



A Research on the Application of Automatic Essay Scoring System to University's English Writing Education in the Era of Big Data: Taking Pigaiwang as an Example

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Abstract

With the advent of big data which can be used in many fields of life, such as the field of business, behavior analysis, education and so on, people in the world are facing changes from stem to stern. In China, Pigaiwang is one of the most popular online writing automatic essay scoring system among university students based on big data and cloud services (Zhang, 2013). How to deal with these newly sprout things is a big challenge for all concerned, and implementing a reform in university's English writing education is also unavoidable. Therefore the research on the university's writing education in the era of big data is a tendency. This article discusses the concepts and features of big data, and reveals how online writing automatic essay scoring system can take effect on university's writing education, and finally gives suggestion for all concerned to confront with the challenge also the opportunity so that the quality of university's writing education can be promoted.

Key words: Big data; Automatic essay scoring system; Feedback

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INTRODUCTION

English writing is an important part of English teaching and learning, in which writing feedback is a segment

that can't be neglected. English writing education in the university has been a formidable problem for a long time. From teachers' perspective, it is because of the incompatible workload and the less satisfactory results of students, teachers' enthusiasm for teaching English writing is falling down subjectively. In addition, compared with reading and grammar education, writing is a part that teachers pay less attention to. In some universities in China, in order to let students pass CET 4 and CET 6, teachers would rather give students some model essays or so called omnipotent writing templates to recite than cultivate students' writing skills and ability, for it may spend a long period of time, but a little harvest. As for students, it's generally reflected by students that writing is difficult for them to do. Vocabularies, grammars and structures, those basic elements of writing essays are big challenges for a lot of students to vanquish. Although they practice repeatedly, the ability to write remains stagnant (Qin, 2009). There are also some problems in English writing feedback. Traditionally, students write on papers and the feedback is mostly given by teachers through their manual correction. In this traditional pattern, there exist some obvious defects. On one hand, the amount of work that teachers do may not be proportional to the teaching effects on students, also to some extent, it is not in accord with environment awareness, for a lot of papers are consumed in every single writing homework or test. On the other hand, the subjectivism is a long-term problem existing in English writing education and learning, after all, as an old saying goes like "There are a thousand Hamlets in a thousand people's eyes", English writing itself is subjective, let alone the feedback, which consists of corrective feedback and feedback of discourse by only one or several teachers at each time. Fortunately, with the development of internet and technology, the big data was born and quickly affected people's life. In the field of education, online writing

automatic essay scoring system, taking Pigaiwang as an example, has injected new energy into university's English writing education, which may lead a reform in teaching and learning English writing.

1. THE DEFINITION AND FEATURES OF BIG DATA

Big data is a data collection that is composed of big amounts of data, complex structured data, and different types of data. It is a data processing and application mode based on cloud computing, also it is an intellectual resources and knowledge services capability formed by integration and sharing of data (Liu, 2014). In short, big data is a huge data set, through which people can get useful information with different purposes. For example, the police department in Los Angeles cooperated with University of California to predict criminal happenings in the use of big data. Compared with other data collection or data set, it has features of volume, velocity, variety and value according to Baidu website. As for online writing automatic essay scoring system, these features present obviously. In Pigaiwang, its corpus is huge enough and continues enriching, for more and more universities are joining it and provide data for it in return, also, buying new corpus all over the world is another way to enrich its corpus or data set. It is worthwhile to point out that the writing feedback is instant and nearly simultaneous by comparing the distance between students' writing and corpus through 192 dimensions. Furthermore, it not only gives corrective feedback in every sentence, but also put forward some correction suggestion for students to consider and adopt. In a word, big data reveals several strengths. It not only provides answers to questions that are impossible to answer with conventional data, but also inspires new questions that have never been asked before (Deng, 2014). It is because of its features of 4V that much impossibility becomes possibility in many fields of life. In the field of education, except online writing automatic essay scoring system, MOOC and flipped classroom which are prevalent and developing soon in China are also concerned with big data.

2. THE APPLICATION OF PIGAIWANG TO UNIVERSTIY'S ENGLISH WRITING EDUCATION

The appearance of online writing automatic essay scoring system, especially the prevalence of Pigaiwang has made some changes in university's English writing education. Firstly, it has shifted the tools of writing from papers and pens to computers and internet. For instance, it somehow promotes the efficiency of writing, for many

unnecessary steps like handing in assignment are omitted. Moreover, internet as a carrier and platform can store more information than papers can do. That is to say, not only the resources consuming which may harm environment will no longer be called into question, but also the huge storage of information makes large-scale writing practice become a possibility. Secondly, it has provided a new method to give feedback. In traditional way, writing correction mostly depends on teachers, sometimes peer evaluation is also adopted. The automatic essay scoring system is another way that can accomplish writing correction. As previously mentioned, Pigaiwang utilizes corpus as a benchmark or reference to evaluate the disparity between it and students' writing work in the aspect of language itself through 192 dimensions. Thirdly, it has made the process of writing extended. Students who write on Pigaiwang have the access to correct their writing based on the feedback it offers time and time again. In the traditional way, when students get the feedback from teachers, the writing exercise may come to an end. Based on my experience as a student, also as a teacher, a large part of students are not eager to take the feedback to their hearts for many reasons. On the contrary, the system of Pigaiwang gives students many chances to correct their writing and continues giving feedback. In a reward, the scores of students' writing continue rising which can inspire and stimulate interest of writing for students. Fourthly, it has enriched the instructional mode. Combing the traditional education with modern educational technology complies with the trend of times. This attempt, macroscopically speaking, provides a direction and a pattern for future's innovation and reform in the aspect of education. Finally, it expands university's English writing education out of the limitation of a single university by attracting more and more universities to be members of it, through which the different writing education resources and information can be shared within each other. In the era of big data, English writing education is no need to limit itself in university (Wang, 2014). It is said that there are more than 1,000 schools are using Pigaiwang, including some top universities, such as Tsinghua University, Nanjing University, Fudan University and so on. Large and high-quality group of users is also proved that Pigaiwang is useful for English writing education from one side. In this semester, China West Normal University has tried to use Pigaiwang not only as writing platform for English writing exercise, but also an evaluation mechanism which takes a certain proportion to the final English test for students. At least for now, many students have changed their negative attitudes toward English writing, for they think highly of the grades of the final test, and the system itself attracts them to some extent.

3. THE ADVANTAGES AND DISADVANTAGES OF PIGAIWANG

3.1 The Advantages of Pigaiwang

There is no doubt that Pigaiwang has provided teachers and students with convenient services in writing education and learning since it was born. First, it somehow eases the burden of teachers in writing education, for manual revising of language errors on papers is no longer a necessity. In China, it is because of the expansion of the college entrance examination, and the lack of English teachers in universities, teachers don't have enough time and energy to give writing feedback to students instantly, which may lead students pay less attention on English writing unconsciously and the continuity of English writing education is confronting with challenges. Therefore, the effect of English writing education is less than satisfactory. The application of Pigaiwang to English writing education reduces the work of teachers objectively. Second, it is easily to use for both teachers and students. For teachers' part, they only need to register in Pigaiwang and assign a composition step by step according to the tips of website. Then a unique ID of the composition will be generated automatically. For students' part, what they should do is also to register in Pigaiwang, search the ID that their teacher has told them before, and write an article according to the requirements. Both the clear interface and easygoing operating system of Pigaiwang are full of humanity, so that it may not let users feel confused when teachers and students using it at the first time. Third, Pigaiwang can inspire university students to write and promote their interest in writing. Taking Tsinghua University as an example, according to the data on the Pigaiwang, about 6,200 students in Tsinghua University took part in writing in Pigaiwang, and they have totally submitted 19,816 essays in a year, that is to say nearly 3.2 essays per person. Making students participate in writing actively is good for the implementation of English writing education, for students are the most significant parts but uncertainty factors of education. Forth, Pigaiwang guarantees the sustainability of writing. On one hand, it makes English writing education jump out from classrooms, breaks the limitation of time and space. On the other hand, it makes students gradually be accustomed to the feature of writing, that writing is not a short-term activity, on the contrary, it has long way to go to improve writing skills and ability. When students chose Pigaiwang to write, they are experiencing the process of revising their essays, through which they can be gradually addicted to this mode and make their writing ability cultivated. Fifth, the feedback and results that Pigaiwang offers have certain reliability. As previously mentioned, there are several ways of essay evaluations. Teacher evaluation and peer evaluation are most popular one in English writing education. The reliability of the former one is better than

the latter one. However, the real condition is limited, teachers can't bear the workload and it is not practical to promote the writing ability only relying on teachers (Gao, 2010). Pigaiwang, as another way to evaluate, its feedback and evaluation are reliable to a large extent, for it corrects essays in every single sentence and its way to evaluate is rational.

3.2 The Disadvantages of Pigaiwang

Although Pigaiwang has many strengths, it is still not perfect. One of the shortages is that the feedback does not take content and logicity of essays into consideration, for the limitation of artificial intelligence technology. It is because of its operational principle based on big data and cloud computing technology, it can only focus on correcting the error of language itself, such as feedback of vocabulary and grammar. The lack of deeper feedback is a big problem. Therefore, another defect of Pigaiwang is that the reliability of its feedback is not enough. According to an essay written by He Xuliang (2013), the scores it provides are usually little higher than manual revising by teachers, which may also be caused by the limitation of the current technology. Moreover, it is because of its evaluation system, some students may pay more attention to scores but not to the process of writing for some reasons. The instant feedback and scores may drive students to write positively, however, if teachers give students improper guidance of using Pigaiwang, such as emphasizing on results of evaluation unduly, it may cause students to cope with writing perfunctorily or frequently revise essays for getting higher scores.

4. THE STRATEGIES TO DEAL WITH THE REFORM OF UNIVERSITY'S ENGLISH WRITING EDUCATION IN THE ERA OF BIG DATA

The combination of various technologies with education is an irreversible tendency. At first, teachers should conform to the historical trend of the time, face the reform with an open and positive attitude. The next step for teachers is to promote their information technology ability. In this aspect, university should provide teachers more chances to acquire related knowledge, not only the knowledge of teaching and learning English, but also some transboundary knowledge, such as corpus, computer technology, big data and so on. Only when teachers are equipped with necessary information and knowledge can they gradually adapt themselves to the reform of education. Furthermore, teachers should strengthen cooperation with educational technology personnel. In modern society, it's normal that different fields affect each other deeply. Education is not an exception. The cooperation may promote the online automatic evaluation system become more mature in

accordance with the wishes of all parties. For example, the reliability and validity of Pigaiwang may increase by conquering the defects of artificial intelligence, namely, the lack of feedback on content and logic of essays under such a cooperation. Last but not the least, when proceeding writing education, teachers should construct multiple feedback mechanism that consists of teacher feedback, peer feedback, and online automatic feedback. Teachers should judge and weigh the different feedback mechanism, find a balance among those three, through which teacher can assess students' writing ability reasonably.

CONCLUSION

In the era of big data, more and more educational technology are being developed and adopted to the practical education. The appearance of the online automated essay scoring system, and the prevalence of Pigaiwang have brought challenges and opportunities to traditional English writing education in university. Pigaiwang is good for promoting students' interest to write, increasing the frequency to revise essays, and finally it can reach the goal of using feedback to promote learning (Shi, 2012). Although, the present situation of university's English writing education may not change in a short time, at least, it is moving toward a good direction. Without any doubts that the understanding of various educational technologies under the circumstance of big data is necessary for teachers and the research on

the application of automatic essay scoring system should never be stopped.

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