A Survey of EFL College Learners' Perceptions of an On-Line Writing Program

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Abstract—**This survey adopted quantitative and qualitative methods to investigate 209 Chinese college learners' perceptions of an on-line writing program, Pigaiwang, in a normal university. The survey questionnaire and interview results indicated that EFL college learners attach great importance to English writing, but they find English writing difficult, particularly in terms of vocabulary and grammar; the majority of college learners showed slightly more positive attitudes toward using Pigaiwang as a writing tool than as an essay grader; computer–mediated feedback could enlarge learners' vocabulary size, and reduce the grammar and spelling linguistic errors in their writing compositions; the majority of college learners thought writing with Pigaiwang could improve learners' English writing learning autonomy and they hoped to use on-line writing programs in future English writing.**

Index Terms—**on-line writing program, EFL, computer-mediated feedback, college learner**

I. INTRODUCTION

With the rapid development of computer technology and the introduction of the internet, the increasing importance of computer-assisted language learning and computer-assisted language instruction has greatly influenced both writing instruction and writing research in recent years.

The history of Automated Essay Scoring (AES) can be traced back to the 1960s in America with the development of Page Essay Grade (PEG), a program that used multiple regression analysis of measurable text features to build a scoring model based on a corpus of essays previously graded by hand [1]. Recently, more and more AES programs have appeared and can be used both as assessment and learning tools. These AES programs, such as Criterion, My Access, Writing Roadmap, and Pigaiwang, combine a scoring engine, an editing tool (offering grammar and spelling feedback), and some support resources (such as dictionaries).

Research on AES systems is classified into three types. The first type of research is on the validity of the software [2], while the second focuses on the learning outcome and explores whether the writing software improves learners' writing skills [3], [4]. The third type of research has concentrated on the process of using the writing software in the classroom [5], [6].

Previous studies conducted in China have discussed the use of Pigaiwang in the writing classroom [7], [8], [9] and their results have indicated that its use could enhance learners' English writing proficiency to some degree. Ref. [10] found that the reliability and validity of Pigaiwang were high. However, these studies also pointed out Pigaiwang's drawbacks.

Above all, because of the various pitfalls in the use of writing programs with EFL learners, writing teachers need to observe the possible benefits and drawbacks for their students. Thus, the present study aims to gain a deeper understanding of a specific on-line writing program, Pigaiwang, from the learners' viewpoints, in an EFL context.

A. Brief Overview of the Writing Software, Pigaiwang, Used in this Study

Currently, more and more universities in China are using computer–assisted writing programs in their teaching of writing. One of the most commonly used on-line writing programs is Pigaiwang (http:// www.pigai.org), based on corpuses and cloud computing, which claims to have attracted over 100,000 customers from more than 1000 universities. Pigaiwang was offered to college students in China West Normal University in the spring semester of the 2014 academic year to supplement classroom instruction due to the insufficient number of English teachers in the university. In fact, this was the first time computer-based writing software had been applied to any English composition class in the university.

Pigaiwang was used both as an essay grader and as a writing tool in the writing course. As an automated essay evaluation tool, teachers assign writing tasks online and give students the composition number. Students then write multiple drafts before the deadline and receive immediate feedback in the form of both holistic scores and diagnostic comments on grammar, organization, lexical usage, and content. The electronic grader in the writing program was designed to check for lexical complexity, syntactic variety, topic content, and grammatical errors, and students could then revise and submit their compositions repeatedly, according to each simultaneous feedback.

The on-line writing program also has other important additional functions, such as a plagiarism checker, deadline setting, peer evaluation, sample composition reading, teacher grading, and similarity comparison, which writing teachers can choose to use when assigning composition tasks.

II. RESEARCH METHODOLOGY

A. Research Question

This study examined quantitative and qualitative aspects of using the on-line writing program Pigaiwang in an EFL writing course based on learners' perceptions. The

following questions were specifically discussed in the study:

- What are the learners' perceptions of college English writing?
- What are the learners' attitudes toward the use of Pigaiwang in college English writing?
- What are the learners' perceptions of using Pigaiwang in the future?

B. Participants

The participants in this study comprised 209 sophomores, including 64 Chinese education majors, 51 chemistry education majors, and 94 geography education majors in China West Normal University, who volunteered to fill out a questionnaire. The questionnaire was given to these sophomores who were divided into four classes on June 8 and 9, 2015 during the English class at the end of the spring semester. All of these Chinese students had registered on the website www.pigai.org at the beginning of the spring semester and had completed five compositions online. On average, they revised each composition six times. Among the 209 students who participated in the study, 28.9% were male and 71.1% were female.

C. Research Instruments

The data used in the study came from a questionnaire completed by 209 sophomores and semi-structured follow-up interviews conducted with eight students.

Questionnaire: The questionnaire consisted of three parts containing 25 questions in total. The survey was carried out anonymously to reduce the potential for uncomfortable feelings among the participants. Part 1 contained 20 items that were designed around a five-point Likert-type scale (1 for strongly disagree, 2 for disagree, 3 for not sure, 4 for agree, and 5 for strongly agree) to identify the learners' attitudes toward college English writing and their perceptions of using Pigaiwang in college English writing. After collection, data were coded using SPSS21. For the purposes of analysis, part 2 included two open-ended questions: Item 21, designed to elicit students' preference for computer feedback or teacher feedback, and Item 22, designed to elicit students' judgments on Pigaiwang. Part 3 contained three items concerning participants' background information, such as gender, major, and their perceptions of using Pigaiwang in the future.

Interview: Interviews with the eight student participants took place individually on June 11. The semi-structured interviews involved open-ended questions concerning perceptions of using Pigaiwang, which may not have been captured by the Likert-type questionnaire items.

III.   RESULTS

A. Research Question 1: What Are the Learners' Perceptions of College English Writing?

The learners' perceptions of college English writing were discussed from two aspects, i.e., its importance and degree of difficulty. From the questionnaire results, the importance and degree of difficulty of college English writing were analyzed in terms of the mean scores on a five-point Likert-type scale and percentages of their answers. Standard deviations, means, and percentages of participants' responses are listed and reported in Tables I, II, and III.

Items 1 to 7 relate to the importance and degree of difficulty of college English writing (see Tables I, II, and III). The results of the data analysis in Tables I and II demonstrate that the mean scores were above 3.0 for all seven items, and above 3.50 for the majority of items. Items 1 to 7 in Table I indicate the degree of students' agreement about the importance and degree of difficulty of college English writing.

As shown in Table I, the mean score of Item 1, "I find college English writing important," was 4.25 and suggested that the majority of learners have high positive attitudes toward college English writing. To be specific, 93.8% of learners find college English writing important (see Table III).

Table I also shows that the mean score of Item 2, "I find college English writing difficult," was 3.94, and Table III shows that 85.0% of students find college English writing difficult.

Items 3 to 7 investigate what aspects cause difficulty in writing. These aspects include English vocabulary, grammar, spelling, composition's content, and organization.

TABLE I.
DISTRIBUTION OF MEAN SCORES OF ITEMS 1–2 (N=209)

Item Description	mean	S.D.
1. I find college English writing important.	4.25	.75
2. I find college English writing difficult.	3.94	.49

TABLE II.
DISTRIBUTION OF MEAN SCORES OF ITEMS 3–7 (N=209)

Item Description	mean	S.D.	Rank
3. During English writing, I find vocabulary difficult.	3.87	.84	1
4. During English writing, I find grammar difficult.	3.67	.99	2
5. During English writing, I find content difficult.	3.02	.99	5
6. During English writing, I find organization difficult.	3.14	1.02	4
7. During English writing, I find spelling difficult.	3.50	.90	3

TABLE III.
PERCENTAGE OF ITEMS 1–7 (N=209)

Items	Strongly disagree (%)	Disagree (%)	Not sure (%)	Agree (%)	Strongly agree (%)
1	1.9	1.4	2.9	57.7	36.1
2	0	0	15.0	75.8	9.2
3	0.5	10.1	9.6	62.0	17.8
4	1.4	15.9	14.4	51.0	17.3
5	1.9	38.3	19.9	35.4	4.4
6	1.4	34.8	19.3	37.7	6.8
7	0.5	17.0	24.3	48.5	9.7

As shown in Table II, Item 3, the mean score of Item 3 is the highest, which suggests that students find English vocabulary the most difficult aspect of college English writing, followed by English grammar, spelling, organization, and content. To be specific, Table III vividly reflected the degree of difficulty. In total, 79.8 % of students find English vocabulary difficult during college English writ-

ing (Item 3), 68.3% find English grammar difficult (Item 4), 58.2% find English spelling difficult (Item 7), 44.5% find writing organization difficult (Item 6), and only 39.8% find writing content difficult (Item 5).

B. Research Question 2: What Are the Learners' Attitudes Toward the Use of Pigaiwang in College English Writing?

From the questionnaire results, the student participants' attitudes toward the use of Pigaiwang were analyzed in terms of the mean scores of their answers on a five-point Likert-type scale. Standard deviations and means of participants' responses are listed and reported in Tables IV, V, VI, and VII.

Learners' attitudes toward using Pigaiwang as an essay grader: Items 8–14 relate to the use of Pigaiwang as an essay grader (see Table IV). The results of the data analysis showed that the mean scores were above 3.0, but below 4.0 for all seven items.

As shown in Table IV, the mean score of Item 8, "I feel satisfied with the automated grading system of Pigaiwang," was 3.45 and the mean scores of items 9 and 10, which were related to the use of Pigaiwang as an essay grader, were both above 3.0, but below 3.50. The mean scores of the other items, which related to the use of Pigaiwang as an essay grader, were all above 3.50.

Items 8 to 14 in Table V also indicated the degree of students' agreement on the use of Pigaiwang as an essay grader. In fact, the result of Item 8 showed that 53.1% of students felt satisfied with the automated grading system of Pigaiwang; 19.6% of learners were dissatisfied with it while 27.3% said they were not sure. In particular, over 50% of learners agreed with the other items (Items 9, 11, 12, 13, and 14), except for Item 10, which was related to the use of Pigaiwang as an essay grader. Therefore, more than half the learners were satisfied with Pigaiwang as an essay grader.

Learners' response to the use of Pigaiwang as a writing tool: The results of the data analysis revealed that the

mean scores of the other six items were between 3.0 and 4.0. Items 15 to 20 relate to the learners' perceptions of using Pigaiwang, particularly as a writing tool.

As Table VI illustrates, apart from the mean scores of only two items (17 and 18) that were below 3.50, the mean scores of the other four items were above 3.50. This suggests that the majority of students seemed to have more positive attitudes toward the use of Pigaiwang as a writing tool.

In addition, the results presented in Table VII show that 70.3% of students agreed that they would revise their compositions according to the computer feedbacks, while only 11.0% of them disagreed (Item 15). A total of 75.4% of students agreed that writing compositions with Pigaiwang helps them reduce their composition's mistakes in grammar and spelling (Item 16). A total of 71.7% of learners agreed that writing compositions with Pigaiwang helps them to enrich their composition's vocabulary (Item 19). However, less than half of students agreed that writing compositions with Pigaiwang helps them to improve

TABLE V.
PERCENTAGE OF ITEMS 8–14 (N=209)

Items	Strongly disagree (%)	Disagree (%)	Not sure (%)	Agree (%)	Strongly agree (%)
8	1.4	18.2	27.3	45.5	7.6
9	2.9	19.6	22.5	50.7	4.3
10	1.5	18.9	30.1	46.6	2.9
11	1.0	10.6	26.1	59.9	2.4
12	1.0	8.6	20.7	67.8	1.9
13	1.4	13.9	19.1	63.2	2.4
14	1.9	6.9	15.5	69.9	5.8

TABLE VI.
DISTRIBUTION OF MEAN SCORES OF STUDENTS' ATTITUDES TOWARD THE USE OF PIGAIWANG AS A WRITING TOOL (N=209)

Item Description	mean	S.D.	Rank
15. I will read the computer feedback and revise my compositions after using Pigaiwang.	3.69	.85	4
16. Writing compositions with Pigaiwang helps me reduce my composition's mistakes in grammar and spelling.	3.76	.72	1
17. Writing compositions with Pigaiwang helps me improve my composition's organization.	3.27	.80	6
18. Writing compositions with Pigaiwang helps me improve my composition's content.	3.28	.84	5
19. Writing compositions with Pigaiwang helps me enrich my composition's vocabulary.	3.71	.72	2
20. Writing compositions with Pigaiwang helps me improve my English writing.	3.70	.80	3

TABLE VII.
PERCENTAGE OF ITEMS 1–7 (N=209)

Items	Strongly disagree (%)	Disagree (%)	Not sure (%)	Agree (%)	Strongly agree (%)
15	1.4	9.6	18.7	59.3	11.0
16	0	8.2	16.4	66.7	8.7
17	0.6	16.4	42.5	36.2	4.3
18	1.5	17.2	36.4	41.6	3.3
19	1.5	5.3	21.5	66.0	5.7
20	1.4	8.7	16.7	65.1	8.1

TABLE IV.
DISTRIBUTION OF MEAN SCORES OF STUDENTS' ATTITUDES TOWARD THE USE OF PIGAIWANG AS AN ESSAY GRADER (N=209)

Item Description	mean	S.D.	Rank
8. I feel satisfied with the automated grading system of Pigaiwang.	3.45	1.22	5
9. I feel satisfied with the comments on my compositions provided by the automated grading system of Pigaiwang.	3.34	.94	6
10. I feel satisfied with the computer feedback to English grammar provided by the automated grading system of Pigaiwang.	3.31	.86	7
11. I feel satisfied with the computer feedback to the organization of my composition provided by the automated grading system of Pigaiwang.	3.52	.76	3
12. I feel satisfied with the computer feedback to the content of my composition provided by the automated grading system of Pigaiwang.	3.61	.71	2
13. I feel satisfied with the computer feedback to the sentences of my composition provided by the automated grading system of Pigaiwang.	3.51	.82	4
14. I feel satisfied with the computer feedback to English vocabulary provided by the automated grading system of Pigaiwang.	3.71	.76	1

their compositions' organization and content (Items 17 and 18). A total of 73.2% of learners agreed that writing compositions with Pigaiwang helps them improve their English writing, while only 10.1% of them disagreed (Item 20). In general, the students' responses to the use of Pigaiwang as a writing tool were positive.

C. Research Question 3: What Are the Learners' Perceptions of Using Pigaiwang in the Future?

Learners' reactions to the suggestion of using Pigaiwang in the future came from both the questionnaire data and the interview data. A total of 88.9% of learners suggested that Pigaiwang be used in the future English writing class, while only 11.1% did not want to use it anymore. The eight interviewees all felt happy that they could obtain immediate computer feedback; they then revised their compositions according to that feedback and felt a sense of achievement if they achieved high scores in their composition. Seven of the interviewees mentioned that Pigaiwang offered them good opportunities to practice English writing in and out of class and revise their compositions without time limitations; six of them indicated that writing compositions with Pigaiwang would reduce the teacher's workload; five interviewees thought Pigaiwang provided them with a large amount of vocabulary knowledge, could enlarge their vocabulary size, and could improve their learning autonomy. Four of the eight interviewees said they often read peers' compositions and sample compositions recommended by teachers after they submitted their compositions. Only one interviewee did not suggest using Pigaiwang in the future class, because he did not like to do homework online. Six interviewees thought the computer feedbacks were inaccurate and unspecific and suggested that teacher feedback and computer feedback be combined.

IV. DISCUSSION

From the results of the survey questionnaire, college students attached great importance to English writing, but found English writing very difficult. More importantly, the students' attitudes toward writing compositions with the on-line writing program Pigaiwang have been investigated. The results have revealed the students' favorable attitudes toward the use of Pigaiwang as a writing tool, but a slightly less positive attitude toward its use as an essay grader.

Some studies have discussed the importance of English writing. For example, a survey by [11] showed that among the four English language skills, writing would be badly needed in the future in China and approximately 86% of the interviewees hold the opinion that the ability to write scientific reports or essays is the most important skill. The present survey corroborated these previous studies, with 93.7% of learners finding college English writing important.

At the same time, a few studies investigated the degree of difficulty in writing for EFL learners. In comparison with the other three language skills, writing is the most difficult [12]. Ref. [13] also confirmed this belief, pointing out that writing is a complicated process and the ability to write well is usually considered to be the final skill in language learning. According to [14]'s survey, 65% of subjects agree that writing is the most difficult skill to acquire. This result proved the above researchers' results,

that 70.57% of the students find college English writing difficult. In particular, the majority of students find English vocabulary most difficult, followed by grammar and spelling, during the English writing process.

A number of studies have discussed the negative and positive effects of EFL learners' attitudes toward computer-assisted writing programs in English writing instruction. Ref [15]'s survey in Hong Kong suggested that EFL writers' drafts in traditional classes improved more than those in classes using LAN software programs. However, [5]'s study (2010) and the present study found that the majority of learners had favorable attitudes toward the use of computer-assisted writing programs as a writing tool. Furthermore, the results of the survey questionnaire and interview indicated that the participants gave positive responses to the timely computer-mediated feedbacks for revising their compositions, when using on-line writing programs. In particular, they benefited greatly from computer-mediated feedbacks in English vocabulary, grammar, and spelling, which they found very difficult in English writing. In addition, the majority of interviewees mentioned that writing essays with the on-line writing program could promote their confidence and learning autonomy. Moreover, both the survey questionnaire and interview results showed that essays written with the on-line writing program could improve learners' English writing and learners suggested that Pigaiwang be used in future English writing class. Thus, the adoption of on-line writing programs is worth taking into consideration in EFL writing classes.

On the other hand, the results of the survey questionnaire revealed that slightly more than half of students were satisfied with the use of the on-line writing program as an essay grader. It suggested that students held less positive attitudes toward the use of the on-line writing program as an essay grader than as a writing tool and thus further corroborated [5]'s study. Additionally, the findings from the open-ended Item 21 showed that the majority of participants (80%) preferred teachers' written feedback to the computer feedback given by Pigaiwang. Moreover, the findings from the open-ended Item 22, designed to elicit students' judgments on Pigaiwang's merits and pitfalls, found that computer-mediated feedback is too general and unspecific despite being timely, so students sometimes did not know exactly how to revise their compositions. Furthermore, the results of interview showed that the automated grading system was sometimes inaccurate, because the compositions' scores decreased after being revised based on computer-mediated feedbacks. Therefore, a large portion of learners suggested that computer feedback and teacher feedback be combined and that computers cannot replace the teacher's role.

V. CONCLUSION

This study has a number of limitations. The first and biggest limitation of this study may stem from the limited sample size. Only 209 students were investigated as survey subjects and 8 students were selected as interviewees, all of whom came from the same normal university. No doubt, a larger sample size may lead to a more objective analysis. The second limitation is that the study did not compare learners' perceptions of on-line writing programs with regard to different English proficiency levels.

While the results of the study did shed light on some aspects related to the use of the on-line writing program, most findings were that the majority of learners attach great importance to English writing, which they find difficult, and preferred the use of Pigaiwang as a writing tool to its use as an essay grader. In addition, the majority of learners hope to use Pigaiwang in future English writing classes. Moreover, most learners benefited from computer-mediated feedbacks in their English linguistic knowledge, particularly in English vocabulary, grammar, and spelling, which they found very difficult during English writing. Additionally, writing English essays with Pigaiwang could enhance learners' learning autonomy and writing level. Therefore, it is crucial that the on-line writing program be a useful supporting tool and is worth adopting in EFL writing classes.

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