



IMPROVING STUDENTS' WRITING MOTIVATION THROUGH MIND MAP SOFTWARE

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ABSTRACT

The aim of this study was to analyze the effect of using mind map software on writing motivation of pre-service teachers. The research applied a quasi-experimental design, with a pretest-posttest non-equivalent group. The research employed 42 pre-service teachers taking “Scientific Writing”, in the six semester at the Faculty of Education and Teacher Training at Sultan Syarif Kasim State Islamic University, Indonesia, by using cluster-random sampling. This research used a questionnaire and in-depth interview. T-test was used to analyze the data. The study revealed that the experimental group performed higher motivation than control group in writing. Besides, this group also demonstrated their writing is only for their own interest and satisfaction, not for grading. In contrast, this group showed lower motivation when they worked on mechanical aspects of writing. Overall, this study indicated that the use of a mind map software improves students’ writing motivation.

Keywords: Mind map; software; writing; motivation; writing motivation.

Introduction

Although over the past three decades, motivation and writing research has been established, but problems in writing motivation are still undoubtedly exist in pre-service teachers. Many researchers have conducted studies on the impact of mind map strategy on students’ writing (Al-Jarf, 2009; Al-Naqbi, 2008; Riswanto & Putra, 2012;), and motivation (Cain, 2001/2002; Goodnough & Woods, 2002; Jones, et al, 2012; Keles, 2012; and Polson, 2004). Some researches recently attempted to investigate the use of mind map strategy in various fields. Only few researchers found the impact of mind map strategy on students’ writing motivation as incidental findings. Furthermore, the discussion of

the integration between mind map strategy and software in writing is relatively new. In other words, no research has been conducted to investigate the effectiveness of mind map software on students’ writing motivation as their main focus.

Therefore, the aim of this study was to investigate the impact of mind map software in relation to students’ writing motivation. There are three research questions: (1) does the experimental group demonstrate higher writing motivation than control group?; (2) which aspect of motivation was the most dominant in influencing students to write?; and (3) which aspect of motivation was the least dominant in influencing students to write? Consequently, discovering an effective

way is highly needed to facilitate students to write with higher motivation. If the students' writing motivation is higher, it is expected that their writing ability is also improved, as well as their academic achievement.

This study revealed that after treatment was given, the experimental group performed higher motivation than another group in writing. This group also showed that they did the writing task for their own interest and satisfaction, not to be graded. On the other hand, this group indicated lower motivation in mechanical aspects of writing.

Mind map software is beneficial to motivate students to write, particularly in challenging writing tasks. At the beginning, the students actually found writing tasks which had high cognitive demands were not interesting. Students showed resistance on the tasks. However, after treatment was given, students tried to reduce their resistance with assistance of teacher in brainstorming ideas by using mind map. Gradually, students showed their interest when they knew clear path what they had to do in their writing tasks. They wrote and read many times their tasks (self-improvement). They evaluated what they needed to find more to complete their tasks and try to fulfill it (self-regulation). When they received meaningful feedback for their writing, grading is not their main interest. This paper will discuss the concept of writing motivation, the main features of mind map software, research method, findings, discussion, and conclusion

Writing Motivation

Motivation is generally understood as the driving force in various situations that leads to an action. In language learning, motivation

refers to an effort which is a combination of students' attitudes, desires, and willingness to learn the target language: the target language community, the language classroom, and a commitment to learn the language (Richard et al, 2002: 343). "Motivation in writing has two meanings-being moved to write, and trying to move others" (Nancy, 2007: 17). The first meaning refers to the movement of writer to write. The second addresses to the movement of readers by reading the writing. Thus, students' writing motivation means that the combination of students' attitudes, desires, and willingness to write. However, since different researchers have their own opinions on what is motivation, there is no agreement in this field.

Motivation is divided into two categories: intrinsic and extrinsic motivation. Intrinsic motivation addresses to students' own interest toward the task. While extrinsic motivation refers to students' interest toward the task shaped by external factors such as approval, reward, punishment, etc. In language learning, students with intrinsic motivation learn the language for their own interest and satisfaction. In contrast, students with external motivation learn it because of external benefits (Williams & Burder, 1997).

In second language learning (SLA), motivation is divided into two categories: integrative and instrumental (Brown, 2007). The integrative motivation serves as a purpose to integrate language, culture, and community. While the instrumental motivation serves as a tool to achieve the goal which comes from students' assessment related to the values of linguistics achievement such as passing exams, gaining financial rewards, etc (Gardner & Lambert, 1972). In order to

clearly define the differences between intrinsic and extrinsic, integrative and instrumental, table 1 about motivational

dichotomies adopted from Brown (2007: 175) can be seen as follows:

Table 1. Motivational dichotomies

	Intrinsic	Extrinsic
Integrative	L2 learner wishes to integrate with the L2 Culture (e.g., for immigration or marriage).	Someone else wishes L2 learner to know the L2 for integrative reasons (e.g., Japanese parents sent kids to Japanese language).
Instrumental	L2 learner wishes to achieve goals utilizing L2 (e.g., for a career).	External power want L2 learner to learn L2 (e.g., Cooperation send Japanese businessman to US for language training)

Some aspects shape motivation in writing such as behavior, belief, willingness, and attitude. According to Gardner (1985: 50), “motivation involves four aspects: a goal, effortful behavior, a desire to attain the goal and favorable attitudes toward the activity in question”. Motivational beliefs include the goals of the learner, their beliefs in the importance of the task to be performed, the beliefs of the learner in their performance skill with respect to a task, and the emotional reactions towards the task (Pintrich & De Groot, 1990).

Students who cannot fulfill the aspects of motivation are commonly called reluctant writer; students who face difficulties in writing. Anderson (2011) identified the typical characteristics of reluctant writers as: 1) Students with poor spelling and punctuation skills; (2) Students who are easily distracted from reading and writing; (3) Students who work slowly, often not completing works; (4) Students whose work is poorly presented; (5) Students who use displacement activities to delay writing; (6) Students who lack life experience; (7) Students who refuse to share written work in a group; (8) Students who like being read to but have reading

difficulties; (9) Students who like to make things and build; and (10) Students who sometimes use strategies to mask their reluctance.

By considering the types of motivation, the aspects of motivation, and the characteristics of reluctant writers, 15 items are designed to indicate students who have high motivation, as follows:

1. Students do not avoid writing tasks.
2. Students keep writing even the writing is not to be graded.
3. Students turn in work on days when writing is going to be required.
4. Students follow a course that requires writing.
5. Students choose professions where writing is a day to day activity.
6. Students have high self-confidence in their capability to write or learn to write.
7. Students' belief show greater intrinsic in writing tasks.
8. Students set higher achievement goals in writing.
9. Students put more effort when they encounter difficulties and approach difficult tasks as challenge.

10. Students experience less anxiety and stress when taking on difficult tasks.
11. Students use proper grammar in their composition.
12. Students perform mechanical writing skills in their composition.
13. Students show good self-confidence in writing.
14. Students perceive value of writing.
15. Students control and evaluate their own learning and behavior in writing.

Factors Influencing Writing Motivation

Writing is often used by pre-service teachers to record and organize the knowledge such as notes, outlines, summaries, and papers. Writing is not used in across-disciplinary subjects, while reading is used in across-disciplinary subjects. Writing is taught in a specific class. It is also considered by the lecturer's method in teaching and evaluating writing. Consequently, when writing is used as an aid to other subjects, the teacher only evaluates students' organization of knowledge (*what to write*), rather than their writing (*learn to write*). Students' notes, outlines, and summaries are only considered as the forms of the students' task and not to be evaluated.

By seeing the implementation of teaching writing, it limits the students' occasion in writing, finding the interactions among subjects, and the real function of writing as a communicative tool. Therefore, the students cannot find writing as an interesting activity, but only as an academic task. They are never interested to write (Artell, 2005). Then, the students are engaged to write based on the topics rather than foster them to be motivated in writing. As result, students-either beginners or advanced

learners-often face difficulties in writing: insecurity, unwillingness to use the target language, lack of knowledge, and languages transfer (internal factors), time allocation and the teachers' methodology (external factors) (Chamot, 2005; Duan Yuan-Bing, 2011: 235-236, Rico (2013: 65). They consider writing as a difficult task (Artell, 2005). Consequently, the students' motivation decrease progressively related to find interesting topic and written production. The students consider it as a routine and rigid schedule task and almost as an assessment tool (Boscolo and Hidi, 2007: 2). Therefore, all factors involved in learning the language presupposed motivation to some extent. Thus, without sufficient motivation, even individuals with remarkable abilities cannot accomplish long-term goals. Neither are appropriate curricula nor good teaching enough to ensure students' academic achievements (Dornyei, 1998).

Therefore, teachers should make the move from being behavior controllers and knowledge dictators to more capable persons who invite students to participate in and construct their learning (Wells, 2000). In teaching writing, teacher need to familirize the writing process to the students, design challenging tasks that provides students opportunities to communicate and establish their self-direction (Ellis, 1994: 516). Participating and constructing will not happen unless one is intrinsically motivated to do so and this required studies and apply strategies that would elicit and sustain students' intrinsic motivation.

Mind Map Software

Mind map strategy: Concept and benefits

Mind map is a strategy which uses a mind map that is made based on radiant thinking; a concept which describes how human brain processes various ideas and information associated to each other through relationship hooks (Al-Jarf, 2011; Buzan and Buzan, 2003; Buzzle, 2012; Fiktorious, 2013; Murley, 2007; Siriphanic and Laohawiriyono, 2010). It consists of a central idea or theme and related ideas branching out connected together via relationship hooks. Subsequent ideas are linked together, forming a hierarchical map of the user's ideas. It is a strategy for language teaching that helps the teachers or the lecturers introducing or bringing together multiple words linked to one subject or theme.

Mind map has five essential characteristics (Buzan and Buzan, 1994: 59), as follows: (a) The subject of attention is crystallized in a central image; (b) The main themes of the subject radiate from the central image as branches; (c) Branches comprise a key image or key word printed on an associated line; (d) Topics of lesser importance are also represented as branches attached to higher level branches; and (e) The branches from a connected nodal structure.

Mind map strategy promoted how to activate and explore more the functions of brain for organizing the learning, particularly in writing. The table 2 figures out the functions of brain (Tony and Barry Buzan, 2007: 32-34).

Table 2. The functions of brain

Right Hemisphere	Left Hemisphere
Rhythm	Words
Spatial Awareness	Logic
Gestalt (Whole Picture)	Numbers
Imagination	Sequence
Daydreaming	Linearity
Colour	Analyses
Dimension	Lists

Based on the concept of mind map strategy in which it links ideas into radiant thinking, it can be seen in table 2, mind map strategy uses right hemisphere to activate all components of left hemisphere. In other words, the mind map strategy could cover what students need to develop in writing motivation though visualization by emphasizing the use of word, color, symbol, and images (Buzan, 2000; Goldberg, 2004; Harris and Caviglioli, 2004; Buzan, 2005; Jaksch 2011; Borkar, 2011). In addition, mind map strategy promotes the patterning ideas in visual-spatial-verbal form (Yyerle and Yeager, 2007: vi). Mind map strategy ensures the use of both lobes of the brain and their joint functioning, as it includes both analytical inference and special tasks (Brinkmann, 2003).

Mind map has benefits in various fields. Mind map can be used to develop students' writing (Al-Jarf, 2009; Al-Naqbi, 2008; Riswanto & Putra, 2012), motivation (Cain, 2001/2002; Goodnough & Woods, 2002; Jones et al, 2012; Keles, 2012; and Polson, 2004), long term memory, cognitive structures, and recalling words (Entrekin, 1992; Farrand, Hussain, and

Hennessey, 2002; Harkirat, et al, 2010, Toi, 2009), creativity (Al-Jarf, 2009; Zampetakis et al, 2007), Interesting and engaging (Goodnough and Woods, 2002), preparation, organization, and understanding (Abi-El-Mona & Adb-El-Khalick, 2008), D'Antoni and Zipp, 2005; Holland et al, 2003/2004; Mueller et al, 2002; Wong-Ang Gek Moi & Ong Lee Lian, 2007), presentation (Mento et al, 1999; Ralston and Cook, 2007), problem-solving (Paykoc et al, 2004).

Mind map software: Concept and procedure

The idea of developing visual information through using flowchart, pie chart, and other visual format since 1970s. Then, 30 years ago, the concept of formal ways of mapping had been introduced like mind map, concept map, argument map, etc. More recently, the computer technology or mind map software has enabled students to achieve more and far greater ease. A plethora of software tools has been developed to meet various information mapping needs such as FreeMind, X mind, Edraw Mind Map, Mind Meister, Spider Scribe, Edistorm, Wridea, Bubble.us, Wise Mapping, Text 2 Mind Map, Lucid Chart, Spycynodes, Mind 42, Popplet, Chartle, Gliffy, etc. Those mind map softwares are designed for different detailed purposes, although generally all those programs are designed to associate ideas and analyzing the interrelatedness of those ideas.

The procedure of using mind map software in teaching writing was adopted from Borkar (2011) and Harkirat et.al (2011:190), as follows:

1. Teacher introduces a mind mapping software and all components in its toolbar.
2. Teacher takes an example of text and makes a note of the central theme in the center of the page. For example- the principles of teaching writing.
3. Teacher starts drawing branches (each with a different color) of the principles of teaching writing on all sides of the central idea.
4. Teacher, together with students, under each points of the central idea, draws arrows to map out the basic pointers that make up this concept.
5. Teacher divides students into 6 groups in which each group consists of 5 students.
6. Teacher asks students to write a mind map about the text as what teacher has already explained for approximately 20 minutes.
7. Teacher asks students to write a summary based on the mind map created for approximately 30 minutes.
8. Teacher asks students to submit their summary.
9. Teacher together with the students discusses about couple of students' writing-goodness and weakness.

Method

The design of this research was quasi-experimental research which involved two groups based on classroom intact. The type used was pretest-posttest non-equivalent group design. In education, many experimental situations occur in which researchers need to use intact groups. This might happen because of the availability of the participants or because the setting prohibits forming artificial groups (Cresswell, 2008: 313). Randomly assigning students to the two groups would disrupt the classroom learning. For that reason, quasi-experimental research was used in this design as illustrated in the following

table (Cohen, Manion, and Marrison, 2007: 283).

Table 3. Pre- and Posttest Non Equivalent Group Design

Experimental Group	O1 X	O2
Control Group	O3-	O4

Notes:

O1 : Pretest at Experimental Group

X : Treatment

O2 : Posttest at Experimental Group

O3 : Pretest at Control Group

O4 : Posttest at Control Group

Based on the table above, first, both groups were administered by pretest. Second, an experimental group was treated by mind map software meanwhile a control group did not get any treatment. Third, both groups were administered by posttest.

The population of this research was the fifth semester students of Department of English Education of Sultan Syarif Kasim State Islamic University, Indonesia which consisted of 6 classes (academic year 2014/2015). The total population of this research was 194 students. The sampling technique used was a cluster random sampling technique. Forty two students were taken as samples of this research. Those samples taken because they have completely learned writing I, writing II, and writing III, and Scientific Writing.

The data was collected by using questionnaire. It was used before and after the treatment. There were 15 indicators of students' writing

motivation developed into 30 statements. It used Likert scale which consisted of 5 choices: Strongly Disagree (1), Disagree (2), Neither Agree nor Disagree (3), Agree (4), and Strongly Agree (5). The questionnaire were set into two constructs; intrinsic and extrinsic motivation. In order to identify the category of students' writing motivation, the following category was used (Suharsimi, 2007:251):

Table 4. Writing Motivation Category

No	Percentage	Category
1	$80 \leq p \leq 100$	Very Good
2	$65 \leq p \leq 79,99$	Good
3	$55 \leq p \leq 64,99$	Enough
4	$40 \leq p \leq 54,99$	Poor
5	$0 \leq p \leq 39,99$	Very Poor

To obtain the percentage listed in the table 4, the formula used to analyze it as follows:

$$\text{Percentage} = \frac{\text{The Score of all items}}{\text{The maximum score of all items}} \times 100\%$$

The obtained data was analyzed by using t test (paired and independent sample t test) through using IBM Statistics version 20.

Findings

The first hypothesis

H0 : There is no significant difference between students' writing motivation before treatment between control and experimental groups at the English Education Department of State Islamic University of Sultan Syarif Kasim Ria

Table 5. The Result of Independent Sample T Test Before Treatment of Writing Motivation

Group	N	Mean	Std.		F	Sig.	t	df	Sig. 2-tailed)
			Deviation	Error Mean					
Control Group	21	100,86	5,64	1,23	0,08	0,78	0,23	40	0,82
Experimental Group	21	100,43	6,24	1,36					

Based on table 5, it could be seen that the sig. (2-tailed) was 0,82. It was higher than 0,05 ($0,82 > 0,05$). Therefore, H_0 was accepted. It meant that there is no significant difference of students' writing motivation before treatment between the control and experimental groups at the English Education Department of State Islamic University of Sultan Syarif Kasim Riau. Thus, the first hypothesis was **accepted**.

The second hypothesis

H_a : There is significant difference between students' writing motivation after treatment between the control and experimental groups at the English Education Department of State Islamic University of Sultan Syarif Kasim Riau.

Table 6. The Result of Independent Sample T Test after Treatment of Writing Motivation

Group	N	Mean	Std.		F	Sig.	t	df	Sig. (2-tailed)
			Deviation	Error Mean					
Control Group	21	121,38	4,04	0,88	1,16	0,29	-2,08	40	0,04
Experimental Group	21	124,43	5,35	1,17					

Based on table 6, the sig. (2-tailed) was 0,04. It was lower than 0,05 ($0,04 < 0,05$). Therefore, H_0 is rejected. It can be seen that there is significant difference of students' writing motivation after treatment between the control and experimental groups at the English Education Department of State Islamic University of Sultan Syarif Kasim Riau. It means that the second hypothesis is **accepted**. Thus, experimental group performed higher

motivation than control group in writing.

The third hypothesis

H_a : There is significant difference of students' writing motivation between before and after treatment in the control group at the English Education Department of State Islamic University of Sultan Syarif Kasim Riau.

Table 7. The Result of Paired Sample T Test of Students' Writing Motivation in the Control Group

Test	Mean	N	Std.		Mean Difference	T	df	Sig. (2-tailed)
			Deviation	Error Mean				
Pretest	100,86	21	5,64	1,23	20,52	27,78	20	0,00
Posttest	121,38	21	4,043	0,88				

Based on table 7, the sig. (2-tailed) was 0,0. It was smaller than 0,05 (0,0<0,05). Therefore, H₀ is rejected. It meant that there is significant difference of students' writing motivation before and after treatment in the control group at the English Education Department of State Islamic University of Sultan Syarif Kasim Riau. Thus, the third

hypothesis was **accepted**. In addition, the gain was 20,52.

The fourth hypothesis

H_a : There is significant difference of students' writing motivation between before and after treatment in the experimental group at the English Education Department of State Islamic University of Sultan Syarif Kasim Riau

Table 8. The Result of Paired Sample T Test for Students' Writing Motivation in the Experimental Group

Test	Mean	N	Std.		Mean Difference	T	df	Sig. (2-tailed)
			Deviation	Error Mean				
Pretest	100,43	21	6,24	1,36	-23,62	-	20	0,00
Posttest	124,05	21	5,52	1,20		29,964		

Based on the table 8, the sig. (2-tailed) was 0,00. It was smaller than 0,05 (0,00<0,05). Therefore, H₀ was rejected. It meant that there was significant difference of students' writing motivation before and after treatment in the experimental group at the English Education Department of State Islamic University of Sultan

Syarif Kasim Riau. Thus, the fourth hypothesis was **accepted**. In addition, the gain was 23,62

The fifth hypothesis

H_a : The intrinsic motivation is higher than extrinsic motivation in writing through using mind map software.

Table 9. The Result of Intrinsic and Extrinsic Motivation in Control and Experimental Group

Group	Pretest		Posttest	
	Intrinsic	Extrinsic	Intrinsic	Extrinsi
Control	72,06	68,93	85	84
Experimenta 1	69,5	71,29	86,44	91,43

Based on table 9, at control group, intrinsic motivation was higher than extrinsic motivation both pre and posttest. In contrast, experimental group showed that extrinsic motivation was higher than extrinsic motivation.

consequently, the fifth hypothesis was **rejected**.

The sixth hypothesis

Ha : The gain of writing motivation at experimental group is higher than control group.

Table 10. The Gain of Students' Writing Motivation for Both Groups

Group	intrinsic		Gain	Extrinsic		Gain
	Pre	Post		Pre	Post	
Control	72,06	85	12,94	68,93	84	15,07
Experimental	69,5	86,44	16,94	71,29	91,43	20,14

Based on table 10, gain of writing motivation at experimental group was higher than control group either in pretest or posttest. It means that the sixth hypothesis was **accepted**.

The most dominant aspect of motivation in writing

After analyzing all items of questionnaire given for control and experimental group both pretest and posttest. The most dominant aspect of motivation influencing students to write can be seen the table 11.

Table 11. The Most Dominant Aspect of Motivation Influencing Students to Write

Group	Pretest		Posttest	
	Item	Score	Item	Score
Control	Q14	89	Q7	100
Experimental	Q14	86	Q18	128

Based on table 11, Q14 was the most dominant item selected by the students either at control or experimental group. Q14 "By knowing the purpose of what I write, I can easily

focus on my writing" belongs to indicator 13 "Students show good self-confidence in writing". It means that before treatment both groups have high self-confidence on their writing. In

addition, after treatment, at the control group, the most dominant aspect was Q7 (100) "I Plan what I am going to write to get my writing as what I expected" which belongs to indicator 15 "Students control and evaluate their own learning and behaviour in writing". It means that after treatment, students at the control group have successfully developed their self-concept in writing. Furthermore, Q14 at the control group, after treatment improved to be 99. However, Q14 was not the most dominant aspect of motivation after treatment in control group. Overall, the intrinsic motivation play important role for students' motivation at the control group both pretest and posttest.

Meanwhile, in the experimental group, after treatment, Q18 (128) was the most dominant item selected by the students. Q18 "I like my writing to be graded so that my efforts to write is not useless" belongs to indicator 2 "Students keep writing even the writing

is not to be graded". It means that students at the experimental group showed higher extrinsic motivation in writing. Furthermore, Q14 after treatment improved to be 100. However, Q14 was not the most dominant aspect influence students to write. Overall, using mind map software improve students both intrinsic and extrinsic motivation, particularly the extrinsic motivation. Using mind map gives students appreciation on their writing either the content of the writing or the creativity of the students in displaying their essays into mind map.

The least dominant aspect of motivation in writing

After analyzing all items of questionnaire given for control and experimental group both pretest and posttest. The least dominant aspect of motivation influencing students to write can be seen the table 12.

Table 12. The Least Dominant Aspect of Motivation Influencing Students to Write

Group	Pretest		Posttest	
	Item	Score	Item	Score
Control	Q21	53	Q6	66
Experimental	Q21	50	Q6	68

Based on table 12, both control and experimental group showed that Q21 was the least dominant aspect of motivation influencing students to write. Q21 "Getting an A on my writing assignment is very important for me to show my ability to other students" belongs to indicator 8 "Students set higher achievement goals in writing". It means that students have intrinsic motivation in setting the higher achievement goals in writing rather than shaping other students' opinion about

their achievement. In addition, both control and experimental group showed Q6 was the least dominant item selected by the students after treatment. Q6 "To easier me understanding the whole ideas of my writing, I concern on the use of punctuation in my writing" belongs to indicator 12 "Students perform mechanical writing skills in their composition. It means that students at both groups have perception that punctuation does not play

important factors to produce good writing.

Discussion

This research formulated 3 research questions: First, does the experimental group demonstrate higher writing motivation than control group? To answer this research question, 6 hypotheses were formulated. By analyzing these hypotheses, it could be understood that the treatments implemented either in the control or in the experimental group had successfully improved the students' writing motivation. However, students at the experimental group showed higher motivation than control group in writing. Surprisingly, students at control group performed higher intrinsic motivation than experimental group, vice versa.

Based on the condition during pretest, treatment, and posttest in both groups and supported by observation, and interview to the writing lecturer and students, there might be two main factors why the students' writing motivation in both group had been successfully improved. The first factor might be internal factors of the students. Some of the students in the control group were actively joining the students' association, and campus activities. It might influence their prior knowledge (experiences) and their ability to communicate their ideas, particularly their writing ability. By showing them how to write by using mind map software, they were easily connecting their experiences to their writing. Furthermore, Rico (2013:58) states, there are several internal aspects that the student brings to his/her particular learning situation". These factors are composed by age,

personality, motivation, experiences, cognition and native language.

The second factor might be the students' learning situation. According to Rico (2013: 58), there are several external factors might influence the students' learning situation. These factors are composed by curriculum, culture, status and motivation, etc. One of the external factors might be the curriculum related to the schedule arrangement. The uncertain schedule was also related to learning environment. It had to be recognized that during learning, the control group had regular class with the regular schedule, whereas the experimental group had some changing in the schedule because the other lectures changed the schedule. In the day of the meeting, they looked so relax entering the classroom because they had no schedule with other lecturers at the previous lesson, while in another day of the meeting, they looked so bored, tired, and lackluster because they had more schedules with other lecturers. Therefore, the expectation of the gain achieved by the control and experimental groups was rather unpredictable. Similarly, Ripple (1965: 476) instantiated that an individual operating under high motivation might overcome the effects of an inadequate environment, or that negative personality factors might be balanced by a good environment. Thus, eventhough the control group has a good environment for the learning, by using the conventional teaching strategy, the students' writing motivation could not improve maximally, whereas the the experimental group using the mind map software, but worked in the an inadequate environment, the students' writing motivation could not also improve maximally. Therefore, the

students' writing motivation had been improved in both groups.

Second, which aspect of motivation was the most dominant in influencing students to write? This research showed that at the control group, self-concept and self-confidence play important factors influencing students' writing motivation. However, self-concept and self-appreciation were the dominant factors influencing students to write at the experimental group. Self-concept refers to the concept of individual about one's physical, social, spiritual, or moral being (Rosenberg, 1979:1). Both groups have self-concept in writing, in which they know the importance and the benefits of their writing.

Third, which aspect of motivation was the least dominant in influencing students to write? This research showed that students less concerned on the use of punctuation in their writing. Students did not consider that mechanical writing skills are important part to ease them understanding the whole ideas of their writing (self-perception). Eccles (2005) and Wigfield (1994) formulated that expectation and values are shaped by students' beliefs: (a) ability beliefs which is related to students' perception about their own ability to complete a task, (b) perceived difficulty of the task, (c) students' goals to study, (d) sense of self, and (e) affective memories related to similar tasks. Those factors are also influenced by the previous experiences and social interaction (Eccles, 2005; Wigfield & Eccles, 2000, 2002; Wigfield, Eccles, & Rodriguez, 1998; Wigfield, Tonks, & Eccles, 2004). Students' perception can be enhanced by the teacher through giving continual feedback about the sense of the mastery (Schunk, 1990, 1995).

Conclusion

To improve the students' writing motivation, the lecturers have to be able to use teaching strategies which are effective, efficient, and relevant with the needs of the students in order to achieve the target determined by the curriculum. Mind map software is one of the teaching strategies considered to be effective, efficient, and relevant with the students' needs. This strategy aims to assist the students record, strengthen, recall the information being learned, to gather ideas, to summarize the ideas or information obtained, to write essay easily and quickly, and encourage students' writing motivation.

Based on the analysis, several points could be drawn as follows: (1) There is no significant difference between students' writing motivation before treatment between control and experimental groups at the English Education Department of UIN Suska Riau. (2) There is significant difference between students' writing motivation after treatment between control and experimental groups at the English Education Department of UIN Suska Riau. (3) There is significant difference of students' writing motivation between before and after treatment in the control group at the English Education Department of UIN Suska Riau. (4) There is significant difference of students' writing motivation between before and after treatment in the experimental group at the English Education Department of UIN Suska Riau.

Based on the aforementioned points, it can conclude (1) the experimental group performed higher writing motivation than control group; (2) this group showed higher writing motivation eventhough their writing is not to be graded; (3) in contrast, this

group also demonstrated that students showed lower writing motivation when they work on mechanics of writing. Thus, overall, the use of mind map software can improve students' writing motivation at the English Education Department of UIN Suska Riau.

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