Study on the Application of English Essay Correction Network in High School

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Abstract: High school English writing is a difficult point in the cultivation of students' English skills. However, in the domestic senior high school, the assessment feedback is very limited, students rarely make independent corrections. Teachers' guidance and students' practice are not enough, and the level of writing is difficult to be improved. Students' repeated revision of exercises, teachers' timely correction and feedback are an important part of writing, which plays an important role in stimulating students' interest in English writing and improving their writing level. Timely and detailed feedback can help students to improve their English writing. As an important part of writing teaching, feedback plays an increasingly important role. In recent years, different forms of feedback models have been widely used in English writing, and the feedback research has attracted the attention of researchers. Previous studies focused on teachers' and peer feedback. With the deepening of English teaching reform in high school education in China, the feedback of computer and network has been applied to English writing teaching. The self-developed Pigai System (http://www.pigai.org) is the online intelligent marking network of English composition, which is the product of the development of modern information technology and the construction of education. The research subject of this study is 57 senior 3 students of the third affiliated middle school of Beijing Normal University. This action research is based on Process Approach Theory, Output Hypothesis Zone of Proximal Development Theory with 57 students as the research object, through the arrangement of the use of Pigai System in the two classes, try to answer the following research questions: 1) Can Pigai System stimulate students' interest in English writing? 2) Have the students' writing ability and score been improved after using Pigai System? 3) Can Pigai System enhance students' autonomous learning ability? The study shows that students' learning interest and learning autonomy have been greatly improved.

Key Words: Pigai system, feedback, senior high school English writing teaching, action research

1. Introduction

Automated Essay Scoring (AES) is the use of computer technology to evaluate and score the composition. The study has been for nearly 40 years, and in this process, the latest achievements in statistics, natural language processing and artificial intelligence have been used, and in 1999 it entered the practical application stage (Dikli, 2006). The research and application of automatic composition correction system has become a hot topic in computer assisted foreign language writing teaching at home and abroad. There are more than ten kinds of automatic correction system in foreign countries, including PEG (Project Essay Grade), IEA (Intelligent Essay Assessor) and E-rater. They all have their own characteristics. PEG focuses on language form, IEA focuses on writing content, E - rater pays attention to form and content, but these automatic correction system is mainly used in the writing assessment and writing feedback of students whose mother tongue is English, but not very adapted to Chinese students' English writing.

In this chapter, the author gives a brief introduction to this thesis, including the background information and the importance of carrying out the research.

1.1 The Background Information of Pigai system

At present, the Pigai system, which is widely used in many colleges and universities in China, is a kind of online intelligent correct system. According to the correcting web handbook, the system provides teachers and English learners with online automatic correction service for English compositions in the form of SAAS

(Software-as-a Service), aiming to provide a writing environment for students, give real-time score and diagnostic feedback, motivate students to revise their compositions and improve writing ability. At the same time, the system helps teachers to understand the students' English writing level more directly and also can reduce the teachers' writing correction workload.

1.2 Significance of the Study

Composition correction and feedback is an important part of English writing teaching, the purpose is to provide writers with information to modify the composition to understand their "organizational logic is not strong" or " content is not rich" or " word errors ". Some of this information is error correction feedback on the surface errors of the learners' composition. Some are feedback on the level of writing discourse. Comments and ratings are also important aspects of information feedback. Research shows that the students' feedback information is the second writing process, which plays an important role in improving students' language ability.

With the development of modern education technology, people have conducted useful teaching experiments and exploration on the use of network platform to improve students' interest in writing, writing methods and writing application ability. However, the study on the use of online writing correction system to strengthen the feedback of English composition is rare.

2. Related Studies

In terms of domestic studies on AES, most researchers attach great importance to reliability and validity of AES. In a 2011 study conducted by Wu & Zhang, questionnaires were distributed to 335 students to investigate their attitudes towards AES in Beijing institute of technology. The results of the questionnaire showed that students would accept scores of AES.

Hu Ke (2016) did a research on writing teaching based on online to offline exploration line (online to offline). The results of the study show that the use of correction network has stimulated most students' interest in writing and improved their writing level, and students generally like to use convenient, timely scoring and timely modification. Most of the students accept the combination of on the line writing mode.

Wang Lianshuang, Wang Liwei (2015), compared the traditional English writing teaching model with the writing teaching mode based on the correction network. The experimental results show that it is helpful for students to improve their English writing ability.

Xiachunlai (2016) uses the assessment of online aided writing evaluation, through system correction, peer evaluation, teacher evaluation, to achieve writing evaluation from a single direction to multi - dimensional. The information technology is integrated into the traditional writing evaluation. The results show that the application of Pigai System to writing multidimensional evaluation contributes to the students' subjective role in the evaluation process, and makes the students change from passive writers to active participants, thus promoting the transformation of teachers' teaching methods and students' learning styles, and realizing the transformation of writing evaluation from results orientation to attention process orientation.

3. Research Design

This chapter focuses on the research design. The research aims to explore whether students in senior high school can enhance their ability of writing, help students improve their consciousness in English learning, and provide some meaningful teaching implications for English writing practice.

3.1 Research Questions

Question one: Can Pigai system stimulate students' interest in English writing?

Question two: Have the students' writing ability and score been improved after using Pigai system?
Question three: Can Pigai system enhance students' autonomous learning ability?

3.2 Objective

With the combination of information network technology and language technology in the application of language teaching at home and abroad, the research on information technology and English teaching has gradually increased. Therefore, most of the studies in China are focused on College English teaching. At present, there are few teaching researches on the use of correction network in senior high school students. Since the senior high school students face the entrance examination, the English writing teaching is more urgent and has special practical significance than the college writing teaching. The author hopes that the online feedback mechanism can assist the teacher's single feedback mode, to some extent, can help students improve their consciousness in English learning, and provide some meaningful teaching implications for English writing practice.

3.3 Participants

The participants of this research are two classes in the third grade of the third affiliated middle school of Beijing Normal University. A total of 57 students, of whom the gender ratio is basically the same. The 57 students are ranked in the two classes according to the total score. The students in the science class are at the top 30 of 120, and the liberal arts students are at the top 27of 60. Although their class English scores are ranked first in grade, their English learning ability and attitude are different. The researcher is the English teacher of both the classes.

3.4 Research Methods & Procedures

The experiment lasts for one school year and regularly arranges writing tasks. Each time the writing task is completed, the students input their writing task into the correction network, which make autonomous error correction. The Pigai system can give students the results of their compositions immediately, and also give the comprehensive comments and the word collocations, low frequency collocation and so on. Students can modify and submit the composition as many times, the platform can give the achievements of previous submissions and save all text records. The basic data of this study is derived from the various records saved by Pigai system, and is assisted by the staff of Pigai company.
In view of the research question, this study adopts the composition sample analysis, Research tools such as questionnaire, interview and so on. The composition sample records the primary version of the data and the final version of the data.

3.5 Research in Application

In order to make the experiment going on smoothly, the author made an action plan. The whole research lasted for 10 months, which can be divided into three stages.

Table 1
The application plan

month Planned actions (for students)	1	2	3	4	5	6	7	8	9	10
Completion of writing tasks on exercise books	√	√	√	√	√	√	√	√	√	√

	1	2	3	4	5	6	7	8	9	10
Online submission	√	√	√	√	√	√	√	√	√	√
Repeated modification and submission on the line	√	√	√	√	√	√	√	√	√	√
Self -assessment	√	√	√	√	√	√	√	√	√	√
Peer assessment						√	√	√	√	√
Taking exams			√		√	√	√	√	√	√
Comparison and appreciation of peer composition						√	√	√	√	√
Final composition and the filing of composition	√	√	√	√	√	√	√	√	√	√
month / Planned actions (for the teacher)	1	2	3	4	5	6	7	8	9	10
establishment of writing theme	√	√	√	√	√	√	√	√	√	√
Evaluation of composition			√		√	√	√	√	√	√
Analysis of composition in class			√		√	√	√	√	√	√

4. Data Analysis and Findings

In the action research, the author relies on Pigai system to arrange writing tasks, after the students finish writing task; the author collects and analyzes the data from all levels to promote the improvement of students' writing ability. In this chapter, the data and results of the research are described.

4.1 Analyses of Multidimensional Comparison of the First & Final Edition

Table 2
Multidimensional comparison of the First & Final- Edition

	First Edition	Final Edition	The difference
Lexical richness	5.106667	5.156667	0.05

Average word length	4.193333	4.22	0.026667
Lexical difficulty	5.056667	5.08	0.023333
Average sentence length	15.42667	15.23667	-0.19
Clause density	0.88	0.9	0.02
Length of article	136.4033	139.5867	3.183333
Number of paragraphs	3.66	3.83	0.17
Correct rate of sentence& grammar	0.953333	0.973333	0.02
score	60.83333	65.95333	5.12
Number of modification	5.096667	5.096667	0

4.2 Analysis of Frequency of the Major Mistakes per thousand copies in the First-Edition & the Final Edition

Table 3
The comparison of Frequency of the Major Mistakes per thousand copies in the First& Final-Edition

	First Edition	Final Edition	The difference
sentence	185.88	78.93	106.95
spelling	1055.86	702.26	353.6
collocation	101.45	43.26	58.19
vocabulary	87.55	40.99	46.56
part‑of‑speech misuse	21.22	11.53	9.69

4.3 Analysis of the comparison of four test results in Haidian district

Table 4
The comparison of four test results in Haidian district

Examination	midterm	End of term	The First mock examination	The second mock examination
Total score	35	35	35	35
Average of Haidian district	21.35	21.43	23.89	24.46

The average score of the experimental class	17．78	18.67	21.54	22.83
The difference	3.57	2.76	2.35	1.63

5. Conclusion

This study did a research into the application of English essay correction network in high school by analyzing related domestic and foreign research and adopting the methods of questionnaires, interviews, tests and observations. All the researches in this study are based on the high school English writing teaching in Class One and Class Five in the third grade of the third affiliated middle school of Beijing Normal University. The results show that the application of English essay correction network in high school is necessary, feasible and effective.

5.1 Major Findings

This part mainly explains some findings from the following aspects: changes of the teaching concept and the role of teachers, changes of writing purposes, and limitations and suggestions for future research.

5.1.1Changes of the Teaching Concept and the Role of Teachers

The application of Pigai system makes learning a kind of self - organizing behavior of students, students are the center of learning activities and the main body of teaching process, and teachers are more to provide guidance, support and service for learners. With the rapid development of network technology, network resources are available, students can obtain and use the learning resources no less than teachers. At this time, the main role of teachers is no longer the transfer of knowledge resources, but should be the integration of autonomous learning resources. Teachers' responsibility is to take " students as the center" of educational philosophy, integrate the excellent learning resources on the network, make full use of diversified resources and teaching means, stimulate students to constantly think, cultivate students' interest in writing, guide students to learn autonomously, and give students the necessary learning support and evaluation feedback in a timely manner. In terms of English writing teaching, teachers should integrate writing learning resources, mining students' writing data, design the precise teaching of data driven, and evaluate students' writing level from a professional perspective.

5.1.2 Changes of Writing Purposes

In traditional writing teaching, students "writing for writing" cannot be dull, because students lack interest, they will not take seriously. The essence of language is application; the essence of writing is the expression of thought and emotion (Wang Haixiao, 2014). If students write in order to practice and ignore the expressive function of writing, it may cause students to pay too much attention to grammar, vocabulary, structure and other forms of problems and ignore the most core part of the article, which is, content and thought. Network technology based on big data can help solve the problem of writing goal from two aspects.
　　On the one hand, writing software and online writing system can correct most of the mistakes in the form, so that students have more time to think about the content of the article. On the other hand, an open network platform makes every writing a "sharing". Such as teachers can let students write emails to

others, or share reviews or comments on the internet, or use the way of students' mutual evaluation, so that each writing has " readers ", so that each student is not only the author, but also the reader. Thus, writing is no longer a dull exercise, but the true information and emotional transmission, and return to the most authentic purpose of writing.

5.2 Limitations and Suggestions for Future Research

Through this action research, the application of Pigai system in senior high school English writing teaching has positive significance to improve students' autonomous English writing ability, stimulate students' learning motivation and improve students' self - efficacy.

In the actual use and semi - open interview, this study also found some shortcomings of the correction network, such as the content to the topic, the text structure, logic and so on cannot be comprehensively assessed; The system cannot recognize the more complex sentences; "low frequency warning" is suspected Chinglish, but it fails to give the reference usage; The comments are generally strong and not evaluated in detail.

In view of this, this study puts forward the following suggestions: first, the correction network should enrich its corpus, increase the suggestions, and improve its computer intelligent analysis, logic analysis and other technologies; Second, it is beneficial to break the boundary between teachers and students, break the boundary between students, achieve equal and sincere writing communication, improve students' cooperative learning ability and cultivate their teamwork ability and innovative spirit. Third, teachers should not rely solely on the Pigai system, but should make full use of the advantages of the correction network, using the teachers' comments of the nets to comment on the students' composition in time and comment on the common weaknesses. Only when the online instant feedback, peer feedback and teacher feedback are combined in middle school English writing teaching, students' autonomous writing ability and writing teaching quality will be improved.

Of course, this study is still to be improved. First of all, the subjects of this study are those of the third grade of our school, and cannot represent the other students. The research institute students to participate in the college entrance examination, most of the students have a more urgent need to improve writing ability, so the general effectiveness of the research results to be further demonstrated in the follow-up study. Secondly, the study time is short, and lack of control group,

It may limit the scientific and objective evaluation of the cool network. But it is worth affirming that the teaching mode of English autonomous writing based on Pigai System the deficiency of traditional writing teaching to some extent, which is conducive to the improvement of the teaching quality of senior high school English writing.

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