

## E-portfolios and e-dialogue journals: Exploring their use in teaching writing skills

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### Abstract

This research was aimed to find out (1) whether the use of e-portfolios is more effective than the use of e-dialogue journals, (2) whether the use of e-portfolios is more effective than the use of conventional assessments, (3) whether the use of e-dialogue journals is more effective than the use of conventional assessments, and (4) the most effective assessment of all in the teaching of writing skills. This study was a quasi-experimental research using *Pretest-Post-test Control Group Design*. The data were collected in January-February 2016 in SMK Penerbangan Angkasa Ardhya Garini. The sample of the research was the students of class X3, X4, and X8 which were determined by using *cluster simple random sampling*. There were four hypotheses of this study and the research findings revealed that the hypotheses were accepted. It was indicated by all of the *Sig* values which were lower than the level of significance (0.05).

**Keywords:** e-portfolios, e-dialogue journals, writing skills

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## INTRODUCTION

This study was aimed at investigating the effectiveness of the use of electronic portfolios and electronic dialogue journals in the teaching of writing skills. The research was conducted in SMK Penerbangan since being able to communicate in English is very demanding for the students also the graduates. Through the study, the researcher examined theories as well as compared the use of e-portfolios and e-dialogue journals regarding the significance in improving students' writing skill. It is considered that a writing skill is one of the productive skills that determine the communicative competence.

Due to its significance, there is no hesitation that the writing skill gives contributions in the literature world. (Brown & Abeywickrama, 2004, p. 218) states that writing skills have become indispensable and have high significances in this global literature. As it has been known that business transactions, records, legal documents, political and military agreements are written by

those who are expert with the sound knowledge of writing skills. Besides, it is also apparent that in the literate culture nowadays, writing skills have become a prerequisite requirement for getting employment.

Beyond the importance of writing, writing is considered as a complex skill. In line with this, (Richards & Renandya, 2002, p. 303) state that writing is the most difficult skill for students as the second language and foreign language learners. It is because writing consists of several steps as the process in which the students need to generate ideas and communicate those ideas through texts. Furthermore, (Mustafa & Efendi, 2016) claim that writing is not only generating and organizing ideas of our mind, but also translating the ideas into a readable text. Based on their arguments, it seems to be common that learners particularly those who are learning foreign languages have some degrees of difficulties in writing. Consequently, some efforts

need to be done in the teaching and learning process to improve the students' writing skills.

As an effort to improve the students' writing skills, there are some alternative assessments beyond tests could be applied in teaching writing: e-portfolios and e-dialogue journals. According to the Regulation of Education Minister No. 22 (Badan Standar Nasional Pendidikan, 2006), students of vocational high schools should be able to communicate in English related to the contexts of their expertise in both oral and written texts. The use of e-portfolios and e-dialogue journals are expected to help the students achieve the learning objectives and maintain the integrated approach in writing which focuses on both process and product.

Some advantages can be provided through the use of e-portfolios and e-dialogue journals in the teaching and learning process of writing skills. As stated by (Meyer, Wade, & Abrami, 2013), an electronic portfolio is very beneficial since it has a potential to enhance the teaching, learning and assessment practices. They added that e-portfolios can also be learning tools not only because the e-portfolios allow students to organize the content but also because the e-portfolios are designed to support pedagogical processes. In line with this, (Johnsen, 2012, p. 147) states that e-portfolios allow the readers with whom the students can share their ideas and experiences through their writings so that they can make their learning more meaningful. Whereas, according to (Naba'h, 2013, p. 37), it is believed that e-dialogue journals can be beneficial as well in providing opportunities to develop a second language literacy because it encourages students to use a language in meaningful and authentic contexts. He added that e-dialogue journals provide language learners with a meaningful learning context that maximizes language and literacy developments by prompting social interactions.

Both e-portfolios and e-dialogue journals are able to provide self-assessment processes in a learning process. According to (Obisuru & Purbani, 2016) self-assessment enables students to be more active and raise their awareness to edit and correct mistakes or errors in their writings. They added that in the teaching and learning process, teachers are able to give a trust to the students to edit their writing and motivate the students to engage better in the writing process.

Based on an observation and an interview between the researcher and the English teacher at Grade X of SMK Penerbangan, there were

problems found in the teaching of writing skills. In teaching writing teachers had not applied those assessments to improve students' writing skills. Also teachers rarely used media to teach writing so that the classroom activities seemed to be monotonous. What is more, learners still faced constrain in improving their writing skills and did not completely understand that writing could be a commercial activity. Since the students did not completely understand that writing is a commercial activity and still found difficulties in writing, they tended to have low motivation and interest in the writing class.

This research was conducted in SMK Penerbangan since English is agreed language of civil aviation throughout the world. In line with this, communicative and skillful technicians to handle the machines on aircrafts and safe services for the needs of people in this modern era are hardly needed. Regarding this, SMK Penerbangan facilitated the students' communicative competence through the teaching and learning processes of English which cover the four language skills.

Through this research, the researcher used a descriptive text as the indicator to examine the students' writing skills. The decision was based on the basic competency in the national curriculum 2006; students of Vocational High School at grade X should be able to describe things, people and characteristics. In line with this, (Knapp & Watkins, 2005, p. 97) state that a description genre belongs to a language system which has the fundamental functions and the first skill for the students as the language user to learn their language skills. They add that a descriptive text is a widely used genre across the learning level because it enables the students to classify ranges of observations and interactions and allows the students to know certain objects objectively or subjectively.

In short, the teaching of writing skill must be innovative and creative in order to get effective learning processes. E-Portfolios and e-dialogue journals can be appropriate to help students write because those assessments can provide an integrated approach in writing in which the students will focus not only on the writing products but also on the writing processes. Since both electronic portfolios and electronic dialogue journals offer benefits in teaching writing, teachers need to apply those assessments to improve the students' writing skills.

Based on the background of the study above, it is revealed that there were some influen-

tial and manageable factors in the teaching and learning process of writing skill. Those factors are elaborated as follows: (1) students faced constraints in improving their writing skills, (2) students had low motivation and interest in writing classes, (3) students had not experienced the use of e-portfolios and e-dialogue journals in improving writing skills, (4) students had not completely understood that writing is a commercial activity, (5) media provided by the teachers did not effectively support the teaching and learning processes of writing skills, (6) classroom activities in the teaching and learning process of writing seemed to be monotonous.

In a brief, the identified problems are related to students, media, and classroom activities. Besides, it is known that writing skills are taught at all levels of the students. They are elementary school, junior high school, senior high school, vocational high school and university. The identified problems could happen to the students in their learning process on each level. As the result, the researcher should take into account the prioritized problems to be solved in conducting this research.

This study tried to investigate the effectiveness of the use of e-portfolios and e-dialogue journals in the teaching of writing skill at the tenth grade of SMK Penerbangan AAG Yogyakarta. Because of the wide area of the problems, all of the problems could not be identified as the problems of this study. The researcher considered which problem should be solved at first. Since the students had not experienced the use of e-portfolios and e-dialogue journals, it was urgent for the researcher to examine the effectiveness of both assessments in improving the students' writing skills.

Selecting the students of grade X in Vocational High School as the population of the study was appropriate because the students of Vocational High School are prepared to be ready to work. Supporting this, the minister of Education and Culture, Anis Baswedan (2016) in (Widianto, 2016) states that the government prepares graduates of Vocational High School to meet international standards because the Ministry of Education and Culture worked with the National Professional Certification Board and a number of developed countries to develop the vocational education. The graduates' competencies of vocational high schools should be in accordance with international standards. This will help vocational graduates work in various fields, both domestically and abroad. Based on the statements, the

researcher conducted the data collection in a vocational high school.

The formulation of the problems consists of four questions. The questions are (1) is the use of e-portfolios more effective than the use of e-dialogue journals in the teaching of writing skills? (2) is the use of e-portfolios more effective than the use of conventional assessments in the teaching of writing skills? (3) is the use of e-dialogue journals more effective than the use of conventional assessments in the teaching of writing skills? (4) what is the most effective assessment of all: e-portfolios, e-dialogue journals and conventional assessments in the teaching of writing skills?.

The objectives of the problems are stated as follows: (1) To find out whether the use of e-portfolios is more effective than the use of e-dialogue journals in the teaching of writing skills, (2) To find out whether the use of e-portfolios is more effective than the use of conventional assessments in the teaching of writing skills, (3) To find out whether the use of e-dialogue journals is more effective than the use of conventional assessments in the teaching of writing skills, (4) To find out the most effective assessment among e-portfolios, e-dialogue journals and conventional assessments in the teaching of writing skills.

This research contributes theoretically the development of knowledge in the educational area, especially the use of electronic portfolios and electronic dialogue journals in the teaching and learning processes of writing skills. The knowledge provides the progress of theories in improving students' writing skill. Based on the found theories, it can be considered to select and apply appropriate assessments such as electronic portfolios and electronic dialogue journals in teaching writing skills.

This study is expected to be an additional resource for teachers or lecturers in improving writing skills through the use of electronic portfolios and electronic dialogue journals. This study helps the lectures/teachers consider and select effective assessments which enhance the success in the teaching of writing skill as well as improve the students' writing skills.

This study attempts to obtain a solution to help the students improve their writing skill. Students can expose ways to develop their writing skill through the use of electronic portfolios and electronic dialogue journals. The students can do reflections toward their writings and can

be given feedbacks so that they can be autonomous learners.

## METHOD

This study used a quantitative method and belonged to an experimental research. Through this research, the researcher tried to compare the use of e-portfolios and the use of e-dialogue journals to find out the effectiveness of both assessments in the teaching of writing skills at grade X of SMK Penerbangan AAG Yogyakarta. The research design of this study was *quasi pretest-post-test control group design*.

The researcher collected the data in January-February 2016. Furthermore, the researcher conducted the data collection in SMK Penerbangan AAG Yogyakarta. The school is located on Jalan Janti, Komplek Lanud Adisucipto, Depok, Sleman, Daerah Istimewa Yogyakarta.

The population of the research was all of students in SMK Penerbangan AAG Yogyakarta at grade X. The sample of the research was the students at grade X of SMK Penerbangan which consisted of three classes. The three classes were class X4 as the experimental class I, class X3 as the experimental class II, and class X8 as the control class.

The researcher used a technique of *cluster simple random sampling* to determine the experiment and control classes. In determining the sample, the lottery technique was employed together with the English teacher who teaches the tenth grade students in SMK Penerbangan AAG.

In the pre-experiment stage, the researcher conducted a teacher training. The English teacher of the tenth grade in SMK Penerbangan would teach both experiment and control classes. Before conducting the research, the researcher gave explanations related to teaching writing skills using e-portfolio and e-dialogue journals. The teaching method, materials and media applied in the three classes would be the same. What was different during the experiment is on the use of alternative assessments: e-portfolios, e-dialogue journals, and conventional assessments. The conventional assessment was applied in the control class.

During the experiment stage, the researcher gave the pre-tests and treatment to the experimental and control classes. The researcher had to decide which classes would be the experimental and control class. The preparation is done by determining the sample of the research and conducting a pretest to both experiment and control classes to get an equivalence of the

students' writing skills. The researcher used a technique of *cluster simple random sampling in* determining the sample of the research which will be control and experiment classes. An experiment is valid if the findings obtained are only caused by independent variables (manipulated) and if the findings can be applied on other researches. There are two validities must be filled; they are internal and external validity.

On the post-experiment stage, the researcher conducted post-test to the students of the three classes to know the students' achievements after conducting the experiment. To assess the students' writings, the researcher employed an inter-rater reliability to avoid subjectivity and to get a valid assessment. After gathering the data, the researcher analyzed and interpreted the data to draw conclusions.

There were two independent variables used in this research. Independent variables used in this research are e-portfolios (X1) and e-dialogue journals (X2). Those assessments were the treatments applied in the experimental classes. For the control class, the researcher used a conventional assessment in teaching writing.

The students' writing skills (Y) was considered as a dependent variable. The scores of writing tests present the data of this variable. To collect the data, the researcher administered a writing test in the form of essay based on the basic competencies of writing skills in curriculum 2006.

The researcher administered a writing test in the control and experiment classes for both pre-test and post-test. As the technique of data collection, the researcher assigned the students to write to collect the data in the form of students' writing scores. The students of the three classes: X3, X4 and X8 in SMK Penerbangan were assigned to write a descriptive text. The ability of students in Vocational High Schools to describe things, people and characteristics is mentioned in BSNP 2006. The topics of descriptive texts were about terms found in the aviation world so that the students could express ideas related to their interest and expertise.

The research instruments were in the form of essay (writing test) which are based on a blueprint and a consultation with a lecturer (expert-judgment). For the writing test, the students were asked to write a descriptive text. Furthermore, the instruments were designed by considering the standard of competence and the basic competencies of English in writing skill for the tenth grade of Vocational High School in the

second semester. In line with this, the basic competency of students in the Vocational High School at the grade X states that the students should be able to describe things, people, and characteristics.

The data which were obtained from the writing scores were analyzed to find out the significance and differences of the students' improvements taught by using e-portfolios, e-dialogue journals and conventional assessment. Moreover, the researcher used a scoring rubric in assessing students' writings.

This research used a content validity as the validity of the research instruments. The content validity examined whether the test items as the instruments of the research are related to the teaching syllabus or not. The instruments of this study were constructed based on the Standard of Competence and Basic Competencies of Vocational High Schools of the tenth grade students in semester two. The researcher also consulted the instruments to the lecturer and the English teacher (expert judgment).

The researcher referred to the Standard of Competence and Basic Competencies of Vocational High Schools of the national curriculum 2006 of the tenth grade students in semester two to write the instruments of the research.

In this study, the researcher employed *inter-rater* or *inter-scorer reliability* to measure the reliability of the instruments. *Inter-scorer reliability* is the degree of agreement between two or more raters or scorers. The researcher used the correlation coefficient between two classes (*Intraclass Correlation Coefficients*) to examine the reliability. It involved an assessment done by two individuals, i.e. the researcher was the first rater and the second rater was the English teacher.

The technique of the data analysis which was used in this research is a parametric statistical technique; that is One-Way ANOVA continued by *Scheffe* test. Moreover, to analyze the data, the researcher used a computer program as the instruments of the data analysis namely *IBM SPSS Statistics 20*. The researcher applied One-Way ANOVA because this is an experimental research which examined the significant difference of two assessments: e-portfolios and e-dialogue journals as well as examined the effectiveness of the assessments compared to the control class which used a conventional assessment.

In applying One-Way ANOVA as the technique in analyzing data, the researcher had to make sure that the analyzed data meet some criteria related to the normality and homogeneity.

To analyze the data, the researcher employed two kinds of statistical analysis. The two kinds of statistical analysis are descriptive and inferential analysis.

The two kinds of statistical analysis are descriptive and inferential analysis. The researcher used a descriptive analysis to see the description of the data such as the number of the students, mean, standard deviation, sum, median, maximum score and minimum score. In conclusion, a descriptive analysis is statistics used to summarize the data. The descriptive analysis employs the mean and the standard deviation. There are two descriptive analyses in this research: mean and standard deviation, and categorization.

The researcher used mean because it is commonly used measurement of central tendency because the mean takes all scores into account. The mean is the same as average of the scores. Whereas, standard deviation is used to measure the variability. The larger the standard deviation, the more various it has to the central point in the distribution and the lower the standard deviation, the closer the distribution it has to the central point.

Data categorization is based on the ideal mean as an ideal benchmark and standard deviation, which is then grouped into five categories, while the distance determination uses the standard deviation within five-standard deviation. The researcher used the categorization which is proposed by (Azwar, 2003). The five categories of the group and the interval scores are *very good* (>82.49), *good* (67.5 - 82.49), *fair* (52.5 - 67.49), *poor* (67.5 - 52.49) and *very poor* (< 37.5).

A normality test is used to know whether the data distribution is in a normal distribution or not. Furthermore, the researcher employs *One Sample Kolmogorov-Smirnov* formula. Based on the significance level, the conclusion can be drawn: (1) if the significance probability is greater than the level of significance (0.05), the data have a normal distribution, (2) if the significance probability is lower than the level of significance (0.05), the data are not in a normal distribution.

Homogeneity test is used to know whether sample taken has the same variance and does not show the significant difference among data. The researcher used *Levene* test to test the homogeneity. Based on the significance level, the conclusion can be drawn: (1) if the significance probability is greater than the level of significance (0.05), the variance is homogenous, (2) if

the significance probability is greater than the level of significance (0.05), the variance is not homogenous.

## FINDINGS AND DISCUSSION

In this part, the pre-test scores of the three classes are compared. Yet, the scores are distinctive by nature. The comparison of the pre-test scores of the control class, experimental class I and experimental class II is presented in the Table 1.

Table 1. Descriptive Statistic of Pre-Test in Control Class, Experimental Class I and Experimental Class II

Data	N	Mn	Max	Min
Pre-test of the Control Class	34	58.19	71.50	45.50
Pre-test the Experimental Class I	34	60.93	74.50	48.00
Pre-test of the Experimental Class II	34	60.43	71.50	49.00

Table 1 shows that the mean of the experimental class I is 60.93; the mean on the experimental class II is 60.43 whereas that in the control class is 58.19. It means that the mean of the experimental class I is greater than that of the experimental class II and the control class; however the mean difference is not quite significant.

Although the mean of the pretest of experimental class I is greater than that of the experimental class II and control class, i.e.  $60.93 > 60.43 > 58.19$ , the three classes are classified into *fair* category. It is showed that the highest frequency of the pre-test of the experimental class I (twenty seven respondents = 79.41%), the highest frequency of the pre-test of the experimental class II (twenty five respondents = 73.53%) and the highest frequency of the pre-test of the control class (twenty nine respondents = 85.29%) are categorized into *fair* category. So, it can be concluded that most students of the three classes are classified into the same level, i.e. a *fair* level or the students of the three classes had fair writing skills.

In this study, the researcher employed *Anova* to examine whether there is any significant difference of the students' writing skills in the three classes: experimental I, experimental II and control class before the treatment was applied. The researcher used *SPSS 20* computer program to analyze the data. The result of the analysis is presented in the Table 2.

From the Table 2, it can be seen that the value of *Sig.* is greater than 0.05, i.e.  $0.199 > 0.05$ .

Based on the result, it can be inferred that before applying e-portfolios, e-dialogue journals and conventional assessments in the experimental class I, experimental class II and control class; the three classes had no significant difference on the students' writing skills. Therefore the three classes were proper to be researched.

Table 2. Result of Analysis using *Anova* of Pre-Test in the Experimental I, Experimental II and Control Class

		df	F	Sig
Pretest	Between Groups	2	1.6	0.199
	Within Groups	101		
	Total	103		

The results of the students' post-test scores in the three classes are described in this part. The comparison of the post-test scores of the control class, experimental class I and experimental class II is presented in the Table 3.

Table 3. Descriptive Statistic of Post-Test in Control Class, Experimental Class I, and Experimental Class II

Data	N	Mn	Max	Min
Post-test of Control Class	34	65.75	76.00	54.00
Post-test of Experimental Class I	34	73.87	84.00	62
Post-test of Experimental Class II	34	69.94	83.50	56.00

Table 3 shows that there was an increase (12.94) of the mean on the experimental class I (73.87); there was an increase (9.51) of the mean on the experimental class II (69.94) and there was an increase (7.56) of the mean on the control class (65.75). It means that the increase of the mean on the experimental class I is higher than that of the experimental class II and control class.

It is known that the three classes are classified into different categories. The highest frequency of the post-test in the experimental class I (twenty five respondents = 73.53%) is categorized into the *good* category. The highest frequency of the post-test in the experimental class II (twenty two respondents = 64.71%) is categorized into the *good* category. Also, the highest frequency of the post-test score of the control class (eighteen respondents = 52.94%) is categorized into the *fair* category. So, it can be inferred that most of the students in the experimental class I and experimental class II achieved a greater significant improvement related to writing skills than that of the control class after the applied treatments.

Based on the posttest, there is a significant difference of the three classes. The significant difference related to the students' writing skills in the three classes after applying the treatments is presented in the Table 4.

Table 4. Significant Difference of the Students' Writing Skills

		df	F	Sig.
Post-test	Between Groups	2	14.59	.000
	Within Groups	99		
	Total	101		

Before testing the hypotheses, the researcher applied normality and homogeneity tests. The test of normality is aimed at finding out whether the data show the normal distribution. To test the normality, the researcher employed *One-Sample Kolmogorov-Smirnov*. Theoretically, in pre-testing analysis, if the value of *p* or *Asymp. Sig. 2-tailed* is greater than  $\alpha$  (0.05), the data have a normal distribution. However, if it is lower than 0.05 the data are not in a normal distribution. The Table 5 presents the result of the normality test of students' writing skills.

Table 5. Result of Normality Test

Data	P	$\alpha$
Pre-Test of Experimental Class I	0.685	0.05
Post-Test of Experimental Class I	0.794	0.05
Pre-Test of Experimental Class II	0.881	0.05
Post-Test of Experimental Class II	0.994	0.05
Pre-Test of Control class	0.938	0.05
Post-Test of Control class	0.568	0.05

Table 5 shows that the values of *p* or *Asymp. Sig. (2-tailed)* of the pre-test of the experimental class I, experimental class II and control class are greater than 0.05, i.e.  $0.685 > 0.05$ ,  $0.881 > 0.05$ , and  $0.938 > 0.05$ . Moreover, the values of *p* of the post-test of the experimental class I, experimental class II and control class are also greater than 0.05, i.e.  $0.794 > 0.05$ ,  $0.994 > 0.05$  and  $0.568 > 0.05$ . It means that the data of the pre-test and post-test of the three classes are in the normal distributions.

A homogeneity test is used to examine whether the sample variance is homogeneous. In this case, the researcher used *Levene* test to examine the homogeneity of the pre-test and post-test of the three classes. In pre-testing analysis, if the value of *Sig.* is greater than 0.05, the data are homogeneous. The result of the homogeneity test of the pre-test and post-test is presented in the Table 6.

Table 6 shows that the value of *Sig.* of pre-test (0.525) is greater than the level of signi-

ficance (0.05) i.e.  $0.525 > 0.05$ . Besides, the value of *Sig.* of the post-test (0.724) is also greater than the level of significance (0.05) i.e.  $0.724 > 0.05$ . This means that the sample variance of the data in the three classes is homogenous.

Table 6. Result of Homogeneity Test

Data	Group	Levene	Sig.
Pre-test	Exp. I	0.649	0.525
	Exp. II		
	Control		
Post-test	Exp. I	0.325	0.724
	Exp. II		
	Control		

Since the data meet the requirements to be normal and homogeneous, the researcher then tests the hypotheses. The hypothesis testing is aimed at revealing whether the hypotheses proposed by researcher are accepted. There are four hypotheses that were tested using *Anova* which was continued by *Scheffe* test. *Anova* is used to examine the significance of the treatments such as e-portfolios, e-dialogue journals and conventional assessments in the teaching of writing skills whereas *Scheffe* test is used to know the rank of the assessments or treatments.

The hypothesis testing of the four proposed hypotheses is elaborated as follows. The first hypothesis says that the use of e-portfolio is more effective than the use of e-dialogue journal in the teaching of writing skills. After analyzing the data using *Scheffe* test, the researcher found that the first hypothesis is accepted. Furthermore, it can be interpreted that the students in the experimental class could perform better in writing after getting the treatment, i.e. e-portfolios, than the students in the experimental I class II who used e-dialogue journals as the treatment. It is indicated from the Table 7.

Table 7. Hypothesis Testing I

(I) Group	(J) Group	Mean Difference (I-J)	Sig.
Exp. Class I	Exp. Class II	3.92647*	.037

Based on the Table 7, it is known that the value of *Sig* is 0.037 is lower than 0.05. It means that there is a significant difference of the two classes. That the use of e-portfolios in the Experimental Class I is more effective than the use of e-dialogue journal in the Experimental Class II is proved by the mean difference, i.e. 3.92647. Therefore, the first hypothesis of this research is accepted.

The second hypothesis says that the use of e-portfolio is more effective than the use of conventional assessments in the teaching of writing skills. After analyzing the data using *Scheffe* test, the researcher found that the second hypothesis is accepted. Furthermore, it can be interpreted that the students in the experimental class I could perform better in writing after getting the treatment, i.e. e-portfolios, than the students in the control class who got conventional assessments as the treatment. It is indicated from the Table 8.

Table 8. Hypothesis Testing II

(I) Group	(J) Group	Mean Difference (I-J)	Sig.
Exp. Class I	Control Class	8.11765*	.000

Based on the Table 8, it is known that the value of *Sig* is 0.000 is lower than 0.05. It means that there is a significant difference of the two classes. That the use of e-portfolios in the Experimental Class I is more effective than the use of conventional assessments in the control class is proved by the mean difference, i.e. 8.11765. Therefore, the second hypothesis of this research is accepted.

The third hypothesis says that the use of e-dialogue journal is more effective than the use of conventional assessment in the teaching of writing skills. After analyzing the data using *Scheffe* test, the researcher found that the third hypothesis is accepted. Furthermore, it can be interpreted that the students in the experimental class II could perform better in writing after getting the treatment, i.e. e- dialogue journals, than the students in the control class who got conventional assessments as the treatment. It is indicated from the Table 9.

Table 9. Hypothesis Testing III

(I) Group	(J) Group	Mean Difference (I-J)	Sig.
Exp. Class II	Control Class	4.19118*	0.024

Based on the Table 9, it is known that the value of *Sig* is 0.024 is lower than 0.05. It means that there is a significant difference of the two classes. That the use of e-dialogue journals in the Experimental Class II which is more effective than the use of conventional assessments in the control class is proved by the mean difference, i.e. 4.19118. Therefore, the third hypothesis of this research is accepted.

The fourth or the last hypothesis says that e-portfolio is the most effective assessment of all: e-dialogue journals and conventional assessments in the teaching of writing skills. After analyzing the data using *Scheffe* test, the researcher found that the fourth hypothesis is also accepted. Furthermore, it can be interpreted that the students in the experimental class I could perform best in writing after getting the treatment, i.e. e-portfolios, compared to the students in the control class who got conventional assessments and the students in the experimental class II who used e-dialogue journals as the treatment. It is indicated from the Table 10.

Table 10. Hypothesis Testing IV

(I) Group	(J) Group	Mean Difference (I-J)	Sig.
Exp. Class I	Control Class	8.11765*	0.000
	Exp. Class II	3.92647*	0.037

Based on the Table 10, it is known that the value of *Sig* of the control class is 0.000 and the value of *Sig* of the experimental class II is 0.037 are lower than 0.05. It means that there is a significant difference of the three classes. That e-portfolio in the experimental class I is the most effective assessment of all is proved by the mean difference of the experimental class II, i.e. 3.92647 and the mean difference of the control class, i.e. 8.11765. In the other words, the experimental class I has the highest mean of all. Therefore, the fourth hypothesis of this research is accepted.

E-portfolios and e-dialogue journals are beneficial to help the students in learning writing. The students' writings in the experimental classes were assessed by the teacher and friends through feedbacks and comments. The students were encouraged to explore ideas to write and organize their writing well. Therefore, the students were able to do reflection to write better in the next writing tasks.

Both e-portfolios and e-dialogue journals provide benefits for the students in writing. In the educational settings, an e-portfolio is one of the alternative tools that can be used in the teaching and learning process, (Alawdat, 2013). He adds that e-portfolios, based on its nature, can motivate students to learn and actively become autonomous learners (Alawdat, 2013; Chau & Cheng, 2010; Gerbic, Lewis, & Amin, 2011; Stefani, Mason, & Pegler, 2007). E-portfolios also provide students with a lot of opportunities



to reinforce their learning skills, self-assessment, and their communication with the world. Eventually, it helps students achieve the learning goals through their learning process (Alawdat, 2013; Barrett, 2006). Moreover, according to (Harmer, 2007, p. 126) e-dialogue journals can provide an opportunity for the students to think both about how they are learning and about what they are learning. This kind of introspection may well lead them to greatly enhance their progress. (Harmer, 2007) added that if an e-dialogue journal is successfully applied in the teaching and learning process, it has a powerful effect upon the students' motivation, which is important to promote learner's autonomy in writing.

The student's writing skill in the experimental class I and experimental class II in SMK Penerbangan AAG Yogyakarta can be improved significantly by the use of e-portfolios and e-dialogue journals. Furthermore, the students could learn without any pressure and engaged in learning writing since they were welcome for any comments from the teacher and friends. The students in the control class did not get alternative assessments like other two classes, and their writings were scored directly by the teacher.

The three classes: experimental class I, experimental class II and control class show a significant difference related to the students' writing skills. Based on the research conducted, the students in the control class which were taught using a conventional assessment, but the materials, teacher, method, media and technique were same to those of the experimental classes. The students in the control class did not get written feedback from either the teacher or other students. They did not experience different activities to display their writing electronically. It was different from the writing activities in the experimental classes which involved the use e-portfolios and e-dialogue journals; the students got a chance to give and receive feedbacks.

The learning activities or the treatments in the three classes were done in four meetings, in which each two meetings consisted of four phases; they are Building Knowledge of the Field, Modeling of Text, Joint Construction of the Text, and Independent Construction of the Text. On the Building Knowledge of the Field, the students of the three classes were stimulated to give simple oral description related to a picture. By observing the picture, the students tried to describe the picture simply and were lead to what was going to be learnt i.e. descriptive text.

On the phase of Modeling of Text, a descriptive text was presented to be learnt by the students. In this phase, the students were expected to identify characteristics and the grammatical features of descriptive texts. On the Joint Construction of the Text phase, the students were asked to write a descriptive text in pairs. In the experimental class I, the students' writings were assessed through e-portfolios by giving feedbacks. The students were asked to be critical to give comments of writings. Whereas, in the experimental class II, the students' writings are assessed through e-dialogue journals (e-mail) so that only the teachers can know and comment the students' writings. The feedbacks given to those classes were emphasized to the content of writings. Furthermore, in the control class, the students' writings were scored by the teachers.

In the Independent Construction of the Text, the students wrote a descriptive text individually and got the same assessment for each class as what was done in the previous phase. The four phases were repeated once more in the next two meetings. Thus, the students got four treatments or chances in writing.

In general, based on the students' writing samples, it could be seen that the students of the three classes showed an improvement in the aspect of content and organization. The students could explore more ideas better and organize them well. Furthermore, the students could use more various and appropriate diction which are related to the vocabulary aspect. For the language use aspect, the students still faced the problem. However, the students in the three classes got improvements as well related to the language use.

Finally, the students improved the mechanism aspect since the students were always warned related to how to write with correct spelling, punctuation, capitalization and paragraphing.

## CONCLUSION

Based on the research findings and the discussion in the previous chapter, the researcher proposes some statements as the conclusion. The statements are (1) the use of e-portfolios is more effective than the use of e-dialogue journals in the teaching of writing skills, (2) the use of e-portfolios is more effective than the use of conventional assessments in the teaching of writing skills, (3) the use of e-dialogue journals is more effective than the use of conventional assessments in the teaching of writing skills, and (4) e-portfolio is the most effective assessment among

all: e-dialogue journals and conventional assessments in the teaching of writing skills.

The conclusion is drawn based on the research conducted in SMK Penerbangan AAG Yogyakarta by involving the students of X3, X4, and X8 as the subject of the research. To avoid the bias, the researcher controlled internal validity by making sure that the students did not have experience in using e-portfolios and e-dialogue journals, employing a lottery to get the sample, creating different questions with the same indicators for both pretest and posttest, validating the instruments of the research (expert judgment), controlling the number of the students who always attended the class, and conducting the teaching and learning process optimally.

The research finding shows that e-portfolio is the most effective assessment of all: e-dialogue journals and conventional assessments in the teaching of writing skills. It implies theoretically that the use of e-portfolios is an alternative assessment which is not only used to measure students' ability in writing but also used to show the progress of the students' works or writings. Also e-portfolios provide chances to the students to give comments and do reflections. The teacher, students and parents can provide feedbacks or comments which are very important for the students to improve their writing skills.

The research findings practically can be used as a consideration for the English teachers to take into account the students' needs in writing and improvements in writing skills. Since the findings conclude that e-portfolio is the most effective assessment, the teacher can apply this alternative assessment to facilitate the students in improving their writing skills.

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