



## A Study on Postgraduates' Satisfaction with Improvement of Critical Thinking by Using the English Textbooks Offered at Guilin Medical University

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### Abstract

*This paper aims to identify the factors related to postgraduates' critical thinking, measure students' overall satisfaction with the postgraduate English textbook offered at at Guilin Medical University, in China and suggest ways for its improvement. The research has demonstrated that the factors under the intellectual traits received the highest satisfaction, especially Perseverance, Empathy and Integrity. In contrast, factors under the intellectual standards got the lowest. The four lowest satisfaction factors were Breadth, Clarity, Precision, and Depth.*

**Key words:** postgraduate English textbook, students' satisfaction, Paul & Elder's theory, Critical thinking

### 1. INTRODUCTION

Students' Critical thinking has become a key topic the past decades in the scholarship of teaching and learning in the world, especially in the context of higher education( Lucas, 2019). The time Chinese scholars and educators realized and embarked on cultivating students' critical thinking seemed much later than that in the west. In 2018, Ministry of Education of the People's Republic of China and National Language Commission of the People's Republic of China released China's Standards of English Language Ability in both Chinese and English versions. It put special emphasis on critical thinking, which enables people to improve themselves in ability of criticizing, questioning, evaluating, and reflecting. People have reached a widespread consensus that critical thinking is an indispensable tool for people to equip with in this rapidly-changing society (Dower, 2003). Facione (1990) characterizes critical thinking as involving six core cognitive skills (analysis, interpretation, inference, evaluation, explanation, and self-regulation) as well as several dispositions (such as being fair-minded and open to alternative positions). Paul and Elder (2006) proposed a ternary structure, namely elements of thought, intellectual standards and intellectual traits. At the center of the pattern are the 8 elements of thought. In this structure, intellectual standards must be applied to the elements of thought so that learners can develop intellectual traits, which are Humility, Perseverance, Autonomy, Empathy, Fair-mindedness, Integrity, Courage and Confidence in reasoning.

Teachers, students, and textbooks are considered as the three major elements in the process of education. Many scholars believe that textbooks are the heart of education with regard to the fact that both teachers and students are to a large extent dependent on the books. Sheldon (1988) held that textbooks not only "represent the visible heart of any ELT program" but also offer considerable advantages for both the student and the teacher when they are being used in the ESL/EFL classroom. However, students' evaluation and satisfaction with affect textbooks' development and students performances. Marozzi (2012) pointed out that, with regards to the changes done in the educational organizations, there could be changes in the student satisfaction levels, and thus the student satisfaction should be constantly evaluated.

According to the literature review, many are focused on classroom teaching and pedagogy(Zhang, 2018 ; Chen ,2019; Zaida & Sofwan, 2015) , While many of the English textbook evaluation and satisfaction researches are centered on the principles of textbook compiling(Du & Bai, 2005), the design of the textbook(Huo, 2013), cultural factors (Zhang, 2021) learners' needs(Gao& Bai,2010), and material selection(Gao, 2012). Since critical thinking plays a critical role in textbook development and student performance and student growth, this leads to a research gap which this paper put to the research center to find out what factors matter and affect the medical postgraduates' satisfaction with the textbooks offered by the university. This paper proposes to measure the factors within the Paul&Elder's critical thinking structure to evaluate postgraduates' satisfaction with their critical thinking abilities in each dimension, including all the items in the 8 elements of thought, 9 intellectual standards and 8 intellectual traits.

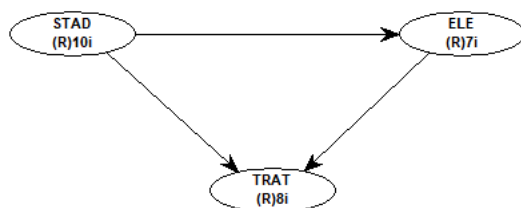
## 2. FRAMEWORK AND HYPOTHESIS

Hypothesis 1. *Intellectual Standards* are positively related to Elements of thought.

Hypothesis 2. Elements of Reasoning are positively related to Intellectual Traits.

Hypothesis 3. Intellectual Standards are positively related to Intellectual Traits.

Figure 1. Conceptual framework



### 3. METHODOLOGY

#### 3.1 Research Design

This study mainly focuses on students' satisfaction on improvement of the critical thinking skills by using the textbook named New Trend Medical English Course. The researchers used questionnaires as a mean to study the students' satisfaction and draw conclusions. Quantitative analysis and the inductive method are used to explore the topic. Data were collected by using a questionnaire from wjx. cn as a survey instrument. The questionnaire adopted has been explored under the framework of Paul and Elder' s critical thinking model, which includes 9 intellectual standards, 8 elements of thought and 8 intellectual traits. Our questionnaire consists of two parts. The first part is the student profile, and the second part is the three dimensions of critical thinking, containing 25 items on their satisfaction with intellectual standards, elements of reason and intellectual traits.

#### 3.2 Population and Sampling

The sample group is targeted at the first-year medical postgraduates who are studying at Guilin Medical University, and our investigators all above eighteen years old and all randomly selected. One hundred survey feedbacks were collected when the researchers closed the data collection.

#### 3.3 Instrument

The questionnaire was used to collect data from wjx. cn as a survey instrument. The structured questionnaire was formed into two parts. The first part is the student profile, and the second part is the three dimensions of critical thinking, containing 25 items related to their satisfaction with intellectual standards, elements of reason and intellectual traits. Every item was rated on a 5-point Likert scale, where higher scores indicate a higher satisfaction with their critical thinking. A validity and reliability test of the questionnaire shows the Cronbach's alpha value was at 0.766. Thus, the questionnaire is reliable.

#### 3.4 Data Collection Procedure

Several steps are done for gathering the research data: (1) an informed consent form was sent to the interviewees to explain the purpose of the research and the outline of the survey that the interviewee needs to complete (2) respondents were clarified by guidance if they are first-year graduate students and are using the specified textbook , (3) a link was sent to respondents to collect data, (4) the reply and the data received were checked and used for statistical analysis.

#### 3.5 Data Analysis

The research data were analyzed by Jamovi and Wrap PLS software. Descriptive tests were conducted, and the frequency table was given. Path analysis was used to test the significance between three variables and conclusion was drawn based on the hypotheses and analysis.

## 4. RESULTS

### 4.1 Profile of Respondents

By the end of the data collection period, 100 responses were received. Table 1 shows the demographic characteristics of the respondents. Gender, age, key school, and English performance of those who responded to the questions of the questionnaires were included.

There are 61 males and 39 females in the sampled postgraduates. The age group has been categorized into four groups. 17 percent of the sample is at the age of 22 (n=17); 29 students are at the age of 23 and 22 students are 24 years old; 19 percent of student is at the age of 25 (n=25); the rest who are 26 or above years old accounts for 13 percent. Classification of key school shows 58 percent (n=58) of respondents studied in key middle schools and the rest of respondents studied in regular school (n=42). Level of English performance presented 49 percent (n=49) of respondents respondents scored from 31 to 45 on English in their Graduate Entrance Examination; followed by 46-55 score level and 56-65 score level with 24 percent and 15 percent respectively. Only 12 percent (n=12) of them got 66 or above score on the examination. The table shows the frequency and the percentage of each variable as follows.

Table 1. Student profile descriptives

Frequencies	Levels	Counts	% of Total
Gender	Male	61	61.0%
	Female	39	39.0%
Age	22	17	17.0%
	23	29	29.0%
	24	22	22.0%
	25	19	19.0%
	26 or above	13	13.0%
Key school	Yes	58	58.0%
	No	42	42.0%
English performance	31-45 score	49	49.0%
	46-55 score	24	24.0%
	56-65 score	15	15.0%
	66 and above	12	12.0%

## 4.2 Satisfaction analysis

Respondents have been requested to level the satisfaction with the textbook on a Likert scale from strongly satisfaction (5) to strongly satisfaction (1). After collecting all the data were analyzed. Results of the satisfaction factors are presented in the Table 2. From the table, it can be found that the factors under the intellectual traits received the highest satisfaction, especially Perseverance, Empathy and Integrity with mean score respectively at 4.05, 4.04,4.04. In contrast, factors under the intellectual standards got the lowest. The four lowest satisfaction factors were Breadth (Mean=3.72), Clarity (Mean= 3.73), Precision (Mean=3.78) and Depth (Mean=3.78).

Table 2. Satisfaction factors descriptives

Dimension	Factors	N	Mean	SD	Minimum	Maximum
Intellectual standards	Clarity	100	3.73	0.874	1	5
	Accuracy	100	3.83	0.829	2	5
	Precision	100	3.78	0.836	2	5
	Relevance	100	3.86	0.853	2	5
	Depth	100	3.78	0.824	2	5
	Breadth	100	3.72	0.911	1	5
	Logic	100	3.86	0.739	3	5
	Significance	100	3.85	0.796	2	5
	Fairness	100	3.88	0.782	2	5
	Purposes	100	3.93	0.82	2	5
Elements of thought	Questions	100	3.82	0.903	2	5
	Points of view	100	3.82	0.881	1	5
	Information	100	3.8	0.829	2	5
	Concepts	100	3.85	0.869	1	5
	Assumption	100	3.86	0.888	1	5
Intellectual traits	Inferences	100	3.89	0.751	2	5
	Implications	100	3.88	0.795	2	5
	Humility	100	3.97	0.858	2	5
	Autonomy	100	3.98	0.816	2	5

Fair mindedness	100	3.99	0.823	2	5
Courage	100	4	0.829	2	5
Perseverance	100	4.05	0.796	2	5
Confidence	100	4.01	0.823	2	5
Empathy	100	4.04	0.803	2	5
Integrity	100	4.04	0.828	2	5

Figure 2 presents the model for a significant test with parameter estimation. The path between intellectual standard (STAD) and elements of reasoning (ELE) is significant ( $\beta=0.90$ ,  $p<0.01$ ) and the path between elements of reasoning and intellectual traits (TRAT) is also significant ( $\beta=0.39$ ,  $p<0.01$ ). Additionally, the path between STAD and TRAT is likewise significant ( $\beta=0.45$ ,  $p<0.01$ ).

Figure. 2 The framework model with parameter estimate

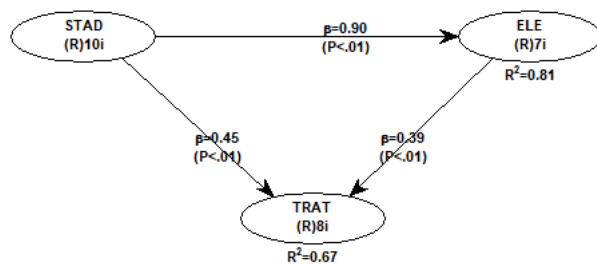


Table 3 describes the framework model. Analysis of data indicated that intellectual standard affects elements of reasoning ( $\beta=0.901$ ,  $p<0.001$ ). The positive path coefficient magnifies that the dimension of intellectual standards increases the students' elements of reasoning level. The defect size of the path from the intellectual standard to elements of reasoning is large (Cohen's  $f^2=0.812$ ). The finding suggests the H1 is supported. On the other hand, elements of reasoning affect intellectual traits ( $\beta=0.394$ ,  $p<0.001$ ). The positive path coefficient signifies that elements of reasoning and increases the level of student's intellectual traits. The effect size of path from element of reasoning to intellectual traits is large (Cohen's  $f^2=0.313$ ). Thus, H2 is supported. In addition, data revealed that the intellectual standard and intellectual traits are positively related ( $\beta=0.448$ ,  $p<0.001$ ). The positive path coefficient indicates that students' intellectual standard increases the level of their intellectual traits. The effect size of the path from intellectual standard to intellectual traits is large (Cohen's  $f^2=0.359$ ). Thus, H3 is also supported.

Table 3. Framework model

Hypothesis	$\beta$	P-value	SE	$f^2$
H1. STAT $\square$ ELE	0.901	<0.001	0.078	0.812
H2. ELE $\square$ TRAT	0.394	<0.001	0.090	0.313
H3. STAD $\square$ TRAT	0.448	<0.001	0.089	0.359

$f^2$  is the Cohen's (1988) effect size: 0.02=small, 0.15=medium, 0.35=large; SE = standard error,  $\beta$ =standardized path coefficient.

## 5 DISCUSSION AND CONCLUSION

The current study sought to examine the factors within the Paul & Elder's critical thinking structure to evaluate postgraduates' satisfaction with their critical thinking abilities in each dimension, including all the items in the 8 elements of thought, 9 intellectual standards and 8 intellectual traits. According to the data and students' performance, it demonstrated that the overall critical thinking abilities had been strengthened and most of the students were satisfied with the positive effects the textbook had on them. While there was a deliberate ignorance of the language, design of the textbook, cultural factors of the contents, and there might be a new outlook to integrate all these mentioned above with critical thinking improvement for further studies. This research indicates that the level of satisfaction among postgraduates at Guilin Medical University is varied on different factors. Measuring the level of students' satisfaction from postgraduate courses is not easy, since all the students do not assign the same weight to the various factors related to their satisfaction and they do not evaluate them in the same way for the specific courses under study (Paganos, 1998).

Findings demonstrate that the factors under the intellectual traits received the highest satisfaction, especially Perseverance, Empathy and Integrity with mean score respectively at 4.05, 4.04, and 4.04. This shows that students are more likely to build personality to be persistent, empathetic with people and righteous when they learn this course with this textbook and they feel satisfied with the character building. The materials compiled in this book play an effective role in enhancing the students' critical thinking abilities mentioned above. In contrast, factors under the intellectual standards got the lowest. The four lowest satisfaction factors were Breadth (Mean=3.72), Clarity (Mean= 3.73), Precision (Mean=3.78) and Depth (Mean=3.78). As seen from the data, the breadth, clarity, and depth of the textbook and learners' understanding the materials widely, clearly and deeply are closely connected to each other. Language learning or its satisfaction accounts for whether they could describe things or express themselves precisely. In this case, students satisfaction does not only rely on the textbook, but also their language performance. While language learning does not only concern language proficiency, but more importantly, it concerns the way of thinking, both critically and interculturality. (Chen, 2019). The way teachers teach affects the satisfaction, too. An appropriate textbook needs to have an underlying instructional philosophy, approach, method and technique which suit the students and their needs (Sarem, Hamidi & Mahmoudie, 2013). To measure and improve students' satisfaction may give an indication of the measures to be taken in the future (Moniokas, Stavrinoudis & Angelis, 2007). Findings revealed that when they were up with academic tasks with regard to their academic performance, learners failed to find a broad, clear, precise and deep understanding of the corresponding topics by using the book. This offers to point out what should be expanded in the textbook reform in the future. Finally, The issues, that the learners are concerned about, must be taken seriously and should be investigated further.

In this study, students provided a great range of data, which is analyzed and discussed in through this paper. The data collected through the questionnaires clarified that this textbook met most of the learners' needs, especially in terms of the improvement of their critical thinking abilities whether it was in the dimension of elements of thought, intellectual standards or intellectual traits under the framework of Paul & Elder's structure of critical thinking skills. However, there are some factors that hinder their improvement in the overall critical thinking. Among the hindrances, Breadth was at the top of the list, which was followed by dissatisfaction with Clarity. Based on the findings and conclusion, a few suggestions are as follows. More textbook compiler training should be carried out with a wider range; broader and deeper improvements and contents in the course books are to be compiled; moreover, more effective pedagogies to be incorporated in using this textbook. Both teachers and material developers should notice that a variety of factors should be taken into account in designing and selecting a book (Sarem, Hamidi & Mahmoudie, 2013). The research opens the gate for future detailed study for employing effective teaching methods in strengthening learners' critical thinking by using the critical-thinking-oriented textbooks.

#### ACKNOWLEDGMENT

This paper was supported by a grant from "Innovation Project of Guangxi Graduate Education" (No. JGY2019157)

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