

Web-based Writing Assessment to Enhance Students' English Writing Performance

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Abstract: Difficulties with English writing are a common cause of low English writing performance particularly for the students who learn English as a second or a foreign language. This has been long become the concern of the English educators and researchers, but not yet address how to facilitate the teachers or lecturers to do the writing assessment easier and faster so that the students may get feedback promptly which is very important for them to get progress in their writing learning and improve their writing performance. This study tried to apply a web-based writing assessment and attempted to examine its affectivity to enhance the student writing performance by employing a quantitative method in quasi-experiment design in the State Polytechnic of Batam (Polibatam), Indonesia. It found that the web-based writing assessment as the treatment group was better in enhancing students writing performance compared to the traditional conventional writing assessment as the control group.

1 INTRODUCTION

English is a global language of communication and writing is essential for students, both during their study and after they graduate. Most student assignments are written, so improving their writing skills may give students a better chance to show what they have learnt, whether they submit on paper or through electronic media (Freiberg, 2008). When students finish their study and move to the workforce, writing will remain one of the determining factors of a successful career. Inadequate writing proficiency has provided serious difficulties for some university graduates and produced strain in doing work related to writing skills (Bonwell & Eison, 1991).

Writing is indeed a complex process that encompasses invention of ideas and clear expression of them in well-organized statements and paragraphs (Nunan, 2003). This requires consolidation of cognitive effort, attention control, and self-regulation (Graham & Harris, 2003) and this makes writing difficult to master, even for first language (L1) learners (Nacira, 2010). Writing difficulties may include lack of knowledge about the topic to be written, lack of strategy in planning the text and lack of proficiency in producing or revising it (Graham &

Harris, 2003). Second language (L2) writing learners have more difficulty since they may find that words are different when spoken and written and languages differ in grammar.

Writing is important but it causes difficulties not only for students who learn to write but also for the teachers or lecturers who assess their pieces of writing. Some researchers reported emerging problems due to the teachers' incompetence in assessing writing (Edwards, 2012; Lee, 2008, 2009; Montgomery & Baker, 2007) and even if the teachers or lecturers are able to do the writing assessment well, it does still take time. This long writing assessment turnaround means that students frequently receive late feedback. Students who receive late feedback are often disappointed and find it more difficult to improve their writing. Indonesian teachers and lecturers face many large classes. The complex nature of writing needs extra time and the large classes in Indonesia make checking and marking student writing difficult. This situation is common for most Asian and some other developing countries (Exley & Dennick, 2004) and often leads to low quality, delayed and sometimes non-existent feedback on assessment of student writing (Chang, 2007). Problems in giving prompt feedback and the

complexity of the writing (Brown, 2001; Harmer, 2007; Nunan, 1999) both increase student dissatisfaction, leading to low writing performance (Nemati, Alavi, Mohebbi, & Masjedlou, 2017). There is an emerging need of a more effective way that could help teachers and lecturers to assess students' writing and to give them prompt feedback to improve their writing performance.

This research then tried to evaluate the use of a web-based support for lecturers to do a faster assessment on students writing tasks. The provision of the web-based writing assessment was expected to enable the lecturer to reduce the turnaround time in assessing the students' abundant pieces of writing. This allowed the students to get prompt feedback on their writing work hence was expected to increase their writing performance.

2 LITERATURE REVIEW

Writing is a complex but very essential skills needed by the students. This proficiency has a vital role in the academic progress and success of a student as it is still one of the main learning practice and assessment especially in the tertiary schools (Chang, 2007). Writing difficulties are usually associated with its complicated components such as the development of ideas, syntax, grammar, organization, vocabulary, content, communication skills, and the use of punctuation (Brown, 2001; Harmer, 2007). These complexities make writing skill difficult to acquire and frequently bring students to a level of discouragement. These issues then have long become the concern of English educators and researchers. A long series of research literature has tried to find the solution including the effort to apprehend the nature of the writing itself to formulate a definition of writing performance, English writing performance both in L1 and L2, writing assessment, feedback in writing assessment and the use of technology in writing assessment.

A. Writing Performance

The effort to find the solution for the writing difficulty should be started from understanding the nature of writing itself in both in L1 and L2 context. Nunan (2003, p. 88) defines writing as "the mental work of inventing ideas, thinking about how to express them, and organizing them into statements and paragraphs that will be clear to the reader." Other experts stress the process it takes. Oshima and Hogue (2007) for example defines writing as a repeated process i.e. revising and rewriting. It was initially

accepted that the L1 writing approach could be used as the "starting point" for L2 writing.

Further research though has been conducted to formulate a more comprehensive definition of L2 writing performance. One of the most central research objects, in this notion, is the position of linguistic competence in L1 and L2 writing performance. L2 learner writers commonly still struggle with grammatically correct sentences building in accordance with their level of language proficiency. Whereas the L1 learner writers with different levels of linguistic competence, are at least familiar with linguistic features, so that they have no substantial problem with grammatical sentence forms. The researchers in this line could conveniently define the L1 writing performance as "a writer's creativity, logic, voice, style, success at self-discovery, and skill at knowledge transforming" (Gennaro, 2006, p. 11). The same competencies are embedded to the definition L2 writing performance with the addition of some more essential elements such as "L2 linguistic proficiency, balance between linguistic and rhetorical sophistication (organization, coherence, development) and task demands" (Gennaro, 2006, p. 11). In more detail, those L2 writing variables competencies are divided into the discourse competencies and the language competencies. The discourse competencies cover the "organization, coherence, progression, development of ideas, and, depending on task, the ability to integrate or summarize sources" (Gennaro, 2006, p. 11). The language competencies, on the other hand, encompass "vocabulary, illocutionary markers, morphosyntax, spelling, and punctuation" (Gennaro, 2006, p. 11). The more emphasis on the role of the linguistic features gives the distinction of competencies of the L2 writing compared to the ones of the L1 writing and will be also a consideration of the L2 writing performance assessment.

B. Writing Assessment

Assessment is "a process for documenting, in measurable terms, the knowledge, skills, attitudes, and the beliefs of the learner" (Capraro et al., 2012, p. 1). In the context of writing assessment, there are two emerging methods of assessing writing ability i.e. the direct and the indirect writing assessment (Weigle, 2002), as can be seen in the table below.

Table 1. Writing Assessment Method

Writing Assessment Method	Treatment
1. Direct Method	requires writing at least one sample writing assessing the writing competence as a whole
a. Holistic	gives a single score to all elements of a piece of writing based on an overall or a general impression of the rater
b. Analytic	gives different separated score for each element of the rating.
c. Primary Trait	concentrates of a certain element as a prime trait but may still have a secondary trait with a less percentage
d. Weighting Trait	weighting more on elements
2. Indirect	measures different features of language competence separately such as grammar or vocabulary typically in form multiple choice test

The difference of direct and indirect writing assessment can be clearly seen in the table above. The Direct Writing Assessment requires the examinee to produce an actual writing that could be assessed either by Holistic, Analytic, Primary Trait and Weighting Trait Methods. The Holistic Scoring is based on some criterion, but the rater does not score on individual criteria. The Education Testing Service (ETS) is one example of an organization that applies this Holistic Writing Scoring. The Analytic, on the other hand, gives individual scores on some different elements of writing. For example, it may score five different elements of content, organization, vocabulary, language use and mechanics which each will get 20 percent. The Weighted Trait Scoring is basically the same with the Analytical one but weighting more on elements. It may for instance give more percentage on content or other element of the writing. When a particular writing element is given much more percentage than the others, it is then a Weighted Trait Assessment Method. Indirect writing assessment, on the other hand, does not require an actual writing. The test taker's competency will be assessed on their ability on "the appropriate use of language in a series of objective test items which

often follow a multiple-choice format" (Stiggins, 1982, p. 102). Those analyses above have been used many times, for example by Boring (2005) in comparing the validity of human and computerized writing assessment, by Jayamani, Heng, and Bakri (2016) in assessing Manufacturing Subjects, by Ounis (2017) in assessing Speaking Course and by Swain and Friedrich (2018) in assessing Writing Course.

The L1 writing assessment can commonly be used to the L2 assessment with more emphasis on the linguistic elements. These elements in more detail are called linguistic micro features divided into three features i.e. lexical, synthetic and cohesion. In lexical feature, the better scored L2 writings are the ones with more words and with the words of more letters or syllables and present greater lexical variety. In the synthetic feature on the other hand, good L2 writings are expected to present more subordinations and passive voice uses. While in the cohesion features, the L2 writers are supposed to use more conjunctions (Crossley, Kyle, Allen, Guo, & McNamara, 2014).

Even though the L2 writing assessment gives more emphasis on linguistic features than the L1 one does, it does not necessarily mean that these features become the most important. These items are easily scored but it would not be hard to generate gibberish that is well scored well on these criteria. As these features are well known, many schools and language training centers in Asia have provided English international test preparation programs that only focus on test strategy skills. Even though some may achieve success this way, the writing assessment must be kept in line with the learning purpose. How well a test taker response to a writing task by providing related points and relevant information should become the main consideration of the assessment. Good writing should also address "for what" and "for whom" the writing is constructed. The content then should be more important than the linguistic features (Leki, 2004).

C. Feedback in Writing Assessment

Besides scoring, giving feedback is supposed to be an essential integral part of the writing assessment. The Assessments for Learning (AfL) theory, as can be seen in the Diagram 1 below, particularly mentions that it is the feedback that keeps clearly telling the students "where they are now, where they need to go and how they can best get there" (Edwards, 2012, p. 21).

The feedback needs to be given promptly to help the students know their writing position in the learning goal: what level is the students writing now,

what improvements they need to do and how they can do those improvements. Students then will get serious difficulties to revise their writing without having adequate and prompt feedback from their lecturer. Even those that belong to autonomous students still need assistance intervention from their lecturer in revising their writing. The writing complexities that need long turnaround time to assess though often make lecturers get late in giving the feedback. Some lecturers even tend to skip this important step, expecting that the students will just become autonomous by themselves (Edwards, 2012). In some cases, the writing learning process even ended up in the students' submitting their writing assignments since those submitted assignments were never returned to them (Chang, 2007).

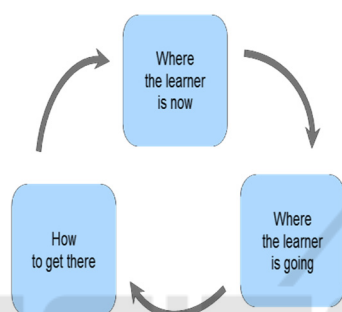


Figure 1. Diagram of The Significance of Feedback in Writing Learning According to The Assessments for Learning (Afl) Theory

The problem of giving feedback is still multifaceted by the problem of big classes which is still prevalent in most of Asian developing countries (Exley & Dennick, 2004), includes Indonesia. Lecturers then should face complex assessment of abundant pieces of students writing task regularly. This problem leads to a low-quality feedback, slow feedback or even no feedback at all (Chang, 2007). It enhances dissatisfaction, brings discouragement to some students, and finally boils down to low writing performance (Nemati et al., 2017).

D. The Use of Information Technology in Writing Assessment

The use of the information technology has long become an alternative in writing assessment, including the practice of Automatic writing Evaluation (AWE) programs. Research has done comparisons between this kind of assessment and traditional manual writing assessment. It shows that this computer based automatic assessment is better in terms of shortening the assessment turnaround time and has increased the students' motivation and

convenience in receiving such prompt feedback (Zhang & Hyland, 2018). The computer-based feedback was also found to have a positive correlation with the student writing performance and with the students' perception about the feedback (Ebyary & Windeatt, 2010). Other research though also found that while automatic writing assessment does shorten turnaround time, it is only effective at word and sentence level assessment. It does not work well in providing adequate feedback at the content level (Warschauer & Grimes, 2008). Automatic marking can lose the content importance, particularly when it applies analytic scoring methods in L2 writing assessment. The L2 analytic assessment gives separate marks to each writing element and test wise students may easily "game" the test. For example, a test taker who is only good in vocabularies could get high writing score by producing more varieties of words but less in meaning. The automatic assessment machine could give high score on the words or sentences feature which are meaningless in context. The Education Testing Service (ETS) choice of using holistic instead of analytic method is probably to avoid this faulty scoring happening. As the largest language test that relies on the combination of automatic machine and human raters, ETS anticipates the students who are only good in vocabulary levels to get high marks on writing.

Another alternative to assist lecturers in doing a faster assessment and providing effective feedback is web-based feedback involving both human assessors and technology. The writing assessment is still done by human but is facilitated and assisted by technology. Research has also covered this area and found it is supportive (Bikowski & Vithanage, 2016; Lin, Liu, & Yuan, 2001; Togatorop, 2015). Most of them though were at the level of web-based peer collaborative feedback (which is often not qualified enough), not on lecturer's feedback to students' writing. Further research on the effort of providing a technology-based writing assessment that could help lecturers with the assessment is required. This research still allowed them to give prompt feedback on students writing to increase their writing performance.

3 METHODOLOGY

This research applied a quantitative method (Creswell, 2012). It used a quasi-experiment design since it was done in two intact class groups without fully randomization to avoid the learning system

disruption in the research site (Creswell, 2012; Vogt, 2005).

A. Data Sources

The study was done in Politeknik Negeri Batam (PoliBatam): The State Polytechnic of Batam, Indonesia. The population of the research was the students of about 3319 persons in the institution. The research applied purposive sampling that will chose about 57 students who enrolled for the English Writing Course in two of most similar characteristic classes in the odd semester of academic year 2019/2020. Those two classes are in semester I of the Business Management Department. The 57 respondents are mostly female and are commonly seventeen to twenty years old. Before entering the PoliBatam, they have also got English lesson for years in their Primary and High School.

B. Research Scheme and Design

The research provided and analyzed two different treatments of writing assessment in two different classes. The Web-based Writing Assessment as the treatment group and the Traditional Manual Writing Assessment as the control group. The impact of each of both treatments was tested writing performance as can be seen in the research scheme diagram 2 below.

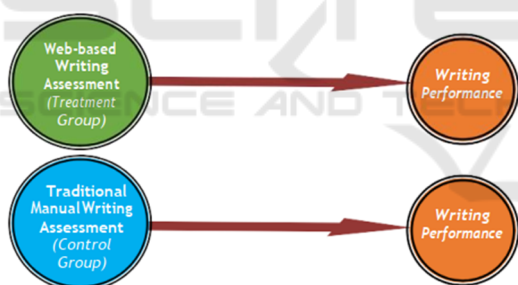


Figure 2. Diagram of The Research Scheme

The study employed a pretest-posttest design (Creswell, 2012) as can be seen in the table below.

Table 2. Research Design

Pretest (Before Treatment)	Treatment Groups	Posttest (After Treatment)
Writing Performance Task	Web-based Writing Assessment	Writing Performance Task
	Traditional Manual Writing Assessment	

All student participants in the two classes was firstly given writing pretest to map their initial writing performance level in the beginning of the course

before having the treatments. The two sample classes then received the two treatments, one class got one treatment, chosen randomly. And by the end of the treatment, the writing performance level of each group was reassessed with a posttest to see their writing ability scale after following the treatment. The pretest and the posttest were then analyzed and the gain of each group both writing performance level was calculated and compared to see how each assessment system impacted the samples' writing performance.

C. Research Instrument

The instrument to measure the samples' writing performance in this research is a form of short argumentative essay (about 300 words length). The writing performance measurement instrument for both pretest and posttest use same kinds of writing and similar level of difficulty. The topic was different though considering that writing is a skill which is going to progressively get better after a rehearsal process.

D. Data Analysis

The pre- and the post-test of writing performance in this research were scored using the same marking system applied by the Polibatam to assess their students' writing which is analytical writing scoring model. The study was authentically reflecting what is happening in the research site. As the result showed a difference, it should be a difference in a way that the institution could recognize. The pre and post-tests writing score data where be analyzed using SPSS to conduct descriptive and inferential statistic tests to the collected data.

4 DATA FINDING AND DISCUSSION

The students writing performance got increased in both the Traditional and the Web-based writing assessment group as can be seen from the writing pre-test, post-test and gain of both group in the following table.

Table 3. Writing Performance Gain of Traditional and Web-Based Writing Assessment

Treatment Groups	N	Pre-test Mean	Post-test Mean	Gain
Traditional	30	41.10	55.27	14.17
Web-based	27	39.48	65.15	25.67

As can be seen in the table above, the post-test means of both groups are higher than the pre-test ones meaning that the students' writing performance of both groups at the end of the treatment is better than one in the beginning. The following table below shows whether the difference of the pre- and post- test writing performance of the Traditional writing assessment group is significant or not.

Table 4. Writing Performance Pre-and Post-Test Paired T Test of The Traditional Assessment Group.

	Paired Differences			Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	
Writing Post-test – Writing Pre-test	14.167	4.676	.854	.000

The Sig (2-Tailed) value of .000 which is smaller than .05 in in the last column of the output table of the paired t test above shows that the difference of writing post- and pre-test in the Traditional writing assessment group is statistically significant at the at the probability level of .05. This seems to indicate that there is a significant impact of Traditional writing assessment treatment on students writing performance. The result of the same test conducted to the pre- and post- test writing performance of the Web-based writing assessment group can be seen in the table below.

Table 5. Writing Performance Pre- and Post-Test Paired T Test of The Web-Based Assessment Group

	Paired Differences			Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	
Writing Post-test – Writing Pre-test	25.667	6.662	1.282	.000

The Sig (2-Tailed) value of .000 which is smaller than .05 in the output table of the paired t test above shows that the difference of writing post- and pre-test in the Web-based writing assessment group is also statistically significant at the at the probability level of .05. This seems to indicate that there is a significant impact of Web-based writing assessment treatment on students writing performance.

Even though both the Traditional and the Web-based writing assessment groups gave a significant impact to the students writing performance, the writing performance gain of both groups is different as can be seen in on the very left column of the Table III above. That difference can be more clearly seen in the graph below.

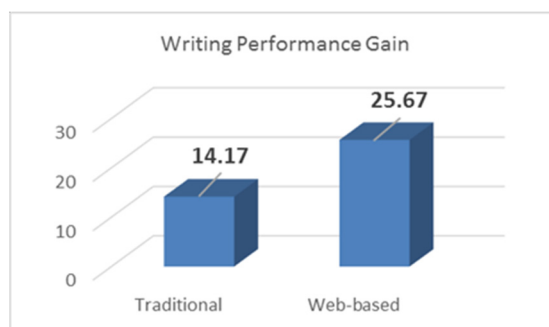


Figure 3. Graph of The Writing Performance Gain of Traditional and Web-Based Writing Assessment.

The graph above clearly shows that the writing performance gain of the Web-based group is almost twice as the once of the one of the Traditional groups. To know whether this writing performance gain difference is significant or not, an Independent Sample Test was conducted, and the result is as shown by the following table.

Table 6. Independent Sample Test of The Traditioanal And the Web-Based Assessment Group Writing Performance Gain

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Writing Performance Gain	Equal variances assumed	2.571	.115	.000	-11.500	1.513
	Equal variances not assumed			.000	-11.500	1.540

In the above Independent Sample Test output table, Sig. of the Levene Test for Equality of Variance is .115 which is >0.05. It means that the data variance between the Traditional and the Web-based group is homogeneous. The interpretation of the Independent Sample Test output then will be based on the "Equal variance assumed" in the table. The sig (2-tailed) of the "equal variance assumed" is .000 which is < .05. It can be concluded then that the difference of the writing performance gain between Traditional and the Web-based group is statistically significant at the probability of .05.

The finding of the research is in line with previous studies that found the use of the computer web-based writing assessment enhanced the students writing performance (Ebyary & Windeatt, 2010; Zhang & Hyland, 2018). This study did find that not only the web-based but also the traditional writing assessment increased the students writing performance. The writing performance gain resulted by the Web-based

writing assessment group though was much higher than the one by the Traditional writing assessment group. The web-based technology helped the lecturer to do the writing assessment easier and faster. It enabled the lecture to give prompt and more comprehensive feedback on students writing assignments. The students then could better recognize the strength and the weaknesses of their writings and do improvements on their writing mistakes. The web-based writing assessment practice in this study could deal with the classic obstacles of the traditional writing assessment, such as the writing assessment complexities and long turnaround time (Edwards, 2012), big classes (Exley & Dennick, 2004), also slow and low quality feedback (Chang, 2007). This way, the students perceived the writing feedback more positively and got it more useful for their writing performance development.

The use of web technology in this study facilitated a more effective writing assessment, but it was still the lecturer himself who did the assessment using the web media. This hence could overcome the weakness of the web-based collaborative writing practice which was also found in other previous studies give a positive impact to students writing performance yet not very effective since the feedback was given by student peers (Bikowski & Vithanage, 2016; Lin et al., 2001; Togatorop, 2015) who were not qualified enough in writing as lecturer was. In the same way, the combination of the lecturer feedback and the use of the web technology could cope with the shortcoming of the computer Automatic Writing Evaluation (AWE) which was found effective in shortening the assessments time and in assessing the students writing in words and sentence level (Zhang & Hyland, 2018) but not in content level (Warschauer & Grimes, 2008). The feedback given by this lecture web-based writing assessment paid enough attention to the student writing content as it is an essential part of writing assessment (Leki, 2004). This way the lecture web-based writing assessment feedback could play its very central role to enable the students to recognize the shortcomings of their writing, what improvements they need to do and how to do it (Edwards, 2012).

5 CONCLUSIONS

This study found that the Web-based writing assessment is significantly better than the Traditional conventional writing assessment. The writing performance gain of the Web-based writing assessment class as the treatment group is much

higher than the one of the Traditional conventional writing assessment class as the control group. The Independent Sample Test conducted to test the writing performance gain difference of the treatment and the control group shows that difference is statistically significant at probability level of 0.05. The practice of the lecturer web-based writing assessment could cope with long turnaround assessment time of the traditional writing assessment.

Regarding to the above conclusion, it is recommended to continue applying and expanding the use of the web-based writing assessment in Polibatam. For further studies in this topic, it was encouraged to do similar research with other different variables on a bigger population.

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