***	.529***	.538***	1	
ES	.525***	.427***	.530***	.567***	.561***	1

Note: *** $p<.001$. LA=Language Ability, CC=Cultural Consciousness, TQ=Thinking Quality, LAB=Learning Ability, SA=Self-assessment, ES=English Score

4.4 Research model test

This section reports on the tests of fitness of the theoretical model and the competition model, of which the test indices are chi-square statistic (χ^2), χ^2/df ratio, the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root-mean-square error of approximation (RMSEA). By synthesizing various fitting indices (see Table 3), it was found that the fit indices of the theoretical model and the competition models meet the corresponding evaluation standards. Therefore, it is necessary to select the best model from the two models.

The chi-squared difference test is one of the ways to compare the two models (Satorra & Bentler, 2010). That is, $\Delta df=1$, $\Delta\chi^2=3.93$ (>3.84), $p<.05$, which means the two models are significantly different. However, the chi-square test can only verify whether the model is significant, but cannot determine which model is better. Therefore, other indicators, such as Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC), were needed to evaluate the models. When the data-generating model has broad influence and takes into consideration simple candidate models, the BIC outperforms the AIC with zero/one loss (Vrieze, 2012). The competition model has the smallest BIC value in this study, so it was selected as the research model (see Figure 5).

Table 3: Fitness Index of the Theoretical Model and Competition Models

Model	df	χ^2/df	P	CFI	TLI	RMSEA	BIC
Theoretical Model	163	2.637	.000	.956	.948	.061	716.569
Competition Model	164	2.645	.000	.955	.948	.061	714.399

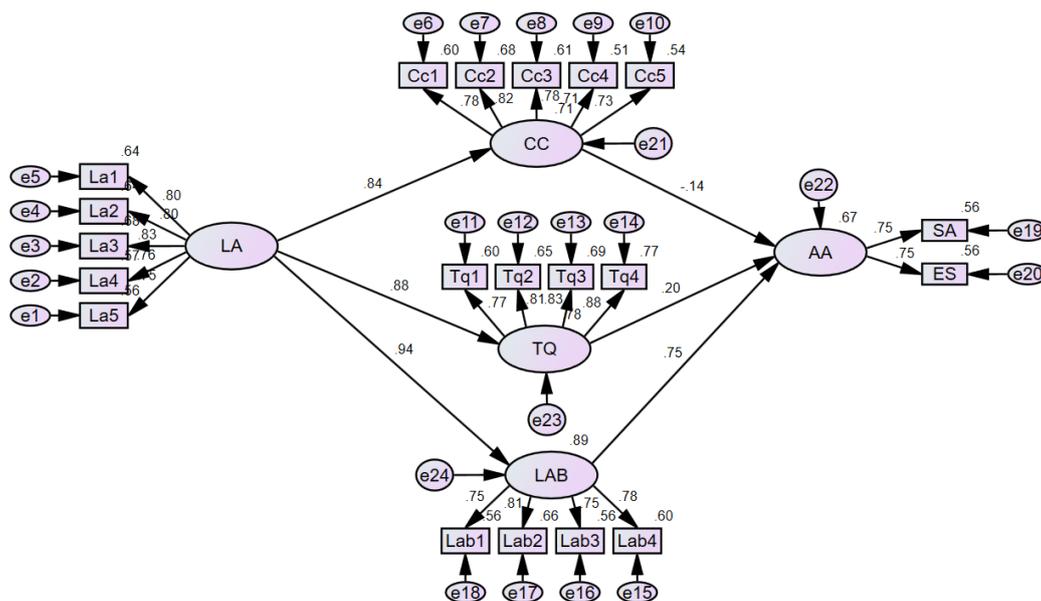


Figure 5: Standardized path coefficients in research model

Note: LA=Language Ability, CC=Cultural Consciousness, TQ=Thinking Quality, LAB=Learning Ability, AA=Academic Achievement

As seen in Table 4, most path coefficients were significant, except for the correlation between cultural consciousness and academic achievement. Specifically, language ability has a significant positive predictive effect on cultural consciousness ($\beta=.843$, $p<.001$), thinking quality ($\beta=.882$, $p<.001$) and learning ability ($\beta=.945$, $p<.001$). Moreover, thinking quality contributes significantly to academic achievement ($\beta=.204$, $p<.05$), and learning ability has a profoundly positive impact on academic achievement ($\beta=.750$, $p<.001$).

Table 4: Path coefficient of competition model

Path	β	B	SE	t	Support
LA → CC	.843	1.057	.073	14.575***	Supported
LA → TQ	.882	1.011	.067	15.110***	Supported
LA → LAB	.945	1.096	.069	15.963***	Supported
CC → AA	-.136	-.115	.077	-1.494	Rejected
TQ → AA	.204	.189	.095	1.993*	Supported
LAB → AA	.750	.686	.117	5.855***	Supported

Note: * $p<.05$, *** $p<.001$.

This study used bootstrapping to test the mediating effect, and the sampling times are 2,000. As shown in Table 5, only learning ability mediated language ability and academic achievement significantly, with an indirect effect value of .752 (SE=.227, Bias-corrected 95% CI=[.394, 1.293]). The confidence interval does not contain 0, and $p<.001$, which indicates that learning ability is a key mediator between language ability and academic achievement.

Table 5: Mediation effect test of structural model

Path	Point Estimate	Product of Coefficients		Bootstrap 2,000 times 95% CI Bias-corrected		
		SE	Z value	Lower	Upper	P
LA → CC → AA	-.121	.179	-.675	-.528	.171	.469
LA → TQ → AA	.191	.115	1.661	-.020	.434	.078
LA → LAB → AA	.752	.227	3.312	.394	1.293	.001
Total indirect effect	.821	.072	11.403	.693	.978	.001

5. Discussion

In accordance with the research questions, the research results were divided into three parts. First, it described the mean level of students' English literacy. Second, it analyzed the relationship between students' English literacy and their academic achievement. Third, the structural equation model was used to explore whether the path between English literacy and academic achievement is significant.

Firstly, the mean values of language ability, cultural consciousness, thinking quality and learning ability range from 2.870 to 3.037, with only cultural consciousness higher than the median score of the three groups, which means the level of students' English literacy was weak. As for the three groups with high, medium and low English scores, cultural consciousness was the highest in medium and low groups, while thinking quality was the lowest in medium and low groups. In the high group, students had the highest level of learning ability and the lowest level of cultural consciousness, which indicates that different learning methods should be provided for different students. For students in the middle and low groups, teachers can focus on cultivating students' thinking quality, while in the high groups, teachers should improve students' cultural consciousness. Students should be taught according to their aptitudes and their all-around development should be promoted (Yang et al., 2022). Moreover, this study used a t-test to determine whether gender plays a role in students' English literacy. The results are that English literacy did not differ significantly between male and female students (Dev & Qiqieh, 2016).

Secondly, the Pearson correlation analysis revealed significant correlations among the four variables of English literacy and academic achievement. As for the four sub-factors of English literacy, cultural consciousness has the lowest correlation with the other three factors. In terms of academic achievement, cultural consciousness was also the least correlated with self-assessment and English scores. This may be because, in the past, cultural education mainly involved providing cultural background knowledge, and failed to cultivate students' cultural criticism consciousness, cultural identity and intercultural communication ability to a deep level (Zhang & Zhang, 2007).

Thirdly, the path coefficient between English literacy and academic achievement was confirmed by using the structural equation model. According to other research findings, language ability can promote the development of thinking

quality, cultural consciousness, and learning ability (Ministry of Education, 2020; Sun, 2015; Wang, 2018). In particular, previous researchers have found that promoting students' perceptions of culture leads to positive academic outcomes (Chang & Le, 2010; Nasir, 2012; Tan, 1999). Nevertheless, in this study, cultural consciousness did not significantly predict academic achievement. The acquisition of cultural knowledge is not only through English learning – much cultural knowledge may be acquired from other disciplines, or transferred from extracurricular acquisitions. At the same time, cultural consciousness will also be affected by other factors (Xia, 2018).

Furthermore, thinking quality has been discussed in relation to predicting academic achievement (Cano-Garcia & Hughes, 2000; Zhang, 2001). However, this study generated no empirical evidence that thinking quality mediates the association between language ability and academic achievement. One of the possible explanations is that high school students are in their adolescence, and their thinking is in a development stage, so their logical thinking ability and critical thinking ability are relatively weak (Chen et al., 2019).

Finally, this study contributes to understanding of the connection between learning ability and academic achievement. Learning ability plays a key mediating role in the interrelation between language ability and academic achievement. The results show that, as students' language ability increases, so does their learning ability, which improves their academic achievement and thereby creates a positive learning cycle (Fakeye & Ogunsiji, 2009; Guglielmi, 2008; Sahragard et al., 2011).

Moreover, as the results from this study show, language ability is not only the foundation of English literacy, but also facilitates the development of cultural consciousness, thinking quality and learning ability (Ministry of Education, 2020; Sun, 2015).

6. Conclusions

English literacy not only represents the language proficiency and cultural consciousness contained in the English subject itself, but also illustrates the goal of students developing their thinking quality and learning ability through learning English. Therefore, we should, in conjunction with China's education status, continue to research and practice advanced teaching concepts, scientific teaching methods, and diversified evaluation applicable to English literacy, and devote ourselves to cultivating students' English literacy.

Firstly, the study demonstrated that high school students' English literacy level is relatively weak. On the one hand, it may be because English literacy has been promoted only in recent years, and a systematic teaching system has not yet been formed. On the other hand, due to the pressure of the college entrance examination, some teachers only pay attention to the students' English scores, while ignoring the cultivation of English literacy. Therefore, teachers should adopt diversified teaching methods and effectively combine English knowledge with English literacy to improve students' English literacy levels.

Secondly, the current findings confirm the relationship between English literacy and academic achievement. English literacy is significantly related to academic achievement. Therefore, teachers are required to carefully study curriculum standards and textbooks used for the teaching process, and to set goals for cultivating English literacy in their region and school. Teachers should focus on cultivating language ability, thinking quality, and learning strategies through the teaching process, and gradually improve students' English literacy levels. Furthermore, improving English literacy levels will contribute to the improvement of academic achievement.

Finally, learning ability and thinking quality predicted academic achievement. Based on the results, teachers should carefully design teaching activities and tasks, motivate students to think positively, and cultivate students' ability to discover, analyse and solve problems. Meanwhile, learning ability played a mediating role between language ability and academic achievement. Therefore, it is suggested that teachers add more teaching activities in the curriculum to improve students' language levels, enhance their learning ability, and improve their academic performance. High school is an important period for the development of students' learning ability. Therefore, teachers pursue cultivating students' learning ability as an important teaching goal, and provide conditions for students to improve their learning ability through the teaching process.

Certain potential limitations of this study need to be considered. First, in this study, academic achievement only included students' self-assessment and their English scores, and did not involve students' classroom performance and other evaluation methods. Therefore, the study needs to find ways to comprehensively evaluate English literacy and promote student development. Second, the small scope of the research study affected the survey results, and may not be sufficient to generalize to all high school students in China. Therefore, further validation and research are required to expand the scope. For example, researchers can use the same scale to conduct surveys at high schools in other provinces and cities in China, to determine high school students' English literacy levels and explore whether there is a relationship between their English literacy and academic achievement. Lastly, English teachers play a crucial role in enhancing their students' English literacy levels and academic performance. However, this research did not investigate and analyze English teachers' implementation of English literacy. In follow-up research, researchers should pay involve English teachers, and improve students' English literacy in a targeted manner.

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