Combining subtext application technology and collaborative writing to improve EFL remedial students’ writing competence with different learning style

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Abstract. This study was aimed to see the difference of the slow students' writing competence taught using two different strategies: collaborative writing and individual writing by considering learners’ learning style. This study used experimental design using factorial design 2x2. Two classes of remedial learners consisted of 30 students for each group was assigned into 2 smaller groups to match with their learning style falling into two classifications: field independent and field dependent learning style. The four groups were given treatment for about 7 meetings. The study revealed three findings. First, learning achievement of the subjects given collaborative writing was higher than the subjects given individual writing. Second, the learning achievement of the subjects having field independent learning style was higher than the learning achievement of the subject with field dependent learning style. Third, there was no significant interaction between the different analogy types with the subjects’ learning style towards writing achievement improvement.

1. Introduction
Writing as one of four skills in learning English is always challenging for the language practitioner to discuss mainly concerning with the best approach to improve it effectively. In this digital era, the range of technologies is available for use in language learning and teaching. They are being used in classrooms all over the world to make language learning and teaching more challenging and exciting [1]. One of the approaches widely discussed nowadays is collaborative writing. Applying collaborative approach to improve students’ writing skill is a challenge. In collaborative writing, student pairs or triads write a formal paper together [2]. Each student contributes at each stage of the writing process: brainstorming ideas, gathering and organizing information, drafting, revising, and editing the writing. Working together can help students to learn and perform the stages of writing more effectively. It means that in pairs or triads, students will produce better work than when they work alone. Collaborative writing will improve document quality by pooling the strengths of group members. At
the same time, individual weaknesses are caught by the group and revised. Ultimately, collaboration can be a form of motivation for students as they become excited about working in a group as well as the prospect of learning from other students.

Collaborative Writing was essentially a social process through which writers looked for areas of shared understanding [3]. It means that the students have to consider about several social and interactional rules, such as: they set a common goal, they had differential knowledge, they interacted as a group, and they distanced themselves from the text. Besides that, they much more know about the content, organization, word choice, grammar, punctuation, and spelling. Based on the definition above, can be concluded Collaborative Writing is a process of producing a written that do in group where each member contributes at each stage of writing process and the goal of writing.

Learning style is a relatively fixed habit of acting within a person in receiving, thinking, solving problems or in remembering information [4]. This means, every individual has a different learning style. Learning styling is an innate trait associated with reception, organizing and storing information [5]. This way of relative shows a stable and consistent indication of how learners receive, interact, and respond to the learning environment. It was also added that although learning styles (in which learning styles are part of it) are related to intellectual ability, but between them is quite different. If the style describes the process of cognition that refers to how information is processed, then more intellectual ability refers to the content of the cognition.

Learning style as one's self-characteristic of a fixed way of the functions shown in acceptance and intellectual activity[6]. The formula that the learning style is a relatively fixed habit of acting in the learners in thinking, remembering, receiving and processing information. In his description, [7] explains that one's learning style is on two different sides, e.g. field dependent vs field dependent, holist vs serialist, and global vs. analytic. In this case, even if a person occupies a certain position on those sides, yet everyone has different levels. Furthermore, [8] describes 4 characteristics of learning style. First, pay more attention to the form rather than the content of learning activity. It refers to individual differences of how to feel, have, solve problems, learn and connect with others. Secondly, the learning style is the penetrating dimension.

Writing as one of the four skills has always formed part of the syllabus in the teaching of English. The students of EFL in higher education have to master about writing. In fact, the students have difficult to make good paragraph. They have low of vocabulary, knowledge, and use of grammar. It is make students spent long time in writing. The learning process is ineffective. The researcher use Collaborative Writing as technique for teaching writing especially for remedial students. In Collaborative Writing, students use list of words or outline. This technique is part of cooperative learning. It means that this technique can make students active, have cooperation because these techniques applied in group. Every member has responsible for their group progress. The class using collaborative writing was used as experimental class and another using individual writing to be studied concerning with which one effectively increase remedial EFL students’ ability in writing.

Nowadays, the teacher is suggested to use media to deliver the teaching material optimally in teaching learning process. It will be full of fun, interesting as well as challenging teaching learning activity hence the students could grasp the teaching material clearly and comfortably in the classroom. Along with the times, applying technology into teaching is very important today [9]. In teaching teachers should pay attention to the principle of application of technology in the classroom. Important technology is used by teachers to provide students with new and meaningful experiences[9]. Besides, technology can create new media in teaching and learning that result in interesting and interactive learning environment. One of the newest technologies that teachers can use is Subtext Teaching Aplication Technology. Subtext a modern teaching technology application designed for educational purposes [10]. Several studies have proven empirically[11] that Subtext Learning System can be applied in teaching writing. This research is intended to test the effect of application of Subtext technology to improve remedial EFL students' writing skills.

One of the objectives of Writing Course at Higher Education is to give understanding of scientific concepts writing and express it in paragraph writing. In terms of providing an understanding of this
concept and writing the concept to paragraph writing, giving collaborative strategy is as one alternative. In fact, many students have difficulties in understanding the concept and expressing the ideas in paragraph writing. These students experience the slowness of learning. This is shown in the presence the value of learning outcomes under 60 from a maximum scale of 100. In the Faculty of Education and Language of State Islamic Institute of Surakarta, where this research is conducted, there is a remedial class program that aims to accommodate and provide material enrichment to study participants who are deemed experiencing delays in learning. According to the year-to-year experience of an average of 120 participants in the writing study, more than a third experienced a learning problem indicated by the low average learning outcomes. In general, this study is expected to find answers to the general question about whether the use of collaborative writing can be combined with the learning style differences of slow learners.

The problem in this research is essentially to find: (1) the differences in of the EFL remedial students’ writing competence with the use of collaborative writing compared to individual writing, (2) the differences in learning outcomes in writing competence of remedial writing class participants across different learning styles and (3) the interaction between the use of teaching strategy and learning style toward the learning outcomes of remedial class participants in the class.

2. Method
This research uses experimental type of research. The research is intended to reveal the causal relationship between variables in which the researcher manipulates the independent variables and then observes the dependent variables to find the variations that appear along with the manipulation of the independent variables. The design model used is a 2x2 factorial design involving two or more independent variables called factors in a single design. The cells of the design are determined by the level of the combined independent variables[12] This study will examine three variables: (1) independent variable, that is learning strategy which consists of learning strategy using collaborative writing (CW) and by using individual writing (IW), (2) dependent variable, that is subjects’ learning outcome (LO) or learner’s writing achievement, and (3) moderator variables, they are field dependent (FD) and field independent (FI) learning style. Each variable or more precisely factors consists of 2 levels and 2 levels, namely teaching writing factors and learning style factors. Teaching factor consists of 2 levels, namely the level of collaborative and individual writing. The learning factor consists of 2 levels, the FD and FI levels.

Procedures of activities in the implementation of this study include: the measurement of the level of learning style, applying learning strategies using collaborative and individual writing and administering test to measure the subjects’ achievement. The learning style test is administered at the first meeting after the two experimental groups are formed. From the two experimental classes that have been formed as above each are subdivided into two groups, the subject group with the FD and FI learning style. This learning style grouping is done by learning-style tests using the Embedded Group Test (GEFT) Group from [6] As mentioned above the method used in data collection in this study is the test, namely learning style test and writing test. The data of this study were analyzed by using descriptive statistical analysis and parametric inferential statistical analysis (ANOVA). The descriptive analysis in this study will show the learning acquisition data on both the learning method and the learning style group.

Variant analysis is intended to answer questions and hypotheses proposed in this study. In this research will be tested three hypotheses, each having relevance to the research variables, namely (1) the influence of independent variables (collaborative writing and individual writing) to the learning outcomes, (2) the influence of moderator variables (FD and FI learning style) to the dependent variable, and (3) the interaction between the independent variable and the moderator variable to the dependent variable. Prerequisite test including homogeneity test and normality test was also performed.

3. Result
The following is testing the effect of individual writing and collaborative writing on subjects’ learning achievement. The purpose of the analysis in this section is to determine whether there is any effect of applying teaching writing variation on subjects’ learning achievement across learning style. Table 1 gives a description that the F-ratio for teaching technique is 5.427 with the degrees of freedom 2. The P-value is .002. This research uses significance level .05 (α = .05). It can be interpreted that there is significant different mean score of the students’ learning achievement after being taught using collaborative writing and individual writing.

Therefore, it can be concluded that there is significant different effect of applying teaching writing variation on the slow learner students’ writing achievement. From the result of analysis of estimated marginal means, as shown in Table 2, the rank of the two groups is known.

### Table 1. Tests of Between-Subjects Effects

| Source                     | Type III Sum of Squares | Df | Mean Square | F      | Sig.  |
|----------------------------|-------------------------|----|-------------|--------|-------|
| Corrected Model            | 5688.285 (a)            | 8  | 738.814     | 10.235 | .000  |
| Intercept                  | 1167055.33              | 1  | 1278166.404 | 17062.092 | .000  |
| Teaching writing           | 853.391                 | 2  | 482.195     | 5.427  | .002  |
| Learning Style             | 433.163                 | 3  | 289.581     | 3.514  | .028  |
| Teaching writing * Learning Style | 4191.743             | 5  | 1211.861    | 17.660 | .000  |
| Error                      | 18442.100               | 261| 74.913      |        |       |
| Total                      | 1203418.000             | 270|             |        |       |
| Corrected Total            | 25251.596              | 255|             |        |       |

a R Squared = .258 (Adjusted R Squared = .235)

The highest mean score of learning achievement is achieved by the group of students given collaborative writing. The second position is achieved by the group of students taught using individual writing.

### Table 2. Estimated Marginal Means

| Teaching Writing Variation | Mean     | Std. Error | 95% Confidence Interval | Lower Bound | Upper Bound |
|----------------------------|----------|------------|-------------------------|-------------|-------------|
| 1=Individual writing       | 65.700   | .812       | 63.704                  | 66.386      |             |
| 2=Collaborative writing    | 70.173   | .812       | 67.376                  | 72.080      |             |

### 4. Discussion

The result of this study revealed that collaborative writing was more beneficial than individual writing especially for proficient learners. Collaborative writing can give spontaneous response. The suggestion given in collaboration can be spontaneously responded by the students that result in revision of the error quickly. Therefore, collaborative writing has really can give many advantages and can be claimed as the effective method in teaching learning.

Moreover, the researcher also found four advantages during implemented collaborative writing as a method in teaching and learning. They are building learning community in the classroom, negotiation possibility, building higher accountability and finding different perspectives. Collaborative writing can build a leaning community in the classroom. When the students exchanged and shared their ideas with their peers by negotiating about the analogy given, the students could learn from each other and they could build a higher level of accountability to submit a well-written product to the teacher.

As shown in Table 2, the learning performance of the students given collaborative writing is better than the learning performance of the students without collaborative writing. Even, it is still better than the learning performance of the students given individual writing technique. The finding of this study confirms that collaborative writing helped the students become more critical. Collaborative writing not
only helped students improving their learning skills, but it also enhanced their critical thinking and reading and at the same time motivated them to write.

Another advantage of collaborative writing in learning is about the comfort and easiness of the students in engaging mutual criticism and reciprocal information. Students like and feel comfortable to receive information from their peers. They indicated that it was easier to talk with friends than teacher to get ideas to write. To the friends they could say whatever they wanted. Although it seems about the psychological reason, but it really affect their writing performance. The data as described in Table 2 empirically shows that collaborative writing had a positive effect in social aspect hence increase the students’ writing.

Another reason about why collaborative writing gives advantages to students hence increases significantly their writing performance is concerning with awareness of their error, learning from their peer and self reflection. Those three reasons affect not only to psychological but also empirical experience to the students. Collaborative writing is helpful for their students to be aware of the common errors in their learning, learnt from their peer’s learning, raised the audience’s awareness, enhanced their own learning quality, stirred self-reflections, and promoted interest and motivation in learning writing.

Collaborative writing reduced the teacher’s workload in providing analogy. By using collaborative writing as a method in teaching learning, it helped the researcher as a teacher to correct all the students’ learning product quickly without spending more time and energy. Therefore, collaborative writing was not only effective but also efficient as a method in teaching writing.

Teaching using subtext technology is also able to facilitate cognitive processes for students in writing. Writing is not only creating products[13] but also involving process [14]. Cognitive processes such as composing, synthesizing ideas, and writing publications are forms of thought-provoking activity [15] This not only applies in paper-based writing, but also writes in a multimedia environment. Teaching using subtext technology is able to facilitate cognitive processes for students in the learning process of writing.

As shown above this research found that the students in experimental group who are taught by using subtext technology based teaching have higher performance in writing composition than those given conventional non technology based teaching. The analysis of that fact can be clarified by the following reason. Instructional media, including subtext in this research, is any devices of techniques utilized to deliver the teaching material from the teacher to students. Therefore, the instruction media are expected to arouse the learners’ motivation, thought, and interest [16] [17] [18].

In this study, the major corrective providers were the students, and the researcher as a teacher still had a big role in teaching learning process. Considering teacher’s workload reduced, the teacher has enough time to evaluate the students’ learning product and take the conclusion of why the students make mistakes. Then, the researcher discussed with the students in the next meeting about their mistakes in order to avoid the mistakes happened again. Analogy without explanation or discussion from or between teacher and students would not bring significant positive effect toward students’ learning. In this study, it was proved that the students did not repeat the same mistakes. It could be seen of the students in experimental group’s score which is increased.

In summary, collaborative writing was the effective method used in teaching writing. This method not only increased the students’ learning score but also gave some advantages for the students themselves in learning writing and also the teacher in teaching learning.

5. Conclusion
From this study it can be concluded that the writing performance of remedial classes (slow learner students) given collaborative writing is better than given individual writing. The second conclusion is that the results of study on subjects learning style Field Independent is better than the subject having Field Dependent learning style, while the third conclusion is that there is no interaction teaching writing variation, learning style and writing performance.
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References
[1] L. T. Muharlisiani et al., “Designing an augmented reality strategy: Elearning/extensive reading,” Int. J. Eng. Technol., 2018.
[2] E. F. Barkley, K. P. Cross, and C. H. Major, Collaborative Learning Techniques: A Handbook for College Faculty. 2005.
[3] D. Nunan, Learner-centered English language education: The selected works of David Nunan. 2012.
[4] S. Messick, “Individuality in learning: Implications of cognitive style and creativity for human development,” San Fr. Jossey-Bass, 1976.
[5] J. Keefe, “Learning style: An overview,” in Student learning styles: Diagnosing and prescribing programs, 1979.
[6] H. A. Witkin, “Group Embedded Figures Test,” PsycTESTS, 1971.
[7] R. R. Schmeck, “An introduction to strategies and styles of learning,” in Learning strategies and learning styles, 1988.
[8] H. A. Witkin, C. A. Moore, D. Goodenough, and P. W. Cox, “Field-Dependent and Field-Independent Cognitive Styles and Their Educational Implications,” Rev. Educ. Res., 1977.
[9] T. Erben, R. Ban, and M. Castañeda, Teaching English language learners through technology. 2008.
[10] C. Kongchan, “How Edmodo and Google Docs Can Change Traditional Classrooms,” in The European Conference on Language Learning, 2013.
[11] D. Adas and A. Bakir, “Writing Difficulties and New Solutions: Blended Learning as an Approach to Improve Writing Abilities PhD in teaching English Language Methods, AL-Quds Open University,” Int. J. Humanit. Soc. Sci., 2013.
[12] W. Wiersma and J. S., “Research Design in Qualitative Research,” in Research Methods in Education: An Introduction, 2005.
[13] M. Saville-Troike, Introducing second language acquisition. 2006.
[14] H. D. Brown, “Teaching by principles: an interactive approach to language pedagogy,” Tesol Q., 2001.
[15] D. R. Krathwohl, “A Revision of Bloom’s Taxonomy: An Overview,” Theory Pract., 2002.
[16] A. dan B. Usman, “Media Pembelajaran,” Meedia Pembelajaran, 2002.
[17] N. Kurniasih, M. M. Muttaqin, I. N. Sari, A. P. Saleky, P. Tuasikal, Y. Talakua, B. M. Laka, A. Niwele and F. Aziz, "Applying ELMS technology based teaching strategy to improve writing competence for EFL remedial students across different motivation level," International Journal of Engineering & Technology, 7 (3.2), pp. 770-773, 2018.
[18] N. Kurniasih, "Reading habit in digital era: Indonesian people do not like reading, is it true?," 26 September 2016. [Online]. Available: https://worldcultureforum-bali.org/reading-habit-in-digital-era-indonesian-people-do-not-like-reading/.