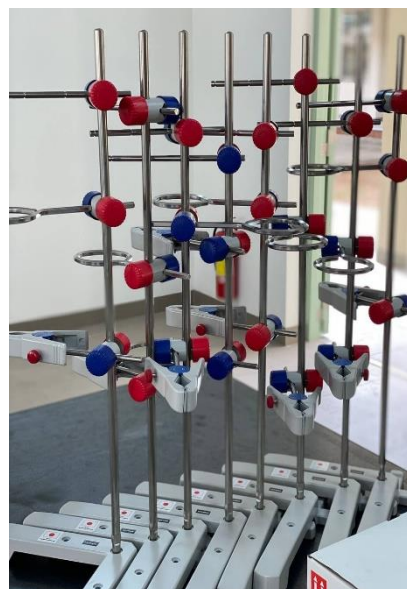# វិទ្យាស្ថានគរុកោសល្យបាត់ដំបង
BATTAMBANG TEACHER EDUCATION COLLEGE

ACTION RESEARCH
SERIES

VOLUME1 March 2021

BTEC Publication

Acknowledgment

Aim and Scope

Bulletin of **Battambang Teacher Education College** is a peer-reviewed, open access, multidisciplinary journal, designed for the wide dissemination of practical research in different subjects such as scientific, languages, Education study, ICT and social science fields for nationwide audience. The journal is dedicated to advances in science and social science and the practice of different fields, through the rapid publication of action research in BTEC. The journal welcomes systematic review, meta-analysis and technological report, as well as perspectives on all disciplines of all specialty of Science, Languages, Education Study, ICT and Social science.

As a multidisciplinary journal, the journal's scope encompasses a wide range of scientific and social scientific fields. Bulletin of Battambang Teacher Education College welcomes original research, action research, reviews, case reports and letters to the editors. The standards for acceptance include scientific quality, originality, clarity and conciseness.

The mission of the bulletin is to provide readers with a broad spectrum of themes in all branches of specialized subjects such as Mathematics, Science, ICT, Languages, Education studies, Social science so on. All manuscripts will undergo a rigorous view process and must comply with journal's editorial policies and research ethics.

Table of Contents

The Effective of Student Teachers' Critical Thinking: Action Research in a Chemistry Laboratory of BTEC

Pheng Saray[a] , Meas Satom [a,*]
[a] Department of Science, Battambang Teacher Education College (BTEC), Battambang, Cambodia
[b] Japan International Cooperation Agency (JICA)

Abstract

In this present study aims to check the critical thinking skills of student teachers 12+4 of BTEC based on their ability through pre-survey and post-survey and to describe the attitude of critical thinking skills through their argumentation on chemistry laboratory work. The method of quantitative analysis techniques, especially factors analysis based on questionnaire data. The research sample consisted of 24 student teachers of Batambang Teacher Education College who took chemistry major. The results shown that the student teachers' critical thinking was still weak. Through worksheets analyzed the three categories of student teachers were obtained. 52% of the student teachers of the first category can providing claim, evidence, and the justification approximately while there is 8.3% of the third category failing on providing claim, evidence, and the justification. In conclusion, the present results are not sufficient, and more study in order to promotes the critical thinking for the student teachers should be conducted continuously.

Keywords: Critical thinking, Exploratory and Rational thinking, Multifaceted thinking, Reflective thinking, Sketical thinking, Argumentation, laboratory work

I. Introduction

Chemistry is one of important subjects among science that plays a crucial role in developing scientific theories to describe, explain, and predict the physical world and to produce useful products for improving quality of life throughout history. To provoke student awareness of the value and essential of learning chemistry and becoming chemistry literate, we propose an application of systems thinking for the practice of chemistry education (Chiu

1

et al., 2019). The success of chemistry depends on good experimental practice, techniques, and the quality of their results. Based on the experience of teaching in BTEC of 12+2 and 12+4 student teachers, the traditional education of learning is focused on mastery of content, with less emphasis on the development of skills especially working in the laboratory. And one of the negative feeling of the students is laboratory anxiety. Since, students do not enjoy laboratory work and that laboratory experiences resulted in negative and the awareness of student attitudes and interest in science are very weak. This was also the reason why most students who graduated from high school do not know the purpose of using laboratory materials, laboratory work and even how experiment conducting. Moreover, students do not have much confident to make use of the lab results also to put them in practice. These circumstances are the reasons caused of conducting this research in order to reach the goal of 21st Century competency such as critical thinking skills.

Previous study found that the laboratory has been given a central and distinctive role in science education, and science educators have suggested that rich benefits in learning accrue from using laboratory activities (Hofstein & Lunetta, 2004). The underlying goals of the systems thinking learning strategy proposed in this action research are (1) to check the critical thinking skills of student teachers based on their ability through pre-survey and post-survey and (2) to describe the attitude of critical thinking skills through their argumentation on chemistry laboratory work.

Research Questions:

(1) Do those critical thinking skills or strategies being used to increase the probability of a desirable outcome?
(2) Do student teachers develop their attitude of critical thinking skills through their argumentation?

Hypothesis:

(1) The development of critical thinking skills can improve the quality of laboratory work
(2) Student teachers develop their attitude of critical thinking skills effectively through argumentation

II. Literature Reiview

Laboratory is effective instructional method for promoting interest in chemistry studies (Ben-Zvi et al., 1976) , motivating students to learn science (Freedman, 1997);(Thompson & Soyibo, 2002) developing students' scientific research skills (Cana, 2013), and promoting conceptual understanding (Coştu et al., 2010). Laboratory activities have the potential to improve constructive social relationship as well as positive attitudes and cognitive growth (Hofstein & Lunetta, 1982) and (Lazarowitz et al., 1994). Moreover, laboratory work activity is known to be the process of learining that provide stimualtion, interest, attention to the students via experience of relationship betwwen theory and the real world of our every life (Anwar et al., 2017). The student's argument can be well developed through the laboratory work and this work be able to train high-level thinking skills, especially critical thinking skills (Amanaka et al., 2018) . Teaching advanced laboratories at the undergraduate level also needed to apply critical thinking skills to solve problems (G. Quattrucci, 2018).Furthermore, current research found that attitudes of reflective thinking, which form a part of the attitude of critical thinking in science can improve students' inquiring minds. Critical thinking is a concept that started to be explored in a primary school in the united stated since 1930s and they even conducted a data assessment task for students to tackle with theoretical training improved their critical thinking skills (Amanaka et al., 2018).

The importance of critical thinking has been known since the earliest documentation of this concept around 2.500 years ago in the teachings of Socrates. Critical thinking required the use of those cognitive skills or strategies that increase the possibility of a desirable result (Bećirović et al., 2019). Critical thinking can engage emotions and even passionate responses together, and aid emotional awareness so that people can communicate clearly in an appropriate (Anwar et al., 2017). Brookfield is one of a researcher that revealed that critical thinking illustrates the process with the conditions of the student become aware of the two sets of assumption (1st) students investigate the assumption held by an expert in a field of study and (2nd) students investigate their own assumption in the frame of mind and actions of their own. Moreover, thinking critically engaged a person in taking action based on the evidence to achieve the expected results, and it can also train a person to choose a good argument to accept reason and perform certain actions (Anwar et al., 2017).

One of the key elements of the critical thinkers is the ability on the exploratory and rational thinking. Many scholars have indicated that students should attain critical thinking abilities and rational thinking to aid them in making objective judgments and decisions when confronting l technological problem (Kek & Huijser, 2011)&(McLaren, 1997). Especially, a good critical thinker should be more capable of reflecting on the effects of technology development and be able to develop or select the appropriate solutions. Furthermore, the effective critical thinking contains of the capabilities to engage in rational consideration, data analysis, evolution of thought, inductive reasoning, and verification (Yu et al., 2015). Thus, students can also explore and apply their conceptual knowledge, consisting of theoretical and system knowledge, to think critically when confronted with laboratory work.

Another important role of critical thinking is a multifaceted concept. Currently research found that students' critical thinking skills need to be developed from one year to the next as tutors are required to design courses that adhere to QAA (2014) level descriptors, which set out the results for students studying in years one, two and three. Skills relating to critical thinking become increasingly higher order as, among other abilities, students are expected to evaluate and interpret data in year one, critically analyze in year two and accurately deploy established techniques of analysis in year three.(https://jpaap.napier. ac.uk/index.php /JPAAP/article/view/209/html)

It is found that learning by talking such as communication and interviewing helped student to engage in interaction with other. By using focal and preoccupation analysis of the two students (Ari and Gur) in mathematic understanding shown that there was very little coherence in Ari and Gur's conversation. It is truly that Ari was rather successful in his private efforts to solve the problem. Using traditional cognitivist language, the results said that Gur, unlike Ari, displayed little mathematical understanding (Neuman, 2009). However, the preoccupation analysis suggests to consider more on local, situation-specific interpretation (Geisler-Brenstein & Schmeck, 1996). One of the kills needed in the 21st century for the students was the interpersonal skills such as communication, collaboration, leadership and responsibility (Suardana et al., 2018).

Teacher trainer who support the concept of reflective thinking use a lot of strategies that provide idea and modeling coupled with experiences to develop metacognitive skills. These skills and experiences may also improve reflective thinking (Visscher-voerman & Procee, 2006) and (Hong & Choi, 2019). Engaging novice designers in reflective practice is believe to be an important means of improvement their competency in solving design problems critically. Furthermore, empirical studies have observed the importance of reflective activities in designer's design processes. Previous research found that among novices, more reflection is found in the learners who are more experienced (Adams et al., 2003) and perform better (Studies & Competition, 1998). Numerous of researchers in various design fields, such as architectural design (Schö̈n 1983, 1987), engineering design (Adams et al. 2003; Lloyd and Scott 1994; Valkenburg and Dorst 1998), and instructional design (Greeno et al. 1990), revealed the evidence of reflective thinking behaviors in design processes and found that an architectural design student's reflective thinking occurred when he experienced unexpected outcomes (Hong & Choi, 2011).

Skeptical thinking is very important, and it involves the assumption of a doubtful attitudes. It is needed to teach student to think skeptically about psychology related claims because if one does not question a claim, then one probably will not think critically about it. Typically, web-based critical-thinking lessons is an effective way to improve critical-thinking skills and general skepticism in lower-division, content- heavy courses (Ricker, 2016).

III.   Research Methodology

Twenty four of year two chemistry students from 12+4 in Battambang Teacher Education Collage which located in Romchak IV village, Rattank commune, Battambang city , and Battambong province were selected as our sample. The two sessions of research were conducted since the beggining of the semester one (1st November, 2019) for pre-survey, and at the end of the semester one (27th February, 2020) for post-survey.Questionnaire sureveys of post-survey were conducted after the teaching of chmeistry experiements and I measured students' attitudes of critical thinikng in loboratory work.

- *Survey instrument*

The 23 item survey was devided into four factors of question such as Exploratory and rational thinking, Multifaceted thinking, Reflective thinking, Skeptical thinking (see appendix). The survey questionares obtianed of the five Likert scale item (1: Not applicable, 2: Not really applicable, 3 Neither, 4: Somewhat applicable, 5: Applicable) were used as our pre-survey. Survey questions using in this action research was modified from Mr Shingo YAMANAKA (2017). Typically, students' worksheet and teacher educator's observation sheet were used after pre-survey. During pre-survey and post-survey, researcher were oberseavted by the assistant who will provide comments, and feedback according researcher's lesson plan using observation sheet (shown in appendix). The pre-survey of this research was conducted in order to test the student's prior knowledge on crititcal thinking. The post-survey were tested student teachers' critical thinking after finishing experiment and task-sheets were used as a tool.

- *Data collection*

The data collection of this research was administered with the help of the research assistant. To collect the data, survey questionnaires of pre-survey and post-survey, student teachers' worksheet and classroom observation were giving marked. The scores obtained by the student teachers on the pre-survey were recorded and kept for use. At the end of the laboratory work of each session, post-survey was administered to the student teachers. The scores obtained in the post-survey were also recorded. Both pre-survey and post-survey and worksheet scores were analyzed and used to answer the research questions and test the hypothesis that guide this study.

- *Data analysis*

The data from the surveys were analyzed using content analysis and descriptive statistics and SPSS® (Version 23; IBM: Armonk, YN, USA). Additionally, descriptive statistics, paired samples test were calculated for survey questions one through five from the Likert scale. Means were specifically calculated and used in this study. In all analyzes, p-value less than 0.001, 0.01 and 0.05 were considered statistically significant difference. And the

percentage of student teachers' worksheet scores were calculated in order to analyze the writing on each worksheet and to see the different of each category of student teachers' answers.

IV.   Results

Student teachers perception were examined using questionnarire with four factors of critical thinking skill on thier laborator work in order to promote student teachers in thinking critically. The most common mistake found in this laboratory secssion happens during interpreting on what they have faced in their experiments. Otherwise, it is related to the research questions bellow:

(1) Do those critical thinking skills or strategies being used to increase the probability of a desirable outcome?

Typically, the indicator of thinking critically consist of clarity, accuracy, precision, consistency, relevance, evidence, reason, depth, breadth and fairness (Anwar et al., 2017) which is calculated through the mean average component of the following results. To respons to the research question whether critical thinking skills being used to increase the probability of a desirable outcome or not, the result are shown in the following table respectively:

4.1   Descriptive statistics for the whole sample across the pre-survey and immediate post-survey (n=24)
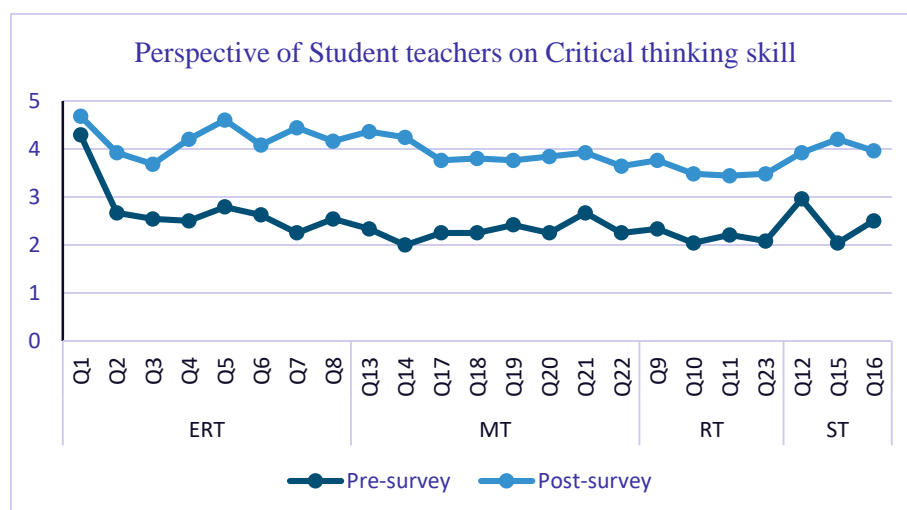

Figure1: Perspective of Student teachers on Critical thinking skill

Figure 1 revealed that the descriptive statistics of critical thinking on laboratory work successfully learning outcome. A number of 24 student teachers were selected as target samples, and they were asked to express their opinions about their critical thinking before and after conducting the lessons with experiment in chemistry subject. The results of the surveys of the groups are descriptively presented a positive change from the lower to higher level of practical on exploratory and rational thinking, multifaceted thinking, reflective thinking, and skeptical thinking between pre-survey and post-survey as shown in Table 1, Table 2, Table 3 and Table 4.

4.2. Paired-Samples Test

Table 1: Differences of Pre-survey and Post-survey by Exploratory and rational thinking (N=24)

Items	N	Pre-survey		Post-survey		t	P (value)
		M	SD	M	SD		
Pair Q1	24	4.29	.46	4.70	.46	-2.84	.009
Pair Q2	24	2.66	1.00	3.91	.58	-5.00	.000
Pair Q3	24	2.54	1.10	3.66	1.16	-3.57	.002
Pair Q4	24	2.50	1.14	4.20	.41	-6.43	.000
Pair Q5	24	2.79	1.06	4.62	.49	-7.24	.000
Pair Q6	24	2.62	1.01	4.62	.49	-8.57	.000
Pair Q7	24	2.25	.53	4.45	.50	-18.39	.000
Pair Q8	24	2.54	.88	4.16	.63	-6.60	.000

Note: * P$\leq$0.01
** P$\leq$0.001

As displayed in table1, pairs of Q1 and Q2 on exploratory and rational thinking is statistically significant difference at the 0.001 level. The other pairs are significant difference at the 0.01 level.

Table 2: Differences of Pre-survey and Post-survey by Multifaceted thinking (N=24)

Items	N	Pre-survey		Post-survey		t	P (value)
		M	SD	M	SD		
Pair Q13	24	2.33	1.27	4.37	.49	-7.89	.000
Pair Q14	24	2.00	1.14	4.25	.44	-8.52	.000
Pair Q17	24	2.25	.73	3.75	.67	-7.88	.000
Pair Q18	24	2.25	.73	3.79	.72	-7.73	.000
Pair Q19	24	2.41	.88	3.75	.67	-5.59	.000

Pair Q20	24	2.25	.84	3.83	.91	-5.61	.000
Pair Q21	24	2.66	1.00	3.91	.88	-4.21	.000
Pair Q22	24	2.25	.67	3.62	3.62	-5.00	.000

Note: * P≤0.001

As displayed in table 2, all pairs of items on Multifaceted thinking statistically significant difference at the 0.001 level.

Table 3: Differences of Pre-survey and Post-survey by Reflective thinking (N=24)

Items	N	Pre-survey		Post-survey		t	P
		M	**SD**	**M**	**SD**		**(value)**
Pair Q9	24	2.33	.76	3.75	.67	-6.30	.000
Pair Q10	24	2.04	.46	3.54	.93	-7.19	.000
Pair Q11	24	2.20	1.02	3.41	1.05	-3.44	.002
Pair Q23	24	2.08	.40	3.54	.93	-6.26	.000

Note: * P≤0.01
  **** P≤0.001**

Table3 exposed that the pair of Q9, Q10 and Q23 on the skeptical thinking that there is statistically significant difference at the 0.001 level. Another pair is significant difference the level of 0.01.

Table 4: Differences of Pre-survey and Post-survey by Skeptical thinking (N=24)

Items	N	Pre-survey		Post-survey		t	P (value)
		M	SD	M	SD		
Pair Q12	24	2.95	1.36	3.91	.88	-2.71	.012
Pair Q15	24	2.04	.99	4.20	.65	-8.33	.000
Pair Q16	24	2.50	1.14	3.95	.55	-5.42	.000

Note: * P≤0.05
  ** P≤0.001

Table4 revealed that the pairs of Q15, and Q16 on the skeptical thinking that there is statistically significant difference at the 0.001 level. Another is significant difference at the 0.05 level.

Interpersonal, communication, group discussion, team work is counted to be indicators for student teachers to implement their attitude of thinking critically. Normally, the common

problem found in student teacher's laboratory work were not to have enough information and this weakness lead to create an argumentation during discussion. While doing the discussion, student teachers are not able to correlated the results, written theories and concept that have taught in the class correctly. Regarding to these problems, the second research question come up with:

(2) Do student teachers develop their attitude of critical thinking skills through their argumentation?

4.2   Analysis of the Notes Written on the Worksheet

To examine whether student teachers can conduct argumentation activities or not, I analyzed the worksheet which obtained the laboratory lessons (Density of the object and Conservation of mass contents). In this analysis, I focused on the two tasks conducted after the pre-survey. When conducting the analysis, I discussed its validity with one science educator and the assistant (the one who observed during conducting experiment). After, the worksheets have been checked and the results shown the three categories different among the 24 student teachers. First category, student teachers were able to provide scientific evidence such as state the claim, add a warrant or evidence and make justification approximately on the two tasks (shown in figure 2 and 3). The second category of student teachers were able to differentiate, and claim innocence but they could not provide good intention and add any warrant. The last category, student teachers were not able to come up with a suitable scientific evidence or distinguish, provide feedback and claim within the two tasks.

Claim: Conservation of mass stated: The total mass of the reactants equal to the total mass of the products

Evidence: Do the experiment to confirm the theory: Reaction between Calcium carbonate and Hydrochloric acid (Toilet soap). Weight the mass of $CaCO_3$ and HCl and the products $(CaCl_2, H_2O, CO_2)$

Justification: Since the total mass of the reactants $(CaCO_3$ and HCl $)$ equal to the total mass of the products $((CaCl_2, H_2O, CO_2)$, the result is compatible to the conservation of mass

Fig 2: Worksheet of task 1

Claim: The wood floated in the water

Evidence: After calculating the density of wood , the result shown that the density of the wood is lower than the density of the water

Justification: Since the density of wood is lower than the density of the water, thus the wood floated
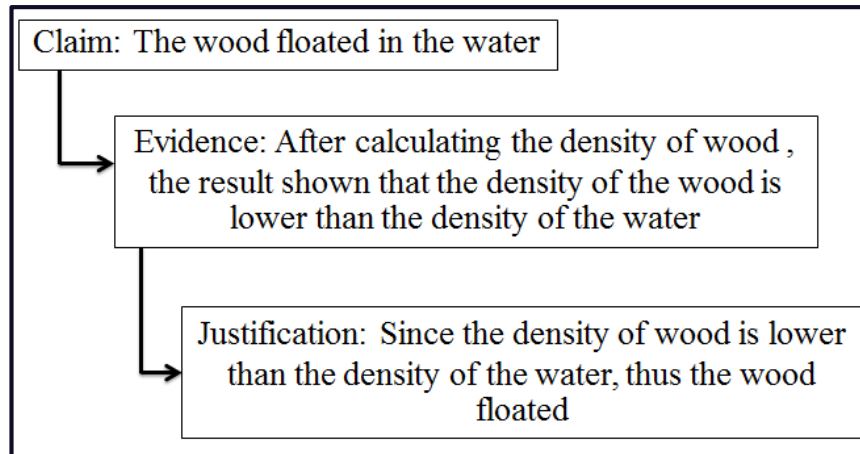
Fig 3: Worksheet of task 2

		N=24
	Categorization of the written contents	Number of students (%)
1)	Providing claim, evidence, and the justification approximately	13(54.1%)
2)	Providing claim, evidence, but less the justification	9(37.5%)
3)	Failing on providing claim, evidence, and the justification	2(8.3%)

The table 5: Results of the analysis of the writing on the worksheets

4.3   Analysis of Classroom Observation

To examine the student teachers' activities during the first and the second session of the experiments observed by the assistant, the results shown that numerous of student teachers incorporates argumentation leaded to group discussion and made decisions using more refined criteria. Observation of laboratory work was carried out 2 to 3 hours, and student teachers conducted the experiments in a group of five. Basically, doing the experiments learners built more argumentation. The ability of building the argumentation enable the student teachers to think critically. I found that most students think deeply during group discussion.
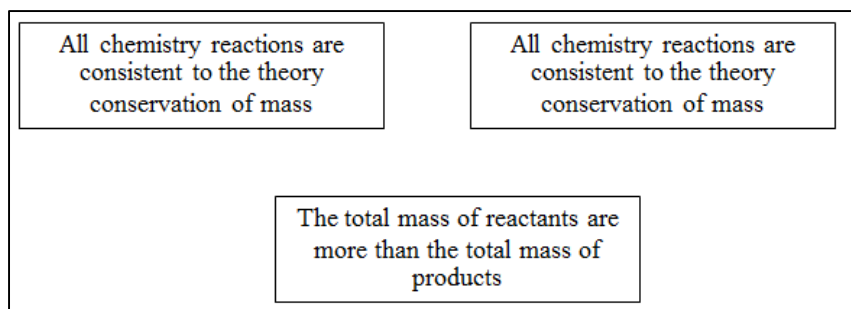
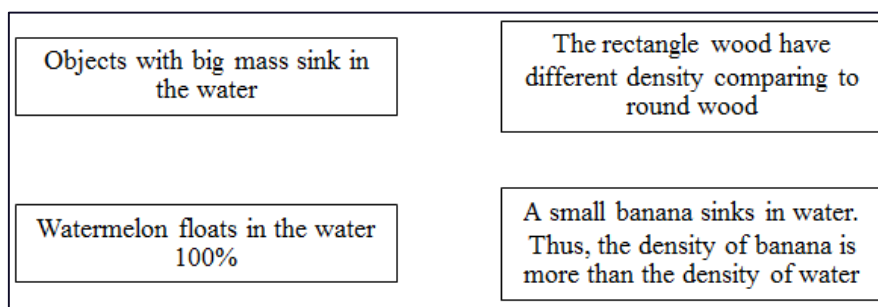*Fig 4: Argument cards distributed in the first session*

Fig 5: Argument cards distributed in the second session

V. Disccusion

Based on the response to the survey questions which were created initially, I observed the change of student teachers in the attitude of critical thinking in chemistry laboratory work. Then, I analyzed on their written response on the worksheets and examined the argumentations activities through experiment lessons. The results are shown below respectively.

5.1 Analysis using the questionnaire

In order to scrutinize the effect of the critical thinking skills of student teachers based on their ability, I analyzed the student teachers' response to the questions through pre-survey and post-survey. As shown in Table 1, the paired samples test of Exploratory and rational thinking and refelctive thinking in Table 3 were significantly higher trend after the practice than before. The same results shown in the previos study that refective thinking was significant however, no significant different for the exploratory and raitonl thinking (Amanaka et al., 2018). Based on this, the teaching of each content was able to foster an attitude on exploratory and rational thinking and refelctive thinking. Most researchers believe that a good teaching

method is one way to imply the relevant and visible training values that can motivate students and make them aware of their understanding and reflection, help them make up their critical thinking which will guarantee their trust in their own forces (Iurea et al., 2011; Qing et al., 2010).

As displayed in Table 2, all pairs of items on Multifaceted thinking statistically was significant difference at the 0.001 level. Current research has presented an empirically derived hierarchical and multifaceted conception of student. They found that student learning from a developmental perspective since a student's meta-cognitive abilities to adapt to changing instructional demands is greatly dependent upon awareness of personal vulnerabilities, preferences, and strengths (Geisler-Brenstein & Schmeck, 1996).

Table 4 revealed that the pairs of skeptical thinking. The results shown significant difference at the 0.001 level. Another is significant difference at the 0.05 level. By using the Scottsdale Test of Critical Thinking of previous research, the result revealed that the posttest distribution increased towards somewhat higher scores because of the effects of the critical-thinking lessons (Ricker, 2016).

5.2 The analysis of the writing on the worksheets

To illustrate the argumentation of the student teachers the analyzed of the note written on the worksheets was examined and the argumentation cards were shown in figure 4 and 5. The results shown Table 5 of this present study that 52% of the student teachers can providing claim, evidence, and the justification approximately while there is 8.3% probability that coincident fluctuation occurred; none of the scores were outside the estimated range. Similar results shown in the current research that 82% of the students understood the framework of argumentation, and they were able to investigate the warrant within each task (Amanaka et al., 2018).This present research results are consistent with the hypothesis that student teachers can develop their attitude of critical thinking skill through argumentation effectively.

VI.   Conclusion

The aims of this research are to check the critical thinking skills of student teachers 12+4 of BTEC based on their ability through pre-survey and post-survey and to describe the

attitude of critical thinking skills through their argumentation on chemistry laboratory work. To achieve this goal, I used the pre-survey and post-survey to check on the development of student teachers' critical thinking skills. By analyzing the answers to the questions survey and by analyzing students' worksheets, the results are possible to foster an attitude of thinking critically. Therefore, it is exactly that laboratory work contributed to train student teachers to improve an attitude of critical thinking. Also, the effeicency of teaching is related to content knowledge, methodology, assessment and suffienct laboratory materials. The obtained result of skeptical thinking had less data on previous research. For the further study, teaching strategies such as laboratory inquiry, problem based-learning (PBL) method are suggested to do more research on how they can improve student teachers' critical thinking skills and a meaning of the course, too. This research has some limitations as following. Firstly, the time to conduct this research was too short. Secondly, the measurement of the critical thinking was not strong enough. Next, real-time teaching was just one time.

References

Adams, R. S., Turns, J., & Atman, C. J. (2003). Educating effective engineering designers: The role of reflective practice. *Design Studies*, *24*(3), 275–294. https://doi.org/10.1016/S0142-694X(02)00056-X

Amanaka, S. Y., Inoshita, H. K., & Aehara, T. M. (2018). A Study on Training of Critical Thinking Attitude in High School Chemistry. *Educational Technology Research*, *40*(1), 53–60. https://doi.org/10.15077/etr.41079

Anwar, Y. A. S., Senam, & Laksono, E. W. (2017). Identification of the students' critical thinking skills through biochemistry laboratory work report. *AIP Conference Proceedings*, *1868*. https://doi.org/10.1063/1.4995112

Bećirović, S., Hodžić, F., & Brdarević-Čeljo, A. (2019). The problems of contemporary education: Critical thinking development in the Milieu of high school education. *European Journal of Contemporary Education*, *8*(3), 469–482. https://doi.org/10.13187/ejced.2019.3.469

Ben-Zvi, R., Hofstein, A., Samuel, D., & Kempa, R. F. (1976). The attitude of high school students towards the use of filmed experiments. *Journal of Chemical Education*, *53*(9), 575–577. https://doi.org/10.1021/ed053p575

Cana, Ş. (2013). Pre-service Science Teachers' Concerns about Chemistry Laboratory (Case of Muğla University-Turkey). *Procedia - Social and Behavioral Sciences*, *106*, 2102–2111. https://doi.org/10.1016/j.sbspro.2013.12.239

Chiu, M.-H., Mamlok-Naman, R., & Apotheker, J. (2019). Identifying Systems Thinking Components in the School Science Curricular Standards of Four Countries. *Journal of Chemical Education*, *96*(12), 2814–2824. https://doi.org/10.1021/acs.jchemed.9b00298

Coştu, B., Ayas, A., & Niaz, M. (2010). Promoting conceptual change in first year students' understanding of evaporation. *Chemistry Education Research and Practice*, *11*(1), 5–16. https://doi.org/10.1039/c001041n

Freedman, M. P. (1997). Relationship among Laboratory Instruction, Attitude toward Science, and Achievement in Science Knowledge. *Journal of Research in Science Teaching*, *34*(4), 343–357. https://doi.org/10.1002/(SICI)1098-2736(199704)34:4<343::AID-TEA5>3.0.CO;2-R

G. Quattrucci, J. (2018). Problem-Based Approach to Teaching Advanced Chemistry Laboratories and Developing Students' Critical Thinking Skills. *Journal of Chemical Education*, *95*(2), 259–266. https://doi.org/10.1021/acs.jchemed.7b00558

Geisler-Brenstein, E., & Schmeck, R. R. (1996). The Revised Inventory of Learning Processes: A Multifaceted Perspective on Individual Differences in Learning. *Alternatives in Assessment of Achievements, Learning Processes and Prior Knowledge*, 283–317. https://doi.org/10.1007/978-94-011-0657-3_11

Hofstein, A., & Lunetta, V. N. (1982). The Role of the Laboratory in Science Teaching: Neglected Aspects of Research. *Review of Educational Research*, *52*(2), 201–217. https://doi.org/10.3102/00346543052002201

Hofstein, A., & Lunetta, V. N. (2004). The Laboratory in Science Education: Foundations for the Twenty-First Century. *Science Education*, *88*(1), 28–54. https://doi.org/10.1002/sce.10106

Hong, Y. C., & Choi, I. (2011). Three dimensions of reflective thinking in solving design problems: A conceptual model. *Educational Technology Research and Development*, *59*(5), 687–710. https://doi.org/10.1007/s11423-011-9202-9

Hong, Y. C., & Choi, I. (2019). Relationship between student designers' reflective thinking and their design performance in bioengineering project: exploring reflection patterns between high and low performers. *Educational Technology Research and Development*, *67*(2), 337–360. https://doi.org/10.1007/s11423-018-9618-6

Iurea, C., Neacşu, I., Safta, C. G., & Suditu, M. (2011). The study of the relation between the teaching methods and the learning styles - The impact upon the students' academic conduct. *Procedia - Social and Behavioral Sciences*, *11*, 256–260. https://doi.org/10.1016/j.sbspro.2011.01.072

Kek, M. Y. C. A., & Huijser, H. (2011). The power of problem-based learning in developing critical thinking skills: Preparing students for tomorrow's digital futures in today's classrooms. *Higher Education Research and Development*, *30*(3), 329–341. https://doi.org/10.1080/07294360.2010.501074

Lazarowitz, R., Hertz-Lazarowitz, R., & Baird, J. H. (1994). Learning science in a cooperative setting: Academic achievement and affective outcomes. *Journal of Research in Science Teaching*, *31*(10), 1121–1131. https://doi.org/10.1002/tea.3660311006

McLaren, S. V. (1997). Value Judgements: Evaluating Design: A Scottish Perspective on a Global Issue. *International Journal of Technology and Design Education*, *7*(3), 259–278. https://doi.org/10.1023/A:1008825219627

Neuman, Y. (2009). Can the Baron von Münchausen Phenomenon be Solved ? An Activity-Can the Baron von Münchausen Phenomenon be Solved ? An Activity-Oriented Solution to the Learning Paradox. *Learning*, *8*(923032042), 37–41. https://doi.org/10.1207/S15327884MCA0801

Qing, Z., Ni, S., & Hong, T. (2010). Developing critical thinking disposition by task-based learning in chemistry experiment teaching. *Procedia - Social and Behavioral Sciences*, *2*(2), 4561–4570. https://doi.org/10.1016/j.sbspro.2010.03.731

Ricker, J. (2016). *Teaching and Assessing Skeptical and Critical Thinking in Abnormal Psychology Teaching and Assessing Skeptical and Critical Thinking in Abnormal*

Psychology Chair , Department of Behavioral Sciences Report submitted to fulfill MCCCD Faculty Evaluation Plan. *August*. https://doi.org/10.13140/RG.2.1.4914.9686

Studies, D., & Competition, P. D. (1998). The Reflective Practice of Design Teams. *Design Studies*, *19*(1998), 7–10.

Suardana, I. N., Redhana, I. W., Sudiatmika, A. A. I. A. R., & Selamat, I. N. (2018). Students' critical thinking skills in chemistry learning using local culture-based 7E learning cycle model. *International Journal of Instruction*, *11*(2), 399–412. https://doi.org/10.12973/iji.2018.11227a

Thompson, J., & Soyibo, K. (2002). Effects of lecture, teacher demonstrations, discussion and practical work on 10th graders' attitudes to chemistry and understanding of electrolysis. *Research in Science and Technological Education*, *20*(1), 25–37. https://doi.org/10.1080/02635140220130902

Visscher-voerman, I., & Procee, H. (2006). *Teaching Systematic Reflection To Novice Educational Designers Part 1 : The Curricular Representations Of The Systematic Reflection Course*. 344–358.

Yu, K. C., Lin, K. Y., & Fan, S. C. (2015). An exploratory study on the application of conceptual knowledge and critical thinking to technological issues. *International Journal of Technology and Design Education*, *25*(3), 339–361. https://doi.org/10.1007/s10798-014-9289-5

'Effects of visual aids in learning grammar: An action research on students' grammar learning with the help of pictures'

Teacher Educator: LANG Borath

Teacher Educator: BOU Da

Abstract

The purpose of this action research is to obtain empirical data on how grammar teaching with visual aids has favorable effects on students' motivation and actual learning of grammar. This study was conducted with 30 first year students at Battambang Teacher Education College (BTEC). They received grammar instruction in English with visual aids in the form of pictures that described the concepts and the use of the target grammar. The instruction lasted for about 30 minutes in each lesson. In total, 12 lessons were conducted for this action research. The effects of this instruction were analyzed by pre-post questionnaires from the points of views of their attitudes toward learning grammar: written grammar tests; students' free comments and teacher observation of students' actual use of grammar in the class. The results showed: their grammatical knowledge, accuracy in their grammar use and their motivation in learning grammar improved with the instructions. In conclusion, this visual teaching approach of grammar has strong impact on their grammar learning in the class. In the presentation, the details of the instructions and the results will be explained.

Keywords: grammar instruction, visual aids, students' motivation

List of Abbreviations

AR   : Action Research

ADB   : Asian Development Bank

AVA   : Audio-Visual Aids

BTEC   : Battambang Teacher Education College

EFL   : English as Foreign Language

FL   : Foreign Language

JICA   : Japanese International Cooperation Agency

MoEYS   : Ministry of Education Youth and Sport

PTEC   : Phnom Penh Teacher Education College

TEC   : Teacher Education College

TTD   : Teacher Training Department

UNTAC   : United Nations Transitional Authority in Cambodia

UNESCO   : United Nations Educational, Scientific, and Cultural Organization

VVOB   : Not found with specific words for, but also known as an NPO (a non-profit
                      organization) and commissioned by Flemish and Belgian governments they
                      contribute to the quality of education in developing countries

CHAPTER 1
INTRODUCTION

1.1. Background and rationale
1.1.1. Introduction

Teaching and learning English as a foreign language is based on productive and receptive skills. One of those skills, grammar is considered as an important skill which many EFL students want and need to develop. This chapter introduces the importance of using visual aids in teaching and learning. Besides, it deals with different kinds of visual aids through pictures that can be used in classroom in order to improve students' language learning abilities and motivation. The study will focus on pictures as the help of learning grammar and strategies with the use and their importance from the teacher's teaching aids.

1.1.2. Educational history

After the Khmer Rouge (1975-1979), educational infrastructure was left with less formal education such as school buildings and libraries that were destroyed, and targeted educated Cambodians like teachers and professors for death (for a discussion, see Clayton, 1998). According to the Ministry of Education (1990), about 70 percent of the teaching in the country, 96 percent of tertiary students, and 67 percent of primary and secondary students died because of starvation or not better treatment. So in the early 1980s, the small number of Cambodian teachers and professors to replace those who were killed by the Khmer Rouge continued the main part of this project, it involved considerable substitution with technical assistance. The human resources such as the professors to offer university education on their own with limited language decisions with digging resources for teaching.

1.1.2.1. Primary education

Many agencies have assisted the primary level of education in Cambodia since the early 1990s under the Asian Development Bank for textbook development through the Basic Education Textbook Project (ADB, 1996, 20 June). In the Education Quality Improvement Project, the World Bank aims to improve primary school effectiveness. Among other things, the European Union's Programme d' Appui au Secteur de 'Education Primaire au Cambodge has provided comprehensive support to the country's primary teacher training colleges; as of 2000, this project had trained more than 800 faculties for these colleges. However, none of

those projects contravene official language policy, which states that Khmer shall be the language of instruction in Cambodia.

1.1.2.2. Secondary education

Khmer is the language of content studies in secondary education in Cambodia. In 1996, the Ministry of Education, Youth, and Sport made more precise to offer English and French as foreign languages in secondary schools in grades 7, 8, and 9 as students are to study either English or French for five hours per week; they are to continue studying this same language four hour per week in grades 10, 11, and 12 (MoEYS, 1996). At that time there were more number of Cambodian French teachers staffed the country's 355 lower- and 132 upper-secondary schools; most of them educated before 1975 and had survived the Khmer Rouge regime. However, there simply were not enough English teachers to implement the new language policy. Throughout the 1990s, the language teaching was imbalanced with the quality of language instruction in secondary schools.

1.1.2.3. Tertiary education

There is no clear policy or guideline from the government regarding foreign language education in higher education, the rector of the Royal University of Phnom Penh wrote in 1997 (Pit, 1997, p. 4). Language policies depend on foreign aid just as they did in the 1980s; Khmer should be the language of teaching for higher education. The flexibility of higher education institutions in the choice of language as medium of instruction" (recommendations of the National Higher Education Task Force, cited in Hebert, 1999a, p. 282; my emphasis), but French in tertiary education was still strong in Cambodian education in 1990s.

1.1.3. The language choice for academic achievement

According to Clayton (2006), Cambodia was one of the severed countries that has to select a new government to start democratic election in 1993 sponsored by United Nations Transitional Authority in Cambodia (UNTAC). After the election, English as a Foreign Language (EFL) started to grow in the country with the language choice that English situation is demanded in Cambodia, so the political situation has opened the opportunity for international aid agencies to Cambodia. Currently, English is studied as a bridge for communication and careers in working for foreign NGOs, companies, banks and other

working institutions. So, culture exchanges, business, or jobs, can be easily accessed to the globalization through learning languages especially English (Clayton 2006). By looking at the report from UNESCO (2005), many people resulted in illiteracy while labor market requires the qualified people to challenge the globalization. As a result of lacking the human resources, motivation to language learners like English is needed. In order to foster learning habits and opportunities, language learners can be affected by internal and external factors. Remarkably, the Ministry of Education, Youth and Sports, English is still required in education in higher education in Cambodia comparing to other developed countries.

Since the beginning of economic and political transition, Cambodians have made various languages choices. Recently, the government has taken steps to safeguard the status of Khmer relative to English in education; this and other attempts to augment the educational utility of the national language, coupled with its organic utility in economic and political life in Cambodia, suggest for Khmer a continuing vitality, if not an upward trajectory. While some Cambodians continue to learn French for its educational utility, most, however, have followed the shifting allocation of language resources away from French, toward English, especially, as teachers, books, and materials dedicated to English language learning have been made available by international assistance organizations. Furthermore, local educational administrators, Cambodians have grasped them and unceremoniously dropped French. In order to invest more human resources within the global education, Cambodians have chosen English for its various utilities. "Jobs," said students in the English Department at the Institute of Foreign Languages. With choices, the number of Cambodians in learning English has increased dramatically in secondary schools and public universities; even more spectacular has been the growth in private English-language schools and universities, which run the gamut from substantial foreign-owned and locally owned institutions with stables of teachers. Cambodians with English language skills and pedagogical aspirations, some have benefited from the rise of English, notably the investors who have grown rich selling the language to eager ones (Clayton, 2006).

In the present time, Phnom Penh Teacher Education College and Battambang Teacher Education College were inaugurated in 2017 for training the student teachers from all over the country with Japanese International Cooperation Agency (JICA), these two institutions merged to create the training colleges for training primary and secondary teacher students for

12+4 program with the up-to-date resources, mostly in English for almost every subject. So, they require full knowledge and motivation in learning English as the means of success in academic achievement.

1.1.4. How students learn English language at Battambang Teacher Education College (BTEC)

Cambodia is a developing country that needs human resources to help develop the country primarily from the better quality of education. In order to improve learning efficacy in education, the Ministry of Education Youth and Sport of Cambodia (MoEYS) cooperates with VVOB Cambodia and JICA projects for improving technical education. Thus, educational development approach, JICA (Annual report, 2018) are systematically connected to the policy plans of the Royal Government of Cambodia to work together with Teacher Education Colleges (TEC) and Teacher Training Department (TTD). Under those supports, student teachers need more motivations for reaching the standard education equipped with good learning engagement and motivation, and up-to-date resources with experienced teacher educators. Among those factors, English language is one of the course syllabi set in training the student teachers at Battambang Teacher Education College (BTEC) for fostering their English language competency and helping their research abilities, especially after training; they will be able to use English for pursuing their life-long learning to higher education. Students are required to learn English from the first to the last year of the program of 12+4 for at least 1 and at most 3 hours a week for non-major teacher students so that they will obtain the credits of 1 to 3 per academic year.

1.2. Statement of the problem

The problem of English motivation in teaching and learning is magnified when 21st-century learners are asked to navigate 20th-century classrooms. In 20th-century classrooms, learning was essentially linear. Problems had logical solutions, and there were usually step-by-step processes for arriving at an answer. Because learning was linear, so was motivation with visual aids. Using visual aids is a very complex process for how the teachers can use them. Most of the schools do not use them in their teaching procedures. This paper is going to survey the other problems that confront using visual aids.

But the kind of learning necessary in the 21st century is not so much linear as it is geometric. When facing complex problems, students may seem unmotivated in the classroom, but creativities in the classroom to make them be own dynamic, multimodal, mobile, and collaborative. In contrast, traditional classroom activities—controlled, one-way, static, and meant to be done alone—offer few chances for students to use the skills and knowledge they see as valuable. If we want to motivate 21st-century learners, we first need to find ways to make our classrooms more conducive to their 21st-century currencies. Happily, it's possible to do this by making some simple shifts in instructional practice. For instance, instead of always having student learning by memorizing, including more opportunities for collaboration is more concise with visual aids. Rather than relying on the textbook as the sole source of information, allowing students to learn through a variety of media, such as some visual materials like videos, pictures, websites, and podcasts. Instead of having students solve problems with predictable solutions, give them problems with unpredictable outcomes and real-world applications (Jackson R., 2011). Second, instead of trying to move our 21st-century students toward the behaviors we'd like to see via carrots and sticks, we need to step back and allow them to take these steps on their own. The task here is to identify and remove barriers to investment and set up a classroom that students will choose to take part in.

Due to lack of improvement in education quality and limited quality of learning in Cambodian higher education constraints, students' motivation, and research capacity remains not yet developed in their learning, reported Cambodian Education Council (2017). Therefore, motivation is required for promoting students from lack of learning interest, especially language is one of the other obstacles in students. Most students have difficulties in getting to understand the contents of their own subjects because through the new training program for primary and secondary education that is transferred from 12+2 to 12+4, teacher students require a lot of effort in reading and researching abilities in English language. The resources are all from the standard education in English publication, not in their own mother tongue (Khmer). If they don't want to focus on their learning, they lose interests in learning the language, especially English, they will lose their credits in their academic achievement. So, English is one of the causes that helps support teacher students in getting the main goal of training with fully understanding the knowledge and teaching methods as the further career. Without learning English, teacher students will not able to find extra resources to support their

abilities in the preferred major for self-improvement. In order to reach this goal of learning English as the means of reaching the academic purpose in training, creating suitable materials in classroom plays a crucial role for improving students in increasing interests for improving knowledge and motivation.

For an action research on students' grammar learning with the help of pictures, one of researchers in which his classroom has been conducted, he has involved in department of linguistics in Battambang Teacher Education College (the former Battambang Teacher Training Center) for almost ten years in teaching English. Every year, the English teaching committee always raise their challenges in teaching English for finding the solution. For one of those, students were noticed being slow and not active in learning English grammar. It reflected on teaching strategies that were applied in the classroom of English grammar. This happened after his lessons in the first semester that seemed more like a very boring class and student teachers did not fully participate and learn actively in the class. It seemed like teacher did a lot of explanation to the students, so learning English grammar with 3Bs (Book, Board, Boring) and 3Ts (Teacher Talking Time) exceed the students' participation in the classroom. When challenges happened and their motivation was lack through a lot of observations on their facial expression, behavior, and attitude of joining activities in pairs or groups, the team decided to discuss and tried to address it. It is about how to motivate student teachers to learn more actively and develop their grammatical accuracy in writing and speaking with the better way of using visual aids in grammar lessons (MoEYS, 2015).

In the similarity to the above problem, Gregersen and Hortwitz (2005, p.562-570) argue that "learners who feel less enjoyable in their foreign language learning may find their study negative on their performance." (As cited in Riasati 2011, p. 907). Moreover, concerning the negative effects of bored learning, Alderman (2004) says that "as less enjoyment increases, it is more likely that students will have lower achievement" (p, 97). Besides, Horwitz (1991) shows that less enjoyment has negative effects on students' learning performance. It could influence students' self-confidence which makes them appear less fluent than they really are (p, 125-126). Therefore, teachers should create a relaxed classroom atmosphere which gives students more comfortable situations in learning activities e.g. using the visual aids to promote the students' enjoyment and knowledge development in learning.

Having lack of motivation in teaching strategy and learning process, Gardner (2010) states that "motivation is using the good teaching aids in the help of learning is the way of producing strong effort in learning the second language." He mentions that motivation consists of three main elements. The first element is "effort". Motivated learners do much more effort and extra work in their studies in order to improve language skills. The second element is "desire". Motivated learners have the desire to succeed in learning the second or foreign language. The last element is "affect". Motivation makes students enjoy leaning the language. These elements wok all together. If any learner lacks one of them, he will not be completely motivated, as a result he will find learning difficulties. (As cited in Saemann, 2009 p1-2)

The lack of motivation with creativities is one of the main factors that influence negatively on the students' learning abilities. Harmer (1998, p.8) states that" it is clear that highly motivated students do better than ones without any motivation at all." That's why, teachers should motivate them by using interesting teaching strategies and aids for increasing their full participation in the class.

Lee and Park (2004, p.197-198) state that self- confidence can be negatively influenced when the students underestimates their abilities in the target language. They add that high self-confidence is positively "correlated with oral performance". In other words, students who have high self-confidence perform well in oral activities. Moreover, there is a relationship between anxiety and self-confidence. Lee and Park mention that "one of the personal factors, which are highly correlated with anxiety, is self-confidence." Whereas, high anxious students have low self-confidence. Therefore, to develop students' speaking skill, teachers should reduce anxiety to enhance their self- confidence to help them to perform well in speaking. Teachers should create a relaxed classroom atmosphere and use different classroom activities to practice speaking in order to improve their students' self- confidence because "confidence comes with practice" (Hedge, 2000, p. 255).

1.3. Purposes of the study

According to the above issue mentioned, the research was conducted to discover the better ways of teaching effectively with visual aids by using the pictures as the help of teaching English grammar and get students involved actively in the class. There are two main purposes of this action research.

(1) The first purpose is to examine the effectiveness of grammar teaching with visual aids.

(2) The second purpose is to find out the reasons of the effectiveness of grammar teaching that increase student teachers' grammatical knowledge with accuracy in writing and fluency speaking.

1.4. Research questions

(1) Is students 'grammar learning facilitated by visual aids?

(2) If so, what are the reasons?

1.5. Hypothesis

(1) Students' grammar learning will be facilitated by visual aids.

(2) Students will be highly motivated by visual aids.

1.6. Significance of the study

This study will be significant to motivate the student teachers to learn English grammar at Battambang Teacher Education Colleges (BTEC) effectively. First, the study will increase the student teachers' English language abilities through the effects of visual aids (pictures) in their learning.

Furthermore, the study will be able to identify how much learning with pictures interests and motivates student teachers' learning. Then there will be helpful data for showing how much knowledge and motivation in learning English as the help of pictures. So, it will be beneficial for students to reach their academic achievement through learning English effectively.

1.7. Limitation and scope of the study

This study was conducted at Battambang Teacher Education College (BTEC) in Battambang province. It provides training course for primary and secondary student teachers who are from twelve provinces in Cambodia. As it has been transferred to train bachelor degree of education (12+4 program), the course syllabi are mostly in English for student teachers. Regarding to the problems in their learning, there are some difficulties in understanding the lessons and instructions for their learning and researching. So, how to motivate them to feel interested in learning English is very significant for improving their knowledge as well as an academic achievement, whereas the study with visual aids will be used to testify how effective it is on their English learning.

So, the process of teaching with the correct techniques and teaching aids in learning English grammar is one part of strengthening four important skills in learner's language abilities. It is defined by different authors and scholars as the skills of using the correct structure through which people express their ideas, thoughts and interact with each other.

CHAPTER 2
LITERATURE REVIEW

In Cambodian education system, students learn English from primary school until high school. In primary school, English subject is currently taught from grade 4, but not all primary school teachers can teach English to children because their English proficiency is limited. So students can actually learn with Major-English teachers until they enter secondary schools. The Ministry of Education, Youth and Sport of Cambodia has replaced English for Cambodia (Textbooks) since 2015 in lower secondary schools with English Grades 7-9 (textbooks) in order to reach students' goal of the 21st century skills –reading, writing, speaking, listening, and grammar. However, the English for Cambodia series (old textbooks in the past 20 years) is still used in upper secondary schools. Most teachers use more grammar translation methods in teaching English grammar. It is like more teacher-center approach with traditional ways of teaching, and the lessons are not really interesting. So, it may affect teaching and learning outcome.

In the past few years, English education in Battambang Teacher Education College (BTEC), a former Battambang Regional Teacher Training Center (RTTC), was trained for non-major and major student teachers with no degree in education of 12+2 program. For non-English major student teachers, there was no English grammar included in general subjects of training except for the English-major student teachers. After transferring the center into one institution named BTEC, it is aimed to train both primary and secondary student teachers of 12+ 4 program with bachelor degree of education. So, they are required to learn English grammar as one of the general subjects in the first year of primary education. It is counted 3 credits in their degree of education, so learning English grammar is the help of other subjects through using the correct English in writing, speaking, research reports, presentations, and promoting life-long learning for the further degree of education. For the first year of non-English major student teachers of primary education of 12+4 program, they have different background levels of learning English, and it is hard for teaching them the upper-intermediate level of grammar to be ready for the 21st century skills of learning English. Thus, teaching grammar is one of the most difficult lessons for Cambodian students that most teachers really worry about. It's boring! Teachers often talk a lot and students copy off the board. As most teacher do, grammar translation method is often used in school, and it may be true that learners are finding grammar and copying boring. If they are bored, they won't learn. So, a point in explaining grammar to learners in the same traditional ways for grammar lessons, they are not motivated to read it, listen to it, write it and say it (MoEYS, 2015).

2.1. Visual aids

Mignot (2000) mentions, "visual aids are things which we can see, which we can use in the classroom to help students understand, for example, they are blackboard drawings, pictures, posters, photographs, maps, plans, flashcards, realia (real objects), the teacher and students (using mime and gestures)." Visual aids can also include equipment such as TV, video, slide projector and overhead projector, but these are not found in many schools in Cambodia. Students can understand a new word or grammar item from a picture or mime more easily than listening to an explanation using only words e.g. to explain 'a horse' or 'to point'. It cuts down on teacher talking time and increases student talking time. It is more interesting for students to look at something, instead of just listening. It makes the lesson livelier. Visual aids help the teacher save time, with little or no preparation with most classrooms have a black or white board for the teacher to use. The teacher can use realia– objects in the classroom e.g. books, furniture, clothes. The teacher or the students can mime actions e.g. 'swimming' or 'smiling'. The teacher can use the pictures to teach vocabulary, grammar, or to practice speaking or writing. 'Sometimes the teacher needs different visual aids to help students understand or give them practice. These have to be prepared before the lesson, but they can be used again and again. To make and use simple visual aids, it is useful on teaching practice and when know how to use the board well, draw simple pictures make charts and posters, and make any flashcards.

Visual aids are useful materials which help both teachers and students in the teaching and learning process. Many researchers and websites provide different definitions of visual aids. Myhill (2011) says, "visual aids are any device which can be used to make the learning experience more concrete, more realistic and more dynamic." Burton states that "visual aids are those sensory objects or images which initiate or stimulate and reinforce learning." In addition, Mathew (2013) defines, "visual aids are those aids which help in completing the triangular process of learning that is motivation, classification and stimulation." So visual aids are very useful devices because they do not facilitate the learning process only, but they motivate students and make the course interesting.

According to Oxford's dictionary of education (2008), "visual aids are anything by means of which learning process may be encouraged or carried on through the sense of hearing

or sense of sight." Moreover, KP. Neeraja states that "an audio visual aid is an instructional device in which the message can be heard as well as seen. In the same context, Mckean and Roberts add that "visual aids are supplementary devices by which the teacher, through the utilization of more than one sensory channel is able to clarify, establish and correlate concepts, interpretations and appreciations."

From these definitions, it can be concluded that visual aids are important devices which facilitate learning and teaching process. Besides, they help students to acquire the foreign language and develop their knowledge and increase motivation since they give them the opportunity to visualize the new grammar item as well as learners are able to see the pictures in making the sentences through speaking and writing.

2.2. Teaching and learning grammar with visual aids

There are different materials and teaching aids that could help students to enhance their grammar abilities for effective communication. Using these materials is the only way to bring the motivation in participating actively into the classroom. In order to help students, develop their knowledge and motivation in learning English language, teachers should use visual aids to support learning in classroom. These kinds of teaching aids are very important for students since it provides an exposure to authentic foreign language. So visual aids give students the opportunity to see the pictures that can engage the students and foreign language as it is used by teachers in the lessons.

Baleghizadeh and Ashoori (2011, p. 9) considered the effect of using visual aids on EFL students learning of foreign language content and function such as vocabulary and new target of grammar rules in learning. The result of their study showed that visual aids with the help of pictures could lead to a better learning of new grammar and vocabulary as function words or grammar as they can easily be practiced broadly. Following Luong (2009) and Baleghizadeh and Ashoori (2011) who supported the effectiveness of using visual aids in teaching grammar, the present study is an attempt to see if they can specifically be useful in teaching English, and which one actually can play a greater role in improving students' knowledge of the new target item of the lesson.

It was found that a picture tells a thousand words with helpfulness to the passive learners (NG, 1996). It means that those who lose their attention can be transformed into pictures or real images in a fast way of teaching and learning in the class. It is important to capture students' attention with a teaching aid and it is worthwhile to make students either become interested in an effort to participate in the grammar lessons by trying to speak and write English. Through the display of the pictures for the helps of teaching grammar students in the solution of a tutorial problem, the results of learning language can be demonstrated impressively and effectively; hence, students' attention could be captured and sustained longer in their memories.

When you learn about the grammar of your own language, the most important thing to remember is that you already know most of it (Dignen, 2017). Every time you open your mouth to speak, you are using grammar without even realizing it! For example, when you talk about what you did yesterday, what you're doing now, and what you are going to do tomorrow; you talk about your friends, you talk about your family members; you talk about exciting entertainments, more and the most exciting movies you've ever seen, etc. Those situations that you are talking about is always with using grammar. When you formulate the words in your mind, it relates to your experiences to communicate in understanding the language with different meanings and you become confident in using it. So you can choose the best words and the best kinds of sentences for what you want to say or write.

People today can learn English for a wide variety of ways and purposes for working, living in an English-speaking country, or planning to visit one in communication. Students can learn any language by observing, discovering and practicing how it is used (Crichton J., Koster P. , 2015). So learning language through pictures can enable students to present language in the contexts in which it is used. Students learn the meaning of what is written by studying how language is used in the pictures. It's actually fun with the help of pictures to an individual student or a conversation group or classroom with a teacher because learning grammar with pictures can motivate students with visible topics related to the specific grammar and provides more opportunity for students to produce the language creatively and more practically.

Among the important ends to be achieved through the use of visual aids in the classroom dependent upon intelligent selection are the development of ability to select from and see relationships among the variety of facts and general information with careful selection of materials for classroom use (Cline, 1938). It can be very important to shape the ways of grasping the language through visual aids as the followings:

(1) DESIGN FOR LEARNING: Learning English in the quickest and clearest way—through pictures—learners are encouraged to produce useful words to work in key sentence patterns where the meaning is clearly shown in pictures. So, motivation for learning comes from handling increasingly complex patterns successfully and confidently.

(2) WORDS WITH POWER: Students are able to build words from the visual aid with possibilities of English communication through the crucial process of learning. Building words from pictures as the help of learning grammar is the effective instrument for thinking.

(3) TOWARD A WORLD ENGLISH: Visual aids have been used as a self-teacher by learners of all ages, in educational institutions such as schools or other diverse settings in the world where a command of English is needed. As an assistance needed to move the learner beyond visual comprehension to a command of both spoken and written English, it is the most effective method as a space for the learner to practice speaking English through pictures. (Richards I.A., Christine M., 2005)

There many reasons for using visual aids to motivate students because they find them interesting, engaging, culturally enlightening, and relevant (Richard, 2004). Students learn with pictures become motivated because the materials bring them close to the culture of the target language that affect oral and written input. In particular, visual aids can help students to achieve their goal of learning by of enriching their experiences in the learning and use of English, sensitizing them to the use of English in the real world, and helping them to generate a learning strategy for learning not only English but also other subjects.

2.3. Theoretical perspectives

The position of grammar in instructing and learning English Harmer (1987, p.12) points out "Without some understanding of Grammar, students would not be able to do anything more than utter separate items of language for separate functions. The expression of

functional language is only possible through the grammar of the language." Firstly, instructing grammar helps learners know in which way the language works. In addition to mastering language abilities, students are required learn grammar to understand how words are combined together in a sentence so that they can understand the correct meaning. In fact, lacking grammar knowledge, it is easy for students to get stuck with complicated sentences. Therefore, if grammar is taught within communicative and meaningful contexts, it will promote students" communicative goals and sufficient accuracy and fluency in language use. Secondly, Larsen and Freeman (1986, p.13) also reinforce how important   grammar is in English teaching and learning. They affirm that grammar can be considered as a skill rather than a language area. Obviously, learners store knowledge language and its usage. Thus, they need to be provided opportunities of real life situations to practice their grammar knowledge. It is true to say that grammar is considered the fifth skill apart from four basic skills speaking, listening, reading, and writing. Grammar need to be taught when the students acquire a new language so that they can use the grammar item in writing, listening, and speaking as well. Therefore, grammar is regarded as a concrete foundation for mastering other skills. In general, it is important to have a good knowledge of grammar because it is hard to develop language skills without some knowledge of grammar. Teacher should help students to acquire grammar knowledge through meaningful contexts.

Foreign languages of grammar lost and grammar regained approach was withdrawn, Meiring and Norman (2001) reported a commonly held view among FL teachers that the place of grammar suffered due to its perceived opposition to 'communication'. From the mid-1990s onwards, a need to demonstrate improvements in examination results led policy makers to encourage a revival of descriptive grammar in both subject English and FL, and indeed in teacher education (Myhill, 2010). So identifying teachers' lack of knowledge about grammar and how to teach it as an area of great concern, and in the same year, a National Literacy Strategy (DfEE, 1998) was introduced to address the effective teaching of literacy in both subject English and FL. In subject of English, arguments in favour of contextualized ,descriptive grammar teaching (Hudson 2012b; Myhill and Jones 2011) led to the production of materials employing descriptive grammar for writing (Myhill et al. 2012) and for describing spoken language (DfE 2013d). By the time similar approaches were being developed to support explicit grammar teaching in MFL, the subject had been removed from the

compulsory secondary examination curriculum (DfES 2002; Turner 2001) and FL in England was suffering from negative socio-political perceptions as a 'difficult' subject with an unclear educational rationale (Williams 2001). There have been recent reassertions of the importance of grammar for ensuring both continuity in the FL syllabus and more clearly identifiable assessment criteria (Hudson 2012b; Planel 2008). Additionally, explicit attention to language 'form' has consistently been signalled in research as important for the development of second language communicative competence (Ellis 2010; Spada 2007).

2.4. Visual aids improve language knowledge

2.4.1. Visual aids provide assistance in learning new grammar

The importance of using visual aids in the English language classroom in terms of helping in grammar development, you can take combine the target grammar and new vocabulary. It is useful for students to understand the meaning. (Sehada & Amer, 2018)

2.4.2. Visual aids provide experience and fluency in English

It is clear throughout the visual aids that they provide the students with experience and fluency in English. When they see, they imagine what tense and structure of the grammar suitable in practicing. This gives them a chance for experiencing the language that can last in their life. When they last longer, they are able to gain ideas and that is it to be useful in producing the language through the correct tense or as well as grammar in use for communication.

2.4.3. Visual aids offer background information

In this regard, being exposed to visual aids in the English classroom helps students trigger their understanding and knowledge in the language. They give students general information about what they are going to study in the book. Moreover, visual aids help them to get a full idea about what they are talking about, and a good background about the lesson. Students get a general idea about the unit, and they are well-prepared. "Visual aids make the students have a background about the subjects and the students will be more active and more interested," as expressed in some researches.

2.4.4. Visual aids provide a motivating environment for the students to learn

Visual aids can help students express and utilize the language in the classrooms with motivation and encouragement in their learning. Visual aids are useful for sure because they make the students more excited to study the lesson. They make the class more fun so they can learn in more suitable environment in the class, and they relate to the lesson. This makes the class more interesting and enjoyable when seeing pictures and with activities in the lesson.

2.4.5. Visual aids help increase students' participation and confidence in the classroom.

By using the suitable visual aids, students may increase their abilities to feel confident in the language classroom and to participate. It is very fun for the students to have some move and active things in class and it is easy for them to exactly know about the subject and to be active with it as they are really bored from just talking in the class. They do not have enough space to talk in class and when watching it will be as if they are watching a movie or something like that, so silence would not be bad for that purpose. When students are interested in the lesson, they will be able to share and participate with teachers.

2.5. Practicality and satisfaction of visual aids

Some researchers focus on the useful ways for language learners to help them learn and practice language by employing technological aids (Ghorbani & Jahandar, 2015). Goodfellow and Laurillard (1994) states that through using visual aids, teachers need to do several things for effective language instruction in the classroom. The correct use of visual aids should help learners acquire new language e.g. vocabulary and grammar by promoting the deep processing of words and allow learners both to study and use the target language. Furthermore, by applying the correct techniques and meaningful visual aids, it should maximize the interaction between learners and teachers. Constantinescu (2007) suggested four teaching principles related to the best use of visual aids: (a) instructors should pay more attention to the existence of various teaching tools, (b) instructors should introduce multimedia-glossed texts into their vocabulary/ reading classes, (c) instructors should be acquainted with the criteria for evaluation, and (d) instructors should keep up with current methodology and make best use of visuals and multimedia. Visual tools provide students with exciting and innovative learning experiences (Ghorbani & Jahandar, 2015).

According to Cross (1991), visual aid with a simple picture on a piece of card or paper, which is probably the most widely used visual aids in language teaching. Flashcards are used for teaching prepositions, articles, sentence structures, tenses, and phrasal verbs (Palka, 1988). Thornbury (2002) states that pictures can help teachers demonstrate a simple sequence of activities to the learners and is considered as a useful strategy for new target item in lanugage learning. Moreover, teachers can also use pictures for drilling and presenting new language. The best advantage of pictures is that they can be taken almost anywhere and studied when one has a free moment (Brown, 2000). Some researchers (e.g., Mondria & Mondria-de Vries, 1994; Schmitt & Schmitt, 1995) found that working with pictures is more effective for language. Pictures are also found to be effective for increasing grammar knowledge, learning and motivation (Akın & Seferoğlu, 2004; Erten & Tekin, 2008; Genç, 2004; McCarten, 2007; Moras, 2001; Newton, 2001; Sinaei & Asadi, 2014). Nicholson (1998) also argues that using pictures in language learning can create joy and fun in the classrooms. On the other hand, McCullough (1995) criticized pictures learning as it stresses memorization over comprehension.

2.6. Self-efficacy and visual aids

Self-efficacy is what to reflect a person's judgment regarding his or her perceived capability in performing a given task and therefore is future-oriented (Bong and Skaalvik 2003). As is often the case of using visual aids in teaching and learning process, the degree of an individuals' self-efficacy is viewed to have an influence on learning outcomes (Graham 2006; Pajaras1996; Vuong, Brown-Welty, and Tracz2010). Self-efficacy is built from the creation of teacher's teaching techniques and teaching aids as one of the drives in motivation that assists L2 students in working hard and persisting to reach an L2 learning goal (Dörnyei 1994; Kormos, Kiddle, and Csizér 2011; Mills, Pajares, and Herron2007; Oxford and Shearin 1994; Pajaras 1996).

Some researchers have attempted to examine what they find difficulty in using the correct ways of infusing the language structure with the effect of using the correct teaching methods and materials, especially for improving self-efficacy and motivation (Kormos, Kiddle, and Csizér 2011; Ueki and Takeuchi2012). That is why one of the best ways of improving self-efficacy and motivation is using visual aids for language learners. For

example, Ueki and Takeuchi (2012) attempted to examine the internal structure of the L2 that interplays with motivation, anxiety, self-efficacy, and motivated learning behaviors.

Csizér (2011) offered a comprehensive model of internal language learning motivation based on the data collected from secondary pupils in Chile. Their study revealed that four factors of improving language learners' abilities – goals, affective reactions, self-guides, and self-efficacy – interact with each other. It also identified that self-efficacy is related to the amount of effort in joining activities and persistence learners put into L2 learning, or the motivated learning behavior and materials. However, the notion of self-efficacy in their study was only partly embedded in the questionnaire to gauge the ideal L2 self rather than self-efficacy as a separate construct, leaving the relationship between them unclear. In other words, the role of self-efficacy with regard to the two L2 motivational selves needs to be examined with a more concrete teaching aids as the way of linking the new lessons in the classroom.

2.7. The importance of visual aids

The importance is there in using visual aids in the help of pictures to make teachers and students to be well prepared in advance – this saves time in the lesson, especially if the text is long. The teachers can spend more time doing them carefully, using colors etc. They can be used again and again, with the same class, with different classes, by different teachers. They can be used for many different types of practice – whole class, pair work, group work; to practice different skills; for very controlled or freer activities. They attract the attention of students, and help them remember the language longer. According to (Audio-visual aids in teaching, 2010), there are different purposes and importance from designing and using visual aids in teaching. Using visual aids makes teaching and learning process effective and more concrete as the following:

- Visual aids have an instructional role in themselves.
- They motivate students and attract their attention.
- Saving time in the classroom.
- They provide realistic experience.
- They meet student's learning needs.
- They save time since they are easy to prepare.

2.8. Communicative and grammatical competence with visual aids

Gumperz and Hymes (1992) define communicative competence as "what language learners need to know to communicate effectively in culturally significant setting." (As cited in Paulston, 1992, p. 97). So using visual aids in teaching foreign language can connect students to link what they imagine and produce it out through communication. And then it becomes automatized and simplified rules in acquiring new language. Renandya and Richards (2002, p.206-208) state that mastering the language skill is a complex task because it requires more than learning the foreign language grammatical rules. However, students must know how to use the foreign language in different context of where the learners are taught and infused with the correct teaching methods and teaching aids. Based on Hymes's theory, Canale and Swain (1980) proposes a communicative competence model which consists of different components including: grammatical competence, discourse competence, sociolinguistic competence; in addition to strategic competence. Grammatical competence makes students use and understand English language fluently. It includes grammar rules (morphology, syntax), vocabulary, and mechanics (which refers to basic sounds of letters and syllables, pronunciation, and intonation). So for effective communication, students should know how to use these rules in order to convey meaning from seeing to thinking and producing the language.

2.9. Accuracy and fluency through visual aids

By using the correct visual aids in teaching grammar, learners will identify the correct use of new language items appropriately and actively because they are enjoyable. Hedge (2000, p54) mentions that as the ability to link the accuracy and fluency together with facility and without strain or inappropriate slowness, or undue hesitation''. Faerch, Haastrup, and Phillipson add accuracy and fluency as a result from a grammatical component of communicative competence and they make a distinction between it and strategic competence. They mention that strategic competence ''presupposes a lack of (accessible) knowledge"; however, "fluency covers speakers' ability to make use of whatever linguistic and pragmatic competence they have" (Faerch, Haastrup, and Phillipson, 1984, p.168). So fluency is the ability to link words and phrases, respond coherently in conversation, and clear sounds pronunciation with stress and intonation quickly. (As cited in Hedge, 2000, p.54) In short, accuracy and fluency proficiency consists of different elements which should be developed by the foreign language students since they may have any opportunities to communicate with each

after they are infused with the correct teaching methods and teaching aids. Furthermore, they acquire different knowledge in learning language for communicating appropriately with the correct context with form and use of grammar with visual aids. Most students show interest when teachers use visual aids in classroom especially if the task is creative and interesting. So from gaining using visual aids as the help of pictures in learning make students increase their language abilities and motivation.

2.10. Stages of using visual aids

Demirezen (1992, p.298) states that there are three stages which should be under the teacher's control before using any visual aids in the classroom: pre-task –the teacher should inform the students about what they will see in the pictures before giving them instructions according to the lesson objectives; main-task –in this stage, the teacher introduce the pictures for students to see and acquire the knowledge through extra explanation to the grammar lessons; and post-task –the teacher may ask students some questions for drilling or make discussion and practice the content of the lesson by building speaking or writing with accuracy and fluency. Coming along with the correct teaching techniques for each stage is an important aid which helps the teacher to motivate students and involve them to improve their speaking and writing abilities from the grammar item they are learning in the classroom. Harmer (2001, p.286) mentions a number of different teaching techniques which can be used in visual-based lessons. The visual aids with techniques are designed to "awaken the students' knowledge, curiosity, self-efficacy and satisfaction through prediction activities". So when they are able to see and use all visual aids with pictures, they will predict something about it.

2.11. The use of pictures

The student could remember much longer when seeing hearing. The use of the eye speeds up learning in all fields including language. Bumpass (1984:142) says that "The language must be based upon experience, and experience involves situations." As visual aids pictures provide both the situations which make the use of language possible and the subject on which language is used, they may be very successfully in teaching in all linguistic features. For example, in teaching pairs of sounds /i:/, /i/, /ei/ and /e/ and /ou/, it would help to let the students see the meaningful difference between these sounds in pictures. Also in teaching vocabulary, the use of pictures would reduce the necessity of using translation at the same time,

yield better learning through visual translation for example; house, tree, car, train, mouse, racket. On the other hand, in teaching grammar, pictures can be very useful in showing grammatical relation. Beside their use in the teaching of linguistic features, pictures may have other uses especially if they are properly and better used. They play a great role in developing students' artistic sense as well as their interest in reading. They could develop an understanding of different or foreign cultures, which cannot be done as in class by words alone. The spine series, the current syllabus that used at the governmental schools, illustrate the subject by very good pictures which are divided within the lessons.

If the teachers maximize these pictures, they will create good and attractive visual aids, to teach better lessons. 2.13. Kinds of Pictures: Bumpass (1984:143) says that "The term "Picture" includes several types of representation. The simple kind consists of illustration cut out from books, magazines and newspapers, photographs, color prints like drawings, these can easily be mounted and field under the proper subject". The head master of the school or the head of the department will have such a file in his office and will lend the materials to teachers as needed. Type number two is usually more colorful type of illustration- the posters- if the posters on display in the classroom have been selected with care; they will be referred to whenever the occasion arises. They should have value not only as if it an educational material, but also as artistic material. Essay (1932: 75) claims that "A smaller type of representation that can be used very successfully in the teaching of civilization is the pictures on postcards. The teacher may have built up a rich collection on the basic of his travels abroad" The best way to use them is to pass them around the class for individual pupils to look at them and examine. For the use in front of the class, the picture card is much too small.

2.11.1. Procedure of using pictures

Students should also follow their teacher's suggestions in using these aids such as:

(1) Preparation: We are surrounded by pictures, posters and signs of high technical quality. Magazines present a number of beautiful illustrations in colour.

(2) Presentation: Power of observation. Like those of listening must be trained. Many people are not fully aware of the importance of what they see or hear. Very few pictures need no explanation, the teacher is there to point out the important factors to stress and explain.

(3) Application: The information obtained should be applied. This can be done in number of ways, if the picture is used for purely linguistic aims, the new words and phrases should be used in original sentences. 2.13.2. Size of Pictures: - Essay (1932: 76) claims that a picture shown to the class must, of course, be fairly large that it can be seen by everyone. Small pictures, illustration and poster cards can be used for individual examinations. In this connection, the suggestion is made that such material is not sent around the room while the teacher is talking. It's better to have this done while there is a silence, the teacher may move around and comment to groups of students while they are looking at the material.

2.11.2. Ready-made pictures

Ready–made pictures, either made by the teacher or members of the class out of the school or even bought for the class teaching, or simply cut out of old magazines, can be divided into two types, there are intended and designed for teaching, and there are those used for decorating the classroom and giving a visual impr5ession of the country where the language is spoken.

2.11.3. The use of pictures for practicing the tense

One way to get plenty of practice of tense is to ask about what the people we can see in a picture are doing, have done will do and will have done in two-hours' time. Essay (1932: 77) claims that "A way that will turn all present tense into past tense is to roll up the picture. Pictures should be kept carefully and displayed neatly where they can be seen well. The pictures are easy to handle and store if they are mounted on large sheets of brown paper". There is no need to turn over the whole pile. Pictures printed in a book, especially if they are well drawn and brightly colored can contribute and use by the teacher and students without even copy them on posters or charts. Pictures are usually attractive and amusing students. Pictures can show details and create things as they almost they could be hung on walls. However, the disadvantages of pictures is that they are not able to develop listening skill –so made pictures decrease the ability of creating in the students and teachers as well.

2.12. The role of the teacher

The teachers have central role in using visual aids in introducing and explaining the lessons in classroom. Renandya and Richards (2002, p.362) state that "it is the teacher, not

visual aids themselves, who can make any picture-based lesson a fruitful language learning experience". Whereas, the teacher is responsible to choose the pictures and integrate it in the curriculum, design tasks and activities and makes his or her students' attention focuses on specific language points.

2.13. Teacher as a teaching aid

In addition to the different roles of the teacher in the classroom, he is considered as an essential teaching aid while giving instructions. First, using mime and gestures. The teacher could use mime and gestures to express different meaning while giving instruction to help students to understand. For example, fingers can be used to express contraction and arms to express repetition. Second, language model. The teacher could be as a language model, whereas, he/she can read stories for his students by using pictures for creating events more visibly and different accent in an exciting and interesting way. Finally, provider of comprehensible input. Teacher can give students different information with an easy language to facilitate understanding for them. So the teacher is an important visual aid because he could give students the same facilities as these tools do through gestures, mime and simple language (Harmer, 2001, p.64-66).

Using visual aids is very helpful in developing students' speaking and writing abilities, and the correct use of language item with the examples. Moreover, the different kinds of visual aids such as computer, internet, television or video, and pictures which could motivate students and create a relaxed classroom atmosphere for better learning. So these materials should be used appropriately to help students in language knowledge and motivation because they are the only way to expose them to the real use of the foreign language.

2.14. Teaching aids and methods

Bumpass (1984: 217) claims that "one of the basic principles of modern language teaching is that new language should come by a way of the ear first and then the eye, and when the teacher uses a number of the senses can make sense, impressions stronger and learning greater. The teacher who fails to relate the visual impression to the purpose sound will lose the signal "Hello" that can be derived from the power of association."

The teacher must present the new word first to the ear in order to force the development of the students' hearing ability, if the teacher presents the new words to the eye first, the students will learn it through sight and fail to develop the ear. If the teacher expects the students to learn the new words by using the ear only, he/she is not likely to get very good results, he/she must always accompany the oral presentation and drill by writing the words on the blackboard. By building up an association between the ear and eye, giving his students a much greater chance is to remember the new language. The English teacher may be helped by the school library; it provides him/her with a wide variety of visual aids for the classroom use. Teachers of English should discuss together their needs before attempting to build up a collection of visual aids. The library is a good position to acquire materials; the materials may be field according to the subject or according to classes. Materials could be started in boxes each one contains specific stage needs or materials. Teachers should work together to build up good subjects using the available materials. Bumpass (1984:129) says that materials such as pictures, maps and photographs (both in color or black and white) are very useful. Pictures cut from magazines may be combined in varied and attractive forms as in flash cards and posters. Sources of visual aids are numerous, pictures may be obtained from old books and magazines, literature from travel offices and from other sources, personal objects of little value which have historical importance are frequently found in the possession of students and the teacher. Various commercial companies are usually willing to give materials that will furniture many pictures.

In the step of choosing the suitable visual aids, it is very important to develop the bases which will enable the teacher to select and use the best aids available, the source claimed that "Each aid must make clear the purpose for which it is introduced. (Otherwise it may lead to confusion in the minds of the students). Bumpass (1984:132) says, "The aids must represent one point and only one point at a time, not a combination of several, thus it creates a clear impression, avoids confusion, and is likely to become a permanent part of the mental equipment of the learner." The aid must draw attention not to itself, but to the purpose for which it was intended, for example pictures or photographs that attract more attention to themselves than to the activity which they are explaining should seldom be used. The aid should tie in with previous experience, in this way, a minimum of explanation is needed and pupils move from one point to another. Most unsuccessful language learning is due to failure

of the imagination. One failure is the failure of the teacher's imagination to realize that words alone may not be enough to carry the pupil over into the situations, he/she is trying to bring students into another failure, the failure of the pupil's imagination to create situation in mind that the words are intended to build for them. Most of the teachers see the need for making use of visual aids in one form or another to help the pupil, through imagination, to an experience beyond the teaching the class. No enough teachers realize the need of using visual aids imaginatively; they use the objects and situations shown in a picture, film or other visual representation of reality as if they were the actual objects and situations. This is controlled by the experience of the teacher to create the best atmosphere and enable pupils to share in preparing the visual aids.

2.15. Teachers' attitudes towards visual aids in the language classrooms

A Case Study by María (2012) at Margarita Salas Secondary School (Majadahonda) examined the use of visual aids in the language classroom. It examined the reasons why teachers (particularly at Margarita Salas high school) use them rarely. It proved that visual aids must be integrated in the language classroom. This is due to the special effects they have on students. The results showed that teachers do not use visual aids as part of the everyday lesson because of the timing issues, and students are not content with this matter. The study recommended that the use of multimedia visuals as tools in the language classroom is extremely helpful for students and improves the learning process. Therefore, they should be included in the lessons.

2.16. The effects of visual aids on students' language skills

According to Ismaili (2013), visual aids help enhance students' communication skills. His study's sample consisted of two groups: an experimental and a control group. It was carried out at the South East European University in the academic year 2011/2012. The participants were pre-intermediate and intermediate level students. The results of the study showed that there are significant differences between experimental and control group of students concerning integrated skills. The study revealed that visual aids draw students' attention and present language in a more normal mode. Moreover, movies offer a visual setting which helps students understand and expand their learning skills. Hamdan (2015) explored the EFL Saudi university students' perceptions of the effect of video material on their listening skills. The

study sample consisted of 18 students. It used both qualitative and quantitative analysis. The results of quantitative analysis indicated that there were significant differences in the subjects' perceptions of integrating videos and audios to learn listening skill, in favor of videos utilization. The qualitative analysis revealed that students are more interested in learning through videos rather than audios. It means that seeing the materials for getting the language knowledge is more important and makes the students involve in the lesson.

2.17. Ineffectiveness and improper selection of the aids

According to Harmer (2001, p.283), for successful use of any visual aids such as videos or pictures in classroom, the teacher should be aware of certain potential problems. When the teacher decides to use them in the classroom, he/she should choose suitable activities which are designed for certain learning experiences. Also he/she should not just switch on the monitor for watching or seeing, but he/she should try to present them in an exciting way to attract students' attention.

2.17.1. Poor quality visual aids

If the teacher wants to use any visual aids, he/she should have to judge whether the quality is good enough to attract his/her student's interest and engagement or not. If the teacher can connect the pictures to the situations of which the lessons will talk about, the interesting illustrations are the hook to make students learn with better results.

2.17.2. Poor viewing conditions

Teachers have to be sure that all students can see what to show for the lesson, especially those at the back of the classroom. That's why visual aids should be big enough to make the pictures clear.

2.17.3. Display and explanation

The teacher should not display and explain constantly each time because it makes students frustrated and irritated especially if they could not know how the story ends. So if the teacher asks them to imagine the picture before explanation it is as a spur to creativity or prediction, so they have a chance to know the meaning of the pictures.

2.17.4. The variety of activities

The best option is to choose the different ways of displaying of the visual aids such as it could yield a number of exercises, demonstrate a satisfying range of language, easier to manipulate, and could be highly motivating. However, if the teacher needs to use a fixed style of teaching, it's hard to keep his students involved.

2.18. Critical problems

Shehada & Amer (2018) point out the first three of the English language learning classroom's most critical problems with comments on what might be done in dealing or managing each one.

2.18.1. Lack of learner's motivation

Students skip class, and when they do show up it's likely due to fear of failure more than anything else. They may lack any semblance of attention during class, chatting with classmates, doodling in their note books or, (gasp!) in their textbooks. What experienced English or other foreign language teaching professional hasn't faced the problem of reluctant, unmotivated learners? One key to increasing motivation is to use activities matched to the personalities, learning styles and characteristics of the learners as often as practically possible.

The problem of not motivated students, the lack of time for the processes of learning, and the excess of students in each classroom is structural in this society with the proper responsibility of the current government and the governments that have preceded the current, and does not just affect the teaching of English language, but affects almost all school subjects to be taught in both basic primary and secondary education and can be lower than in proportion to the university training. The point is that we must be part of the solution and not part of the problem. Lack of motivation, poor resources and over-crowed classes are undoubtedly some of the most critical problems that teachers have to face in our schools, not only to teach English, but also almost all the subjects. Lack of motivation may be the result of many factors as the way itself that subject is presented to them; most of the time students find the contents have nothing to do with the actual world. Many students feel that staying in school six hours a day, is a completely waste of time because subjects don't meet their wants or needs; on the other hand, most of the students don't have goals to achieve, they don't know where they want

to go then are teachers who must always be looking for methods and strategies to motivate and make learning challenger to get better results and one of them is to take in account the multiple intelligences to prepare activities. Peter (1964:118) claims that "About lack of resources, insufficient time and over-crowed groups, the responsibility is of our educational system but teachers have to use their creativity to overcome the problem. It was found so useful using practices of Dynet method as circuit training, choral and groups activities to work with either small or large courses and to get recourses with many strategies from taking the students toys until make the students prepare cards and posters that have been used before with other courses. There are many problems but there are many teachers trying to solve them.

2.18.2. Insufficient time, resources and materials

George (1978: 76) says that "A man can never be too rich, too thin or have enough English or foreign language vocabulary." So what can the teacher do when charge with teaching English or a foreign language in only one or two hours per week? One of the only times that was ever successfully accomplished was with the pouring out of Holy Spirit on the apostles during Pentecost". (Acts 2:1 – 11) Add too little time to a decided lack of resources and virtually zero other resources in many third-world classrooms and you have a critical teaching /learning situation indeed. But there are ways, even on the lowest budget, of producing virtually free or very inexpensive English language teaching and learning aids for use in the EFL or foreign language classroom.

2.19. Summary of the chapter

This section reveals the themes that resulted from the previous studies with the teachers' and students' perceptions and their benefits with main themes and subthemes towards using visual aids; firstly, it improves language knowledge. Visual aids provide assistance in learning new target items such as vocabulary and grammar as well as experience and fluency in English. Also, visual aids provide background information and assist in thinking and gaining knowledge. Second, visual aids increase the ability to imagine to focus and attract their attention. Third, visual aids provide variety in learning routine and move away from the traditional modes of leaning with motivating environment through variety in teaching methodologies. Fourth, retaining information: visual aids enhance the ability to understand and retain information. Fifth, developing language: visual aids help in enhancing the language

development. They help in enhancing the students' various skills such as interacting with speaking and writing skills through the target language, and help increase students' participation and confidence in the classroom. Sixth, managing time: visual aids save time and effort in passing the information to students. It can reduce teacher's explanation, instead the meaning can be absorbed faster.

Generally, students may reveal positive attitudes towards using visual aids in the English classroom. They may also reveal affirmative attitudes towards the usefulness of using the visual aids in their classrooms. Visual aids are very important tools because they facilitate both the learning and the teaching process. Moreover, they may provide exposure to students to get different information about grammar, intonation, vocabulary and pronunciation as well as they see how the teacher uses in introducing the new language. Furthermore, these aids motivate students and help them to understand as well as to perform well in practicing the new language effectively.

CHAPTER 3
RESEARCH METHODOLOGY

This chapter focuses on the detailed descriptions of the research methodology and the process of doing an action research. It shows the research paradigm, research design, research location, population and sample size, research instrument, data collection, and data analysis. In this part of the research is the field work to investigate the role of visual aids in enhancing the language ability in grammar and motivation. Pre- and post-questionnaires, and pre-, post- and delayed-post tests are administered to student teachers at BTEC. The main objectives of using questionnaires and tests is to get teachers' and students' opinions about teaching and learning grammar and their attitudes towards using visual aids to enhance students' language abilities and motivation.

3.2. Research paradigm

According to Kuhn (1962, as cited in Cohen, Manion & Morrison, 2018), a paradigm is a way of looking at or researching phenomena, a world view, a view of what counts as accepted or correct scientific knowledge or way of working as an 'accepted model or pattern'. It is a belief or set of principles to pursue knowledge, consensus on what problems to be investigated, and typical solutions to problems.

Pring (2015) mentions two different paradigms: the first paradigm is an objective reality which exists independent of the individual and comprises causally interacting elements with available observation. The the research is replicable and cumulative, i.e. a scientifically rooted body of knowledge can be gathered and checked for correspondence to the world as it is (the correspondence theory of truth). Such a view resonates with Hammersley's (2013) summary of quantitative research which is characterized by hypothesis testing, numerical data, 'procedural objectivity', and the generalized identification of 'systematic patterns of association' and the isolation and control of variables (pp. 10–11). The second paradigm, by contrast, espouses the view that the world consists of ideas, i.e. a social construction, and that researchers are part of the world which they are researching, that meanings are negotiated between participants (including the researcher), that an objective test of truth is replaced by a consensus theory of truth, that ideas of the world do not exist independently of those who hold them (i.e. require a redefinition of 'objective' and 'subjective'), that multiple realities exist

and that what is being researched is context- specific. Such a view accords with Hammersley's definition of qualitative research as that which uses less structured data, which emphasizes the central place of subjectivity in the research process and which studies 'a small number of naturally occurring cases in detail' using verbal rather than statistical analysis (Hammersley, 2013, p. 12).

According to Burns (2010), what is meant as a part of research paradigms by doing an action research (AR) in respectable and scientific methods, it can that link two different kinds of behavior – action and research. They can be together in AR through cycles of planning, action, observation and reflection that problematize (in a positive sense) issues, dilemmas or gaps in teaching situations. Although, time is a major practical hurdle, there are distinct benefits that make AR attractive to many teachers and make a difference in teaching professionals. The important steps and processes in AR contains such a strong notion of practical action and the idea of reflective teaching.

So, action research is a complicated mission to achieve. For that, the researcher needs to facilitate their process to find the reliable results for dealing with any issue which has been a subject of many studies. Such an issue in improving the students' learning abilities and motivation through visual materials will stimulate the greatest way of getting grammar knowledge. For this reason and in order to make the teaching and learning process in grammar module effective and easy, researcher focused on an action research using aids to attract the intention of students in learning new grammar.

3.3. Research method

In this research, the researcher uses action research method. As stated by Milis (2006:6), action research is any systematic inquiry conducted by the teacher, researchers, principals, school counsellors, or other stakeholder in teaching or learning environment to gather information about the ways that their particular school operates, how they teach, and how well their students learn. Stephen & Hopkins (1993: 44-45) state that action research is a form of self-reflective enquiry undertaken by participants in social (including education) situations in order to improve the rationality and justice of (a) their own social or educational practices, (b) their understanding of these practices, and (c) the situation in which the practices are carried out. It is most rationally empowering when undertaken by participants

collaboratively, though it is often undertaken by individuals, and sometimes in cooperation with outsiders.

Nunan (1992:18) metions that action research has a distinctive feature that is those affected by planned changes have their primary responsibility for deciding on courses of critically informed action which seems likely to lead improvement and for evaluating the results of strategies tried out in practice. In other hand, Burns (1999: 30) makes several characteristics of action research: (1) Action research is contextual, small – scale and localized. It identifies and investigates problem within a specific situation; (2) It is evaluating and reflective as it aims to bring about change and improvement in practice; (3) It is participatory as it provides for collaborative investigation by teams of colleagues, practitioners and researchers; (4) Changes in practice are based on the collaboration of information or data which provides the impetus for change.

From the definitions above, the researcher can conclude the characteristics of action research: Action research is carried out by practitioners and an evaluative and reflective process in its aim to bring about social and educational change and improvement in practice. The results of the research have direct application to real-world problems. Action research provides collaborative investigation by teams of colleagues, practitioners and researchers. The treatment and methods that are investigated are flexible.

The action research consists of several stages, planning, pre-research, and post research. In planning stage, the writer plans and prepares everything about the research. Pre-research is purposed to find out the data and gathering the information from the object and it is done before the writer comes to the real research. In the research, it is divided in to two cycles; they are first and second cycle. This research is written because using action research can enable the writer to find out a solution to the teaching problem. Action research encourages the writer to be a reflective in her own practice in order to develop the quality of the education for the teacher itself and for the pupils.

With the concept of Action Research Kemmis and Mc Taggart (1988) in Burns (1999:32) state that action research occurs through a dynamic and complementary process which consists of four fundamental steps in a spiraling process. They are as follows: (a)

Planning when the researcher develops a plan of critically action to improve what was already happening. The researcher makes lesson plan about certain topic, material, media, time, schedule and instrument for observation; (b) Action when the researcher acts to implement the activities written in the lesson plan; (c) Observing when the researcher observes the effects of the critically informed action in the context in which it occurs with process of the teaching learning; (d) Reflection when the result is analyzed and evaluated to make sense of processes, problems and issues in strategic action. If the researcher finds some difficulties unsolved during the teaching learning process, the researcher prepares the re-planning steps. The researcher reflects on these effects as the basis for further planning, subsequent critically inform action and so on, through a succession of stages. The researcher tries to formulate the conclusion of the previous steps.

3.3.1. Research location

The research was conducted at Battambang Teacher Education College (BTEC) in Battambang city, Battambang province, Cambodia. This selected location is the target of English language in higher education where the primary student teachers are trained in year 1 of 12+4 program. It is a classroom action research, which is aimed to implement the use of visual aids (pictures) to improve the students' knowledge and motivation in learning English grammar of the first year student teachers of 2018-2019 academic year.

3.3.2. Research design

According to Burns (2010), research design is a plan, structure and strategy of investigation in order to answer the research questions or problems. The plan is the complete process of the research that outlines what the researcher will do from hypotheses and their implications to the final analysis of data. For this study, the quantitative design was conducted to gather the data from students' perspectives and the effects of leaning grammar before, during, and after the lessons with visual aids. This research serves the important functions: (1) to detail the procedures for undertaking a study; and (2) to ensure its effect and chance on applying the new grammar teaching method with visual aids. The research design outlines the logistical details of the whole process of the research journey. Then it responds to the information collected and analyzed with rationale and justification and possibly reflects in the literature review (Kerlinger, 1986: 279 as cited in Shehada & Amer, 2018).

In this action research, the before-and-after design (also known as the pre-test/post-test design) is used so that it can measure change in a situation, phenomenon, issue, problem or attitude. It is the most appropriate design for measuring the impact or effectiveness of any variable of the study. A before-and-after design can be described as two sets of cross-sectional data collection points on the same population to find out the change in the phenomenon or variable(s) between two points in time. The change is measured by comparing the difference in the phenomenon or variable(s) before and after the intervention of teaching and learning grammar with visual aids.

```
┌─────────────────────────────────────────────────────────────┐
│              1. Researching on the main problem               │
│     In the previous research and the current situation        │
└─────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────┐
│                     2. Defining the topic                     │
│  'Effects of visual aids in learning grammar: An action       │
│   research on students' grammar learning with the help of     │
│   pictures'                                                   │
└─────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────┐
│                    3. Research Questions                      │
│  (1) Is students 'grammar learning facilitated by visual      │
│      aids?                                                    │
│  (2) If so, what are the reasons?                             │
└─────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────┐
│                     4. Data collection                        │
│                    Non-Random Sampling                        │
│                    To select 30 samples                       │
└─────────────────────────────────────────────────────────────┘
        │                     │                     │
        ▼                     │                     ▼
┌──────────────────────┐      │      ┌──────────────────────────┐
│  a. Secondary data   │      │      │     b. Primary data      │
│ Relevant resources   │      │      │ Pre- and post- survey    │
│ to the topic in softs│      │      │ (closed and opened       │
│ and hard copies      │      │      │ questionnaires); and     │
│                      │      │      │ pre-, post-, and         │
│                      │      │      │ delayed-post tests       │
└──────────────────────┘      │      └──────────────────────────┘
                              ▼
┌─────────────────────────────────────────────────────────────┐
│  (1) To examine the effectiveness of grammar teaching with    │
│      visual aids.                                             │
│  (2) To find out the reasons of the effectiveness of grammar  │
│      teaching that increase student teachers' grammatical     │
│      knowledge with accuracy in writing and fluency           │
│      speaking.                                                │
└─────────────────────────────────────────────────────────────┘
                              │
                              ▼
┌─────────────────────────────────────────────────────────────┐
│                      5. Data analysis                         │
│  Interpretation in percentage, frequency, categories, mean,   │
│  standard deviation, summaries                                │
└─────────────────────────────────────────────────────────────┘
```

3.3.3. Sampling and samples

This research was conducted with a class of 30 first year primary student teachers (10 males, 20 females) at Battambang Teacher Education College in the period of twelve weeks, 60-minute instruction lesson once a week, about 30-minute grammar teaching with visual aids (pictures). They were in mixed levels of students in learning English grammar even though they were in the same class of the study at BTEC.

3.3.4. Materials and instruments

There were 12 English grammar lessons and 5 sets of pictures for each lesson. For the pre- and post-surveys appeared as set of questionnaires consisting of 10 to 11 questions with the scale of rubric and checklist, and ending in the two open questions. Also, graphic organizers were used to classify the data with T-charts, Y-charts, Venn diagram for planning ideas. In addition to analyze the data more accurately with the reliable result of the study, Microsoft Excel program and SPSS were used to interpret the data in detailed graph and charts.

3.4. Data collection

The data was collected from two main types of primary (data) sources and secondary (data) sources for finding strong evidence in the research process and research result.

3.4.1. Primary data

The selection of primary data was from the respondents (student teachers) who involved in the grammar lessons. In the first week, the pre-survey and pre-test were given to student teachers at the beginning before the course started. The student teachers consent form was also provided to the students with some information about the study and they were given the opportunity to ask questions before their signing a consent form.

The collection of primary data took places at different times during the weeks with observation sheets. After the lessons were finished in the week 12, student teachers were asked to do post-survey and post-test immediately. Lastly, the delayed post-test was given for them to do after their vacation from school for about three months.

3.4.2. Secondary data

The selection of secondary data was collected from the previous sources such as the previous study related to the grammar teaching in term of national and international researches. The printed documents such as books, journals, and softs related to education were used to support the research background and rationale. Those educational documents were related to the teaching and learning grammar and visual aids that were really crucial for this research.

3.5. Data analysis

The researchers collected quantitative data from pre- and immediate post, and delayed post-tests given in order to measure their grammar knowledge through the context in textbook (Appendix A). It consists of sentence completion and written expressions. The researchers also designed pre-and post-surveys to gain motivation of the students' learning activities given before and after the period of the lessons (Appendixes B and C). In addition, the researchers asked for help from their colleagues to observe teaching activities through actual classes three times (60 minutes per lesson: 5 minutes for warm up, 10 minutes for discussion, 30 minutes for instruction and practice with pictures, 5 minutes for consolidation), video recording, and observation checklist (Appendix D).

The permission from the students were asked to help with the research in completing the surveys, and video recording about their learning activities (Appendix E). The data was collected to verify the usefulness to support the research questions. Responding to the first research question, the data primarily used to identify the differences between the pre-test, immediate post-test, and delayed post-test on students' knowledge with grammar. Furthermore, pre-survey and immediate post-survey are the key points for the study to support the first research question with reliability and validity. For the second research question, the data was analyzed for identifying the development of grammatical accuracy in speaking and writing with pre-survey and immediate post survey, students' free comments, and classroom observations.

3.6. Summary of the chapter

The study was conducted to find out the strong effects of applying teaching methods with the scientific research methodology in quantitative methods in the form of t-test methods for comparing how the learning result changed from one period to another period. The

knowledge tests were given periodically for the student teachers through pre-, post- and delayed tests as well as the pre- and post-survey were testified in regards of their motivation.

CHAPTER 4
ANALYSIS OF DATA AND RESEARCH FINDINS

The results of the study answered the research objectives and research questions focusing on two main categories of the grammar knowledge and motivation of using pictures as the help of learning English effectively. The study revealed the data analysis with clear evidence why students increased their grammar knowledge and what reasons made them learn better. Using the bar charts, tables, line graphs, and SPSS as assessment and measurement tools for analyzing the data and revealing the results of the study is as the following interpretation.

4.2. Finding according to the research questions

The findings are organized according to the research questions. The first research question, concerning what impact of using pictures in English grammar teaching encourages students to learn actively in the class, is addressed using the Likert scale of mean scores.

Table 1. Descriptive statistics for the whole sample across the pre-survey and post-survey (n=30)

Items	N	Pre-survey		Post-survey	
		M	SD	M	SD
Q1	30	2.73	.58	3.80	.48
Q2	30	2.20	.66	3.30	.59
Q3	30	2.40	.72	3.46	.81
Q4	30	2.36	.80	3.20	.92
Q5	30	2.23	.72	3.23	.81
Q6	30	2.36	.76	3.30	.83
Q7	30	2.16	.74	3.33	.66
Q8	30	3.40	.77	3.96	.49
Q9	30	4.23	.67	4.40	.62

* $P \leq 0.05$

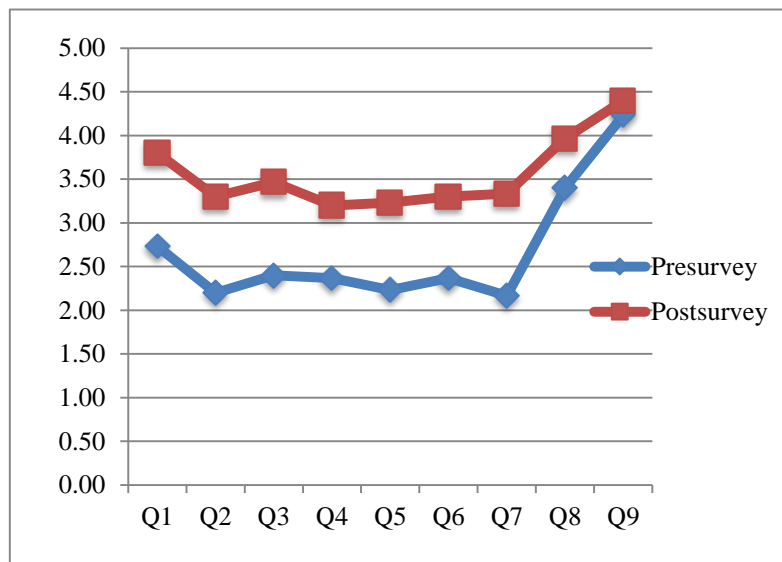**Students' perspectives on learning grammar**

Figure 1. *Whole sample across the pre-survey and post-survey*

There were 9 questions in pre- and post- surveys on student teachers' perspectives in learning English grammar with rated scales from 1 to 5 (see Appendix A). Pre-survey was conducted before the course started, and post-survey was conducted after the course ended. The scales refer to the following rubrics and corresponding expressions.

[1= Not at all agree with,   2= Slightly agree with, 3= Moderately agree with
 4= Very agree with, 5= Extremely agree with]

Table 1 provides the descriptive statistics of applying pictures to teaching grammar leads to more successful learning outcome. A number of 30 student teachers were selected as target sample, and they were asked to express their opinions about their background information on learning English grammar before and after conducting the lessons with using pictures. The results of the pre-survey scores of the groups are descriptively presented a positive change from the lower to higher levels of practicality, self-efficacy, and satisfaction in learning grammar as shown in Table 2, Table 3, and Table 4.

Table 2. Differences of pre-survey and post-survey by Independent-Sample *t* Test (N=30)

Practicality

Items	N	Pre-survey		Post-survey		*t*	P
		M	SD	M	SD		(value)
Q3	30	2.40	.72	3.46	.81	5.113	.000
Q4	30	2.36	.80	3.20	.92	3.403	.002
Q5	30	2.23	.72	3.23	.81	4.349	.000
Overall		2.33		3.30			

* P≤0.05

As displayed in table 2, all pairs of practicality –how much student teachers can understand and practice or express themselves with the use of grammar in speaking and writing. Their practicality increased from 2.33 to 3.30 that was almost the whole point. It is statistically significant at the 0.05 levels. One student commented that, "Learning grammar with pictures helped me a lot because I didn't feel bored and I liked to be actively practicing English with others in groups." Another theme that occurred, and was the second most frequently mentioned response when respondents elaborated with reasons in the space provided, was that respondents focused on opinions. In Q4 [I can write a sentence without grammatical errors.] (M=2.36, 3.20) and Q5 [I can speak without grammatical errors.] (M=2.23, 2.33) were asking about how much they can practice writing and speaking, most respondents said, "I wanted to use grammar correctly without any mistake. And after the lessons with pictures, it helped me like English. I can write few sentences better. I can answer some questions better." Another respondent stated, "I can learn better with real practice of the knowledge."

Table 3. Descriptive statistics for self-efficacy

Self-efficacy

Items	N	Pre-survey		Post-survey		*t*	P
		M	SD	M	SD		(value)
Q2	30	2.20	.66	3.30	.59	5.856	.000
Q6	30	2.36	.76	3.30	.83	4.474	.000
Q7	30	2.16	.74	3.33	.66	5.299	.000
Overall		2.24		3.31			

* P$\leq$0.05

In table 3, it shows the result of self-efficacy –the ability to complete a particular task, or more than that, it is the belief, or confidence about *what* student teachers can do with pictures as the helps of spoken or written expressions. Their self-efficacy increased from 2.24 to 3.31, which is more than the whole point. And it is really significant at p=.000. One student who was the very slow learner with knowledge test improvement commented that, "I can complete the task more correctly and faster now because I understand the lessons from learning grammar with pictures." In Q2 [I am successful in expressing myself without grammatical errors] (M=2.20, 3.30), Most students who had difficulty in leaning grammar turned confident with positive responses that, "I think learning with pictures is a better way. I can see the activities and it makes me convenient in constructing the correct sentences." In Q6 [I feel confident in writing English.] (M=2.36, 3.30), and Q7 [I feel confident in speaking English.] (M=2.16, 3.33), most respondents commented, "Learning grammar with pictures is useful to us to make sure that what pictures are talking about and it's easy to understand the contents." "If we don't have more pictures, we spend much time to understand." "Now I can improve my grammar subject well with my speaking and writing skills."

Table 4. Descriptive statistics for satisfaction

Satisfaction

Items	N	Pre-survey		Post-survey		t	P
		M	SD	M	SD		(value)
Pair Q1	30	2.73	.58	3.80	.48	6.728	.000
Pair Q8	30	3.40	.77	3.96	.49	3.458	.002
Pair Q9	30	4.23	.67	4.40	.62	.895	.378
Overall		3.45		4.05			

* P≤0.05

Table 4 revealed the result of satisfaction in learning grammar –how much students feel interested in or enjoy learning with using pictures as the helps of spoken or written expressions. Their satisfaction slightly increased from 3.45 to 4.04 that is just about the half point. It is not really significant where p=.375 of their result for the last question because their expectations from the beginning of the study and the end were still high. However, it was really significant at p≤0.05 for Q1 [I am active in learning grammar.] (M=2.73, 3.80) and Q8 [I enjoy learning grammar.] (M=3.40, 3.96). As an evidence, most respondents commented, "I think learning English grammar with using pictures is attractive, convenient to understand, and make me feel happy." By focusing on their real expressions in learning with pictures as a motivation to learners, one respondent said, "By learning grammar with pictures, I think it can help me to learn grammar because when I learn it, it makes me active and practice more." "Now I can improve my grammar subject well with my speaking and writing skills." Moreover, one student mentioned, " I think learning grammar with pictures is good for students because it is easy to understand about grammar clearly, especially we can have good feeling and happy." And one respondent said, "Learning this way helps me understand the grammar better because all students are active in learning and working in groups. It creates happy environment and strong relationship in the class."

Figure 5. Descriptive statistics for students' perspectives
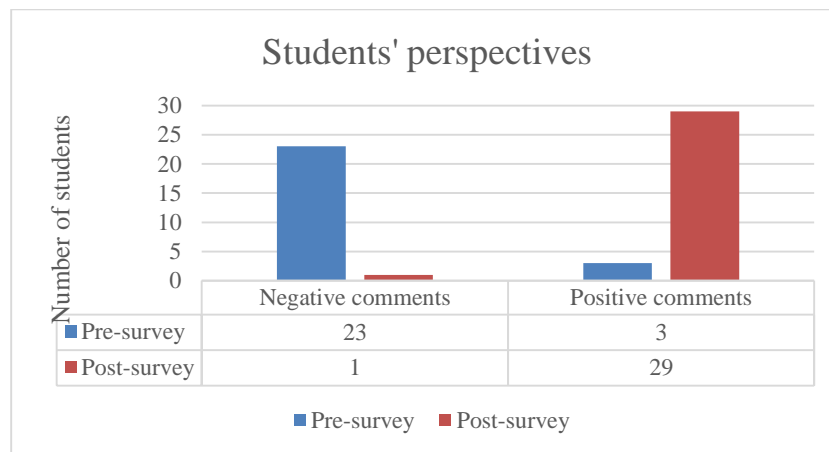
As shown in Figure 5, it resulted in students' perspectives from free comments of positives and negatives had been improved significantly in the large numbers of satisfaction in learning. The negative comments decreased from 23 to 1 while positive comments increased dramatically from 7 to 29.

Table 5. Descriptive statistics for the whole sample across the pre-test, immediate post-test, and delayed post-test (n=30)

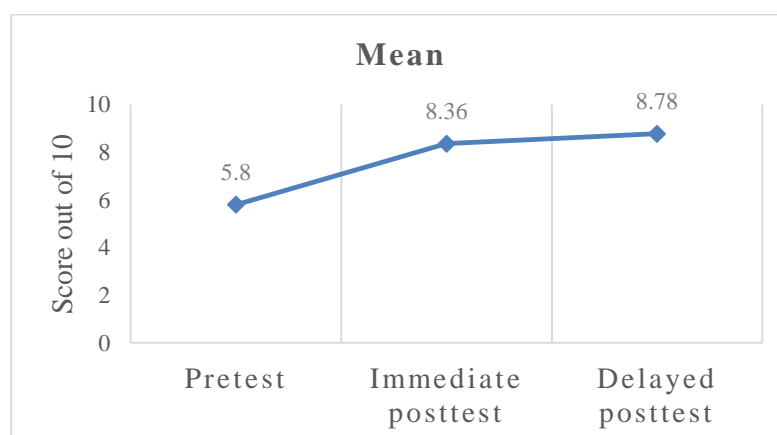|			Knowledge Tests				
Items		Pre-test		Immediate Post-test		Delayed post-test	
	N	M	SD	M	SD	M	SD
Knowledge Tests	30	5.80	1.18	8.36	1.24	8.78	1.70

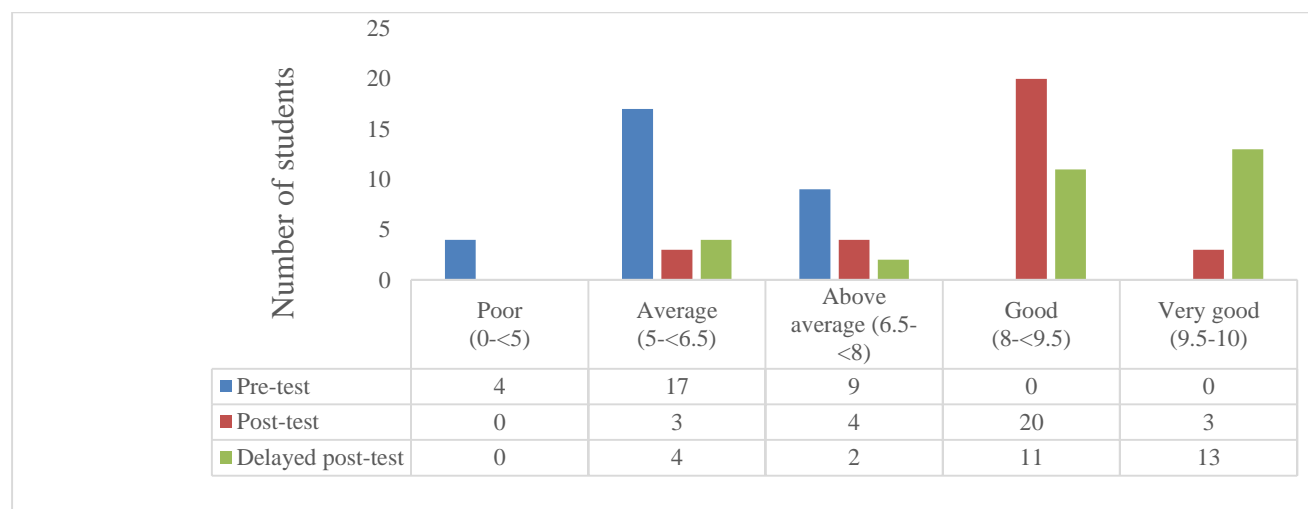*Figure 6. Whole sample across the pre-test, post-test, and delayed post-test*

As expected, it is clear from Table 5 and Figure 6 that the student teachers made better gains in their knowledge tests from pre-test, immediate post-test, and delayed post-test. The study found that the students improved their knowledge tests in written (and spoken as well) expressions through using pictures in learning grammar after twelve weeks. Their knowledge tests had big gaps between pre-test to post-test and delayed post-test from 5.80 to 8.36 and 8.78. It resulted in one way repeated ANOVA with significant differences between pre-test and post-test, and delayed post-test (pre<post, delayed post) with a large effect size of F (2, 58) = 117.818, p = .000, n2= .48.

Table 6. Descriptive statistics for the whole sample across the pre-test, immediate post-test, and delayed post-test (n=30)

Items	N	Minimum	Maximum
Knowledge pre-test	30	2.00	7.00
Knowledge immediate post-test	30	5.00	10.00
Knowledge delayed Post-test	30	5.00	10.00
Valid N (Listwise)	30		
Gains from pre- to immediate post-tests		3.00	3.00
Gains from pre- to delayed post-tests		3.00	3.00
Gains from immediate post- to delayed post-tests		0.00	0.00

Table 6 presents the gaps of scores students teachers made better gains in their knowledge tests from pre-test, immediate post-test, and delayed post-test. Their scores increased 3 points higher in both minimum and maximum ranges from pre- to immediate and delayed post-tests. However, their knowledge tests were not different for the both minimum and maximum ranges from immediate to delayed post-tests. It confirms that improvement in knowledge is possible with learning grammar by using pictures as motivations in written and spoken expressions. As shown, all students got better result with higher scores (more than average) with their knowledge tests than earlier period.

Figure 7. The sample frequency distribution across the pre-test, post-test, and delayed post-test (n=30)

	Poor (0-<5)	Average (5-<6.5)	Above average (6.5-<8)	Good (8-<9.5)	Very good (9.5-10)
Pre-test	4	17	9	0	0
Post-test	0	3	4	20	3
Delayed post-test	0	4	2	11	13

As seen in Figure 7, the number of students with poor grade decreased to none from pre- test to immediate and delayed post-tests. The test results also significantly increased in large number of students from none to better grades of 'Good' and 'Very good' comparing between the pre-test to immediate and delayed post-tests. It indicated that learning grammar with pictures were durable over the period of time.

Figure 8. The teacher's techniques in using pictures

Teacher techniques of using pictures	Q1	Q2	Q3
	4.33	4.66	4.33
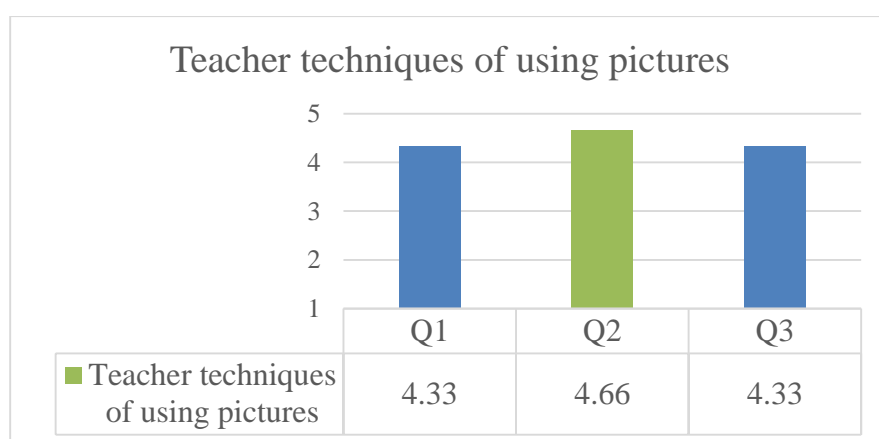
In Figure 8, it shows positive ways that the teacher used techniques in teaching grammar lessons by using pictures to motivate students learn better. In Q1 [Teacher adds

pictures to explain the target grammar.], Q2 [Teacher drills the target grammar by using pictures.], and Q3 [The teacher motivates students to learn the target grammar by using pictures.], it evidently revealed that the techniques affected how students learned grammar with pictures. This results were significant observed from other teacher in which the most rating scales were over 4.00 levels of agreement. One observer commented that, "techniques of using pictures in teaching grammar was appropriate to learners." "The teacher used pictures to elicit the target grammar and let students imagine, and students can understand what grammar the pictures present and they can write and speak confidently."

Figure 9. The participation in the lessons with pictures

Participation in the lessons	Q1	Q2	Q3	Q4
Participation in the lessons	5	4	4	4
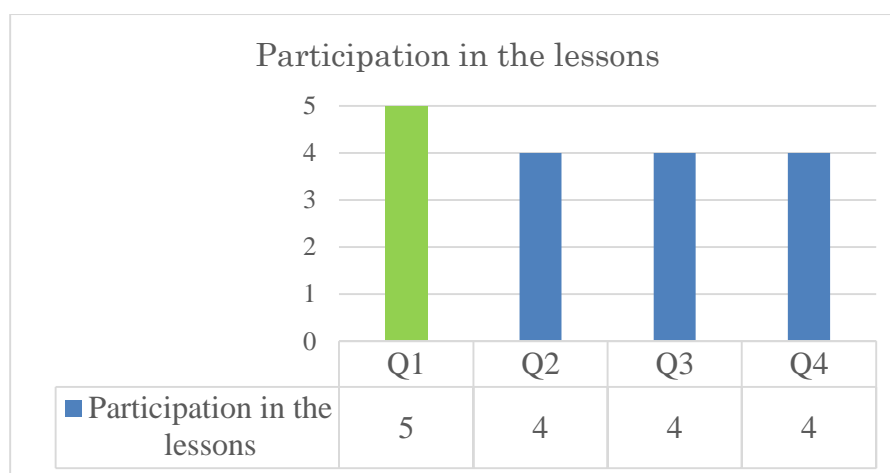
In Figure 9, it presents that the students enjoyed grammar lessons actively through pictures. In Q1 [Students involve actively in learning the target grammar by using pictures.], Q2 [Students can speak more accurately with the target grammar.], Q3 [Students can complete written task with the target grammar correctly.], and Q4 [Students personalize the target grammar in learning.], it highlighted how much students got involved in the lesson. This results were significant observed by other teachers in which the rating scales were more than 4.00 levels of agreement. One observer commented that, "Students are very enthusiastic to learn grammar with pictures. They are motivated to speak and write." Another observer mentioned that, "Students enjoy sharing ideas in pair work and group work actively."

Figure 10. The quality of the pictures relevant to the lessons

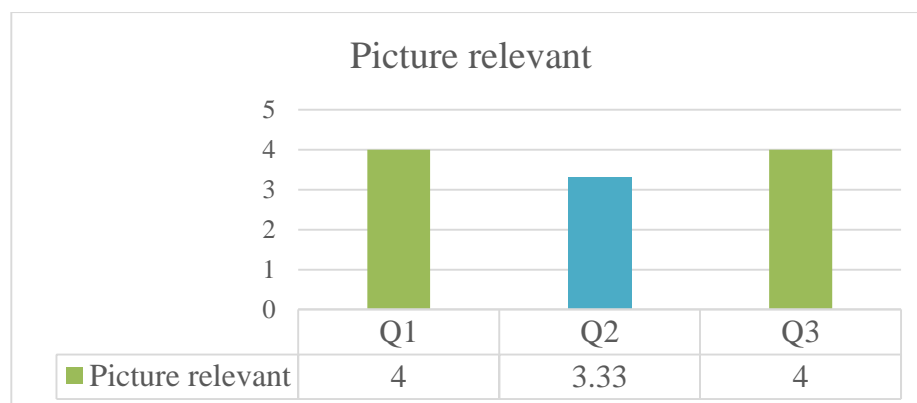| Picture relevant	Q1	Q2	Q3
Picture relevant	4	3.33	4

Figure 10, it presents how much the pictures and the contents are relevant in using pictures for grammar lessons. In Q1 [Pictures are relevant to the target grammar.], Q2 [Pictures are big enough for students.], and Q3 [Pictures make the language more real and alive.], it was observed with higher levels of agreement at 4.00 that the pictures were effectively connected to the target grammar and pictures motivated students to communicate with other. As one observer comments that, "Students can share ideas with meaningful practice among each other by using their imagination from the pictures through written and spoken expressions."

4.3. Summary of the chapter

The study was conducted to investigate (1) how effective visual aids can help students learn grammar better by using the pre-test, immediate post-test, and delayed post-test to determine whether there were differences in the treatment of pictures in grammar lessons, (2) how visual aids can help students improve their motivation from the points of practicality, self-efficacy, and satisfaction in learning grammar.

With respect to the first aim of the study it was found in the immediate post-test that learning grammar with visual aids (pictures) had a significant effect in helping students gain knowledge that they could improve their accuracy in writing and fluency in speaking practice. Furthermore, concerning with their knowledge, the delayed post-test was repeated to the students in order to check whether they exist their knowledge longer with grammar lessons or not. As the result of the delayed post-test, they still retained better knowledge of what they had learned with the grammar lessons (see Table 5, Table 6, and Table 7).

For the second aim, the findings of this study offer positive support for the reasons why visual aids (pictures) can motivate student learn grammar more effectively with significant evidence of practicality, self-efficacy, and satisfaction from the pre-survey and post-survey (see Table 2, Table 3, and Table 4). Furthermore, from the teacher observations, there is a vital evidence from what the teaching support with the effective techniques and how to illustrate the pictures for scaffolding the grammar lessons to students (see Figure 8, Figure 9, and Figure 10).

CHAPTER 5
DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

This chapter discusses the findings of the study with the previous studies, the implications, and recommendations. For the discussion, it aims to reflect with the previous theories and the study in this research for improving the effects of teaching and learning grammar visual aids as the help of pictures. For the implications, the study aims to have influence to other people and sectors that involve in education, especially in teaching materials development for increasing interests in learning English grammar. The last one is to provide the further support to help find the better ways on students learning English grammar at schools.

5.2. Discussion from major findings

The result of the pretest and posttest showed that there was an improvement in the vocabulary knowledge after learning grammar via visual aids like pictures. The results also showed that pictures were the most effective instrument for learning English, which can be related to the fact that pictures could increase the learners' motivation more than before. This finding was in line with Yang (2013) who carried out a research in which the students learnt the idioms by using visuals to find the meaning, pronunciation, definition, and visual illustration. Additionally, comparing the pretest and posttest of grammar knowledge in the pictures, the result showed that they had a positive effect on students' grammar learning. Picture was found to have a better effect grammar learning than explanation with translation method. This finding is in line with that of some studies (e.g., Akın & Seferoğlu, 2004; Erten & Tekin, 2008; Genç, 2004; McCarten, 2007; Moras, 2001; Newton, 2001; Sinaei & Asadi, 2014), which reported the positive impact of visual aids using pictures for grammar learning. Comparing the grammar pre-test, immediate test, and post-test of learners, this study confirmed the effectiveness of the pictures on the students' grammar learning. This finding is similar to that of studies by Li and Erben (2007), Lu (2008), Thornton and Houser (2005), and Zhang et al. (2011). Results of the current study also showed that students had a positive attitude towards using visual aids. This finding is in line with that of Stockwell (2008) who reported that the students in his study adopted positive attitudes towards visual learning. In addition, students gave some comments that provided further insights into their experience in using pictures for grammar learning. Some students noted that pictures motivated them to learn the grammar and that learning with grammar was easier than the translation method. Most of the students believed that pictures had a positive effect on grammar learning. However, some had negative attitudes towards using pictures. It can be related to the fact that pictures could not totally replace some lessons in English classrooms with teacher's explanation. It can also be due to the technical problems and quality of the pictures, or the various meanings can be difficult to identify the specific grammar. In the lesson with visual aids, one

student mentioned that grammar learning with pictures was effective, but it would not be sufficient on its own and should be used with the other methods. Most of the students believed that pictures are effective in grammar learning. However, some students mentioned the negative aspects of using pictures including the issue that they could be confused and hard for some lesson related tenses.

The study found that the student teachers improved their accuracy in writing and fluency in speaking English through using the pictures after the twelve weeks. The students obviously increased grammatical knowledge through the treatment sessions and the immediate post-test and delayed post-test (see Table 5, Table 6, and Table 7). These findings corroborate those several earlier studies that discovered pictures as the help of learning grammar and effective instrument (Gibson & Richards, 2005), and therefore provide further evidence to the importance of using pictures in learning grammar had positive effect on oral and written input (Richard R., 2004).

The findings from the study also revealed that the student teachers had improved their English practicality, self-efficacy, and satisfaction through the pre-survey and post-survey about how they expressed their personal opinions in learning grammar without pictures and with pictures (see Table 2, Table 3, and Table 4). It was also revealed in the teacher observation that learning grammar with pictures had positive effects on teaching techniques, students' participations, and the displays of the pictures (see Figure 8, Figure 9, and Figure 10). These findings were compatible with the previous studies about how course materials could be transformed into pictures or real images and less boring to students in getting involved in the lessons effectively with motivation (G.S. NG, 1996), and by using pictures in practice, it can facilitate accuracy and fluency in students (Ellis, 2002; Richards, 2004).

Even though, the findings of this study provide positive effects on grammar knowledge improvement and motivation of the visual aids (pictures), the study was still needed more extension to investigate the application of this teaching method to another comparison group. One more thing, there was a small sample size for the study that it was conducted with only a class of thirty students. For the duration, it should be longer than twelve weeks for the treatment with visual aids (pictures) in more contents of the grammar lessons.

5.3. Implications of the study

The effects of this study have provided crucial implications of changes to the lecturer to become an experienced practitioner and researcher because not many Cambodian teachers have researching culture for improving their professional development as it has been a fixed mindset for a long time in their teaching. Regarding to the BTEC's visions, doing action research is one of pillars

of researching culture for being a competent teacher educator. So, resulting from an action research, it influences on professional development, professional knowledge, professional practice, and multi-disciplinary changes in addition to teaching responsibility.

From the study, the researcher will conduct repeated action research, and it does not only help improve the internal work at BTEC, but it will expand to other educational institutions, too. The researcher will share ideas and findings through presentation about the action research as a part of lesson study to a teacher's community and professional learning community.

5.3.1. Implication for the student teachers

Regarding to the findings of the study, implications are implied for the student teachers at BTEC to increase their strong efforts in studying hard with motivation and satisfactions in learning English. It provides the strong knowledge ability to use the language correctly and understandably through visualization and practicality. It helps increase their commitment in grasping the knowledge through learning and applying it in the appropriate situation and communication skills of using the language.

5.3.2. Practical implication for the school

Responding to the findings of the study at BTEC, it indicates how the researcher in this school takes a role model in applying the useful teaching method variety including the visual aids as a try for helping the students learn English grammar better. So, this study can help promote the awareness of an action research for internal and external educational institutions. It implies that teaching is not enough for being a lecturer at one school, but professional development has to be continuous through a research.

5.3.3. Practical implication for MoEYS

The findings of the study have implication for MoEYS: (1) to promote the research awareness as the help to teachers to improve their teaching; (2) to contribute to the teacher educator or lecture as professionals to cooperate with others as a lesson study about any educational issues and find the best way to address the problem in their teaching through any research.

5.4. Recommendations

First, the researcher recommends the school and the Ministry of Education to make the use of visual aids as a mandatory part of explaining language-related courses, especially English grammar. This does not mean that teachers have to use visual aids in every class. However, if they have English grammar class 2 or 3 times a week, at least two of these classes should be explained

with the help of visual aids whether it was audio-visual, PowerPoint slides, pictures, charts and graphs. Second, the researcher recommends textbook authors and publishers to provide more visual aids with their books that contains educational pictures related to the syllabus, or visual games to practice in the grammar lessons. In this way, if the learner is having difficulty reading the important content of the book, this picture will help the learner to expand in the learning process. Finally, the researcher recommends students to try their effort in learning grammar with visual aids as the help of pictures for improving their knowledge and motivation in learning with clear understanding the content of lessons.

5.5. Limitation and suggestion for the future research

This research had two limitations, which are the limited number of participants and time. This research focused exclusively on students' knowledge ability and their motivation or satisfaction. Therefore, the number of participants was limited to only 30 participants. The study would have more solid grounds in the findings if the number of participants was more than 30 students. The other limitation that the researcher faced was regarding the time. Due to the limited time, it lasted only twelve weeks of the lessons because it is a kind of real practice in addressing the problems in the action research. Moreover, comparison group should be involved in the action research if the researcher repeats the action research again for further improvement of the teaching methods visual aids of using pictures as the help of learning English grammar.

5.6. Conclusion

The purpose of this study was to investigate whether there was any significant difference among the effects of pictures in EFL learners' grammar knowledge. In addition, this study aimed to examine the attitude of the learners towards receiving grammar instruction via these tools. The results of the study revealed that pictures were found to be useful for students learning and can be applied in the language classes as the valuable tools for grammar learning. Although these instruments could be regarded as a viable medium for teaching and learning English grammar, we should not ignore the inherent functional constraints of the true value of the conventional classroom learning (Hayati, 2009). Materials developers and language teachers can visualize the aids as supplement to language learning that traditional textbooks and paper materials cannot. Teachers can use these instruments in English institutes, schools, or even in the university to improve students' grammar learning. These instruments can add to the educational setting as effective supplemental tools for grammar learning. Finding out how the students feel about learning grammar with visual aids (pictures) can encourage language teachers to explore the features of pictures to improve the effectiveness of language learning

and teaching. This study examined the impact of grammar learning via pictures on the attitude of EFL learners.

To conclude, students' opinions on the tools used during their English lectures is the very first step to achieve successful learning. If English teachers use a technique that does not facilitate the students with the opportunities to communicate, take notes, activate their observation skills, or even feel like learning is a fun activity, then learning will not take place successfully. According to the students' responses, visual aids seem to be beneficial for them during English lectures. In addition, the use of visual aids has a positive effect on retaining and retrieving information, which is the ultimate goal during the lecture. The results of this study showed that students had a positive attitude toward the use of visual aids, which answered the second research question about the students' attitude.

References:

Akin, A., & Seferoglu, G. (2004). Improving learners‟ vocabulary through strategy training and recycling the target words. *Hacettepe University Journal of Education*, 27, 1-10.

Asian Development Bank. (1996, 20 June). *ADB approves US $20 million Basic Education Textbook Project loan to Cambodia (News Release No. 070196)*. Manila: Author.

Baleghizadeh, S., & Ashoori, A. (2011). The impact of two instructional techniques on EFL learners' vocabulary knowledge: Flash cards versus word lists. *Mextesol Journal*, 35(2), 1-9.

Bong, Mimi, and Einar, M. S. (2003). "Academic Self-Concept and Self-Efficacy: How Different Are They Really?" *Educational Psychology Review* 15 (1): 1–40.

Brown, H. D. (2000). *Principles of language learning and teaching*. New York: Longman.

Burns, A. (1999). *Collaborative action research for English language teachers*. Cambridge: Cambridge University Press.

Burns, A. (2010). *Doing action research in English language teaching: a guide for practitioner*. New York: Routledge Taylor and Francis Group.

Cline. (1938). *School use of visual aids.* Washington: Office of Education.

Clark, P., Vicki, L., & Creswell, J. W. (2009). *Understanding Research: A Consumer's Guide*. Melbourne: Pearson (Merrill).

Clayton, Thomas. (1998). Building the new Cambodia: Educational destruction and construction under the Khmer Rouge, 1975-1979. *Histoty of Education Quarterly*, 38, 1-16.

Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education (8th ed.).* NY: Routledge.

Constantinescu, A. I. (2007). Using technology to assist in vocabulary acquisition and reading comprehension. *The Internet TESL Journal*, 13(2), 34-43.

Crichton J., Koster P. . (2015). *English made it easy: learning English through picture* (Vol. Volume 1). Tokyo: Tuttle Publishing Yaekari Building.

Cross, D. (1991). *A practical handbook of language teaching*. London: Cassel.

Csizér, K., and Judit, K. (2009). *"learning experiences, selves and motivated learning behaviour: a comparative analysis of structural models for hungarian secondary and university learners of English." in motivation, language identity and the L2 Self, edited by Zoltán Dörnyei, and Ema Ushioda, 98–119*. Bristol: Multilingual Matters.

Demirezen, M. (1992). *Video, language teaching and the language teacher*.

DfE (2013a). *consultation report disapplication of aspects of the existing national curriculum from september 2013*. London: Crown.

DfE (2013b). *National curriculum in england: languages programmes of study*. London: Crown.

DfE (2013c). *Research and analysis. European survey on language competences: language proficiency.* London: Crown.

DfE (2013d). *Statutory guidance. National curriculum in England: English programmes of study*. London: Crown.

DfE (2014). *Research and analysis. Assessment, curriculum and qualifications: research priorities and questions*. London: Crown.

DfEE (1998). *The national literacy strategy*. London: HMSO.

DfES (2002). *Extending opportunities, raising standards*. London: DfES.

Dörnyei, Z. (1994). "Motivation and motivating in the foreign language classroom." *Modern language journal* 78 (3): 273–284.

Dignen, S. (2017). *Visual guide to grammar and punctuation.* New York: DK Publishing.

Dörnyei, Z. (2005). *The psychology of the language learner: individual differences in second language acquisition*. NJ: Lawrence Erlbaum.

Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford, UK: Oxford University Press.

Dörnyei, Z. (2009). *"The L2 motivational self-system." In motivation, language identity and the L2 Self, edited by Zoltán Dörnyei, and Ema Ushioda, 9–42*. Bristol: Multilingual Matters.

Doyé, P. (2005). *Intercomprehension. guide for the development of language education policies in Europe*. Strasbourg: Council of Europe.

Education Research Council (2017). Cambodian Education Council. *Cambodian Education Review, 1*(1), 111-116.

Eliot, E. (1932). *Traditional and the individual talent*. New York: Harcourt Brace.

Ellis, N. (2002). Frequency effects in language processing: a review with implications for theories of implicit and explicit language acquisition. *studies in second language acquisition*, 24(2), 143-188.

Ellis, R. (2002). The place of grammar instruction in the second/foreign language Curriculum InHinkel, E., &Fotos, F. (Eds.), *New perspectives on grammar teaching insecond language classrooms* (pp. 17–34). Mahwah, New Jersey: Lawrence Erlbaum Associates

Ellis, R. 2010. *Explicit form-focused instruction and second language acquisition. In The Handbook of Educational Linguistics, ed*. B. Spolsky and F.M. Hult, 437–55. Chichester: Wiley-Blackwell.

Erten, İ. H., & Tekin, M. (2008). *Effects on vocabulary acquisition of presenting new words in semantic sets versus semantically unrelated sets*. System, 36, 407-422.

Fay, L. & Bumpass (1984). *Visual aids.*

Genç, B. (2004). *New trends in teaching and learning vocabulary*. Çukurova Üniversitesi Sosyal
　　　Bilimler Enstitüsü Dergisi, 13(2), 117-126.

George Y. (1978). *The study of language*. Cambridge: Cambridge University Press.

Ghanbari, N., Shamsoddini, M. R., & Radmehr, A. (2015). The effect of CALL on vocabulary
　　　learning and reading comprehension of Iranian EFL learners. *Journal of Research &
　　　Method in Education*, 5(4), 95-103.

Graham, S. (2006). "A study of students' metacognitive beliefs about foreign language study and
　　　their impact on learning." *Foreign language annals* 39 (2): 296–309.

Goodfellow, R., & Laurillard, D. (1994). *Modeling learning processes in lexical CALL. CALICO
　　　Journal*, 11(3), 19-46.

Griva, E., Semoglou, K., & Geladari, A. (2010). Early foreign language learning: implementation
　　　of a project in a game-based context. *Procedia social and behavioral sciences*, 2(2), 3700-
　　　3705.

Hamdan, M. H. (2015). The perceptions of Saudi EFL English-major students of the impact of
　　　video materials on the improvement the listening skill. *International journal of linguistics
　　　7(1)*. pp111-128. Retrieved from: www.macrothink.org/journal/index.php/ijl/article/.../71
　　　96/pdf_158 10.

Harmer, J. (1987). *Teaching and learning grammar*. Longman Group UK Ltd.

Harmer, J. (1998). *How to teach English*. England: Longman.

Harmer, J. (2001). *The practice of English teaching*. Longman: Pearson education.

Harmer, J. (2007). *The practice of English language teaching (4th Ed.)*. Edinburgh: Pearson
　　　Education Limited.

Hayati, A. M. (2009). M-learning. *English Teaching Professional*, *64*, 56-58.

Hedge, T. (2000). *Teaching and learning in the language classroom*. Oxford: Oxford University
　　　press.

Horwitz, E. K., & Horwitz, B. M. (1986). Foreign language classroom anxiety. *The modern
　　　language journal*. Vol.70, No.2.

Hudson, R. (2012a). *Why education needs linguistics (and vice versa)*. Dick Hudson.
　　　http://dickhudson. com/wp-content/uploads/2013/07/edlgx.doc (accessed 17 May, 2013).

Hudson, R. (2012b). Why teach grammar? *Teaching grammar*. http://teach-
　　　grammar.com/?page_id=79 (accessed 17 May, 2013).

Ismaili, M.A. (2013). The Effectiveness of using movies in the EFL Classroom – a study conducted
　　　at South East European University. *Academic journal of interdisciplinary studies* 2(4). pp.

121-132. Retrieved from: http://www.mcser.org/journal/index.php/ajis/article/vie wFile/114/270.

JICA's Annual report (2018). Retrieved on January 08, 2019. https://www.jica.go.jp/english/publications/reports/annual/2018

Kerlinger, & Fred N. (1979). *Behavioral research: a conceptual approach*. Sydney: Holt, Rinehart and Winston.

Kerlinger, Fred N. (1986). *Foundations of behavioral research (3rd ed.)*. New York: Holt, Rinehart and Winston.

Kormos, J., & Csizér, K. (2008). "Age-related differences in the motivation of learning English as a foreign language: attitudes, selves, and motivated learning behavior." *Language learning 58 (2)*: 327–355.

Kormos, J., Kiddle T., & Csizér K. (2011). "Systems of goals, attitudes and self-related beliefs in second language learning motivation." *Applied linguistics 32 (5)*: 1–23.

Larsen & Freeman, D. (1986). *Techniques and principles in language teaching*. Oxford: Oxford University Press.

Li. J., & Erben. T. (2007). Intercultural learning via instant messenger interaction. *CALICO Journal*, 24(2), 291-231.

Lu, M. (2008). Effectiveness of vocabulary learning via mobile phone. *Journal of Computer.*

Luong, B. H. (2009). *The application of games in grammar review lessons for sixth graders*. HCM city: M.A thesis at the University of Social Sciences and Humanities, Vietnam National University-HCM City.

María, R. (2012). *Usage of multimedia visual aids in the English language classroom: a case study at Margarita Salas secondary school* (Majadahonda) (master's thesis).pp.1-85. Retrieved from: https://www.ucm.es/data/cont/docs/119-2015-03-17- MariaRamirezGarcia2013.pdf.

Mathew, N. G., & Alidmat, A. O. H. (2013). A Study on the Usefulness of Audio-Visual Aids in EFL Classroom: Implications for Effective Instruction. *International Journal of Higher Education, 2*(2), 86-92.

McCarten, J. (2007). *Teaching vocabulary: lessons from the corpus*. Cambridge: Cambridge University Press.

McCullough, C. (1955). *Flash cards-The opiate of the reading program? Elementary English*, 32, 379-381.

Meiring, L., & Norman, N. (2001). Grammar in MFL teaching revisited. *The language learning journal 23*, no. 1: 58–66. http://www.informaworld.com/10.1080/09571730185200101 (accessed 23 April, 2019).

Mignot, P. (2000). *Using visual methods in career education and guidance*. Bulmurse Court: the University of Reading.

Mills, N., Pajares F., & Herron, C. (2007). "Self-efficacy of college intermediate French students: relation to achievement and motivation." *language learning 57 (3)*: 417–442.

Mondria, J. A. & Mondria-de Vries, S. (1994). *Efficiently memorizing words with the help of word cards and "hand computer": theory and applications. System, 22(1)*, 47-57.

MoEYS. (2015). *English grades 7-9.* Phnom Pehn: MoEYS.

Moras, S. (2001). Teaching vocabulary to advanced students: a lexical approach, [On-line]. *Teaching and learning*, *2(1)*, 12-18.

Mitchell, R. (2010). Policy and practice in foreign language education: case studies in three European settings. *European journal of language policy 2, no. 2*: 151–80.

Myhill, D.A. (2010). Ways of knowing: grammar as a tool for developing writing. *In beyond the grammar wars, ed. T. Locke*, 129–48. Oxford: Taylor and Francis.

Myhill, D.A. (2011). The ordeal of deliberate choice: metalinguistic development in secondary writers. *In past, present, and future contributions of cognitive writing research to cognitive psychology, ed. V. Berninger*, 247–74. Oxford: Psychology Press.

Myhill, D.A., & Jones, S.M. (2011). Policing grammar: the place of grammar in literacy policy. *In the literacy game, ed. A. Goodwyn and C. Fuller*, 45–62. Oxford: Routledge.

Myhill, D.A., Jones, S.M., Lines, H., & Watson, A.M. (2012). Re-thinking grammar: the impact of embedded grammar teaching on students' writing and students' metalinguistic understanding. *Research papers in education 27, no. 2:* 139–66. DOI: 10.1080/02671522.2011.637640.

Nasrolahi, M., & Sadeghi, M, (2010). Test and puzzles for 504 absolutely essential words book. Available at: http://works.bepress.com

NG, G. S. (1996). *Teaching effectively with visual effect in an image-processing class*. 111-113.

Oxford (2008). *Learner's pocket dictionary*. Oxford university: Press.

Pajaras, Frank. (1996). "Self-efficacy beliefs in academic settings." *Review of educational research 66 (4)*: 543–578.

Palka, E. (1988). *Using cards to revise and practice language items*. ERIC Document, 2(3), 15-26.

Papi, Mostafa. (2010). "The L2 motivational self system, L2 anxiety, and motivated behavior: a structural equation modeling approach." *System 38 (3)*: 467–479.

Paulston, B. C. (1992). *Linguistic and communicative competence: topics in ESL*. Bristol: Longdunn Press,.

Peter, R. (2007). Using practice posters to address EFL challenges. *Mexico, English teaching forum, 45, 3*, pp. 24-29.

Pit Charnnan. (1997). *English language in higher education in Cambodia*. Unpublished manuscript.

Pring, R. (2015). *Philosophy of educational research (third edition)*. London: Bloomsbury Academic.

Rebecca, O., & Shearin, J. (1994). "Language learning motivation: expanding the theoretical Framework." *The modern language journal* 78 (1): 12–28.

Riasati, J. M. (2011). *Language learning anxiety from EFL learner's perspective*. IDOSI Publications, Vol. 907.

Richard, R. (2004). A critical look at authentic materials. *THE JOURNAL OF ASIA TEFL*, 101-114.

Richards I.A., Christine M. (2005). *English through pictures.* Toronto: Pippin Publishing.

Renandya, A.W., & Richards, C. J. (2002). *Methodology in language teaching: an anthology of current practice*. Cambridge University: Press.

Richards, J. C. (2008). *Teaching listening and speaking: from theory to practice*. Cambridge: U niversity press.

Saemann, B. (2009). *Motivation in second language acquisition*.

Sayfa, E., & Koumy, A. (2002). *Teaching and learning English as a foreign language: a Comprehensive approach*. Dar an-nashr for universities: Cairo, Egypt.

Schmitt, N., & Schmitt, D. (1995). Vocabulary notebooks: theoretical underpinnings and practical suggestions. *ELT Journal, 49(2)*, 133-143.

Shehada, S. M., & Amer, O.D. (2018). *Perceptions of Palestinian students towards using audio visual aids in the English language classroom at the university level*. DOI: https://doi.org/10.5281/zenodo.2553036

Singh, N. (2012). *What are the main advantages of audio visual aids?* http://www.preservearticles.com. Retrieved on May 8th 2019.

Spada, N. (2007). Communicative language teaching: current status and future prospects. In *international handbook of english language teaching, ed. J. Cummins and C. Davison, Vol. 15*, 271–88. New York: Springer.

Stockwell, G. (2010). Using mobile phones for vocabulary activities: examining the effect of the platform. *Language learning & technology, 14(2)*, 95-110.

Tavakoli, H. (2012). *A dictionary of language acquisition: a comprehensive review of key terms in first and second language acquisition.* Tehran: Tehran University.

Thorburry, S. (2002). How to teach vocabulary. England: Pearson Education Limited.

TTD (2011). Teacher Training Department of Cambodia. *The Guideline on Lesson Study*. *Phnom Penh*, MoEYS.

Turner, K. (2001). The national literacy strategy — what's in it for modern language teachers? *The language learning journal 24, no. 1*: 37–42. http://www.informaworld.com/10.1080/ 09571730185200221 (accessed 17 May, 2019).

Ueki, M., & Takeuchi, O. (2012). "Validating the L2 motivational self-system in a Japanese EFL context: The interplay of L2 motivation, L2 anxiety, self-efficacy, and the perceived amount of information." *Language education & technology 49*: 1–22. https://www.researchgate.net/publication/275100877.

UNESCO. (1991). *Inter-sectoral basic needs assessment mission to Cambodia*. Bangkok: Author.

UNESCO. (1999). *UNESCO/Japan Funds-in-Trust project for the preservation of the world cultural heritage*. Phnom Penh: Author.

Vidodo, P. H. (2006). *Approaches and procedures for teaching grammar: 5 (1), 122-141*.

Vuong, M., Brown-Welty, S., & Tracz, S. (2010). "The effects of self-efficacy on academic success of first generation college sophomore students." *Journal of college student development 51 (1)*: 50–64.

VVOB Cambodia (2018). Retrieved on January 08, 2019. https://cambodia.vvob.be/our-story-cambodia

VOB Cambodia (2019). Retrieved on January 08, 2019. https://cambodia.vvob.org/news/open-approach-lesson-study

Williams, K. (2001). Towards a rationale for foreign language education: re-stating my reservations. *The language learning journal 24, no. 1*: 43–7.

Yang, J., & Park, J. (2012). Software review: Super memo UX-extreme English advanced and proficient. *CALICO Journal, 29(4)*, 718-726.

Zhang, H., Song, W., & Burston, J. (2011). Reexamining the effectiveness of vocabulary learning via mobile phones. *Turkish online journal on educational technology, 10(3)*, 203–214.

Name:………………………… **Battamabng Teacher Education College**   Date:…...

Class:...   <u>**Pre-Test**</u> **(30 minutes)**   **TOTAL marks:**   **/10**

I. What are these people doing? Use the verbs to complete the sentences. (2.5 marks)

eat   **have**   **lie**   **play**   **sit**   **wait**

1. _She's eating_ an apple.

2. ………………………….. for a bus.

3. ………………………….. football.

4. …………………….on the floor.

5. …………………….breakfast.

6. …………………….on the table.

II. Use the correct words to complete each sentence. (2.5 marks)

~~funny~~   **talkative**   **shy**   **friendly**   **smart**   **artistic**

1. He's _funny_ .He likes to tell jokes.

2. My brother's………He doesn't talk much.

3. My friends are…………… They always smile.

4. She's……………She likes arts and crafts.

5. My father is a math teacher. He's……….

6. He's………… He speaks too much.

III. Answer the questions with the correct form of simple present/ past. (2.5 marks)

0. Where did you go last week? _I went to Siemreap last week._

1. What do you like to do on the weekend? …………………………. ……………

2. Where does your friend live?   ……………………………………………

3. Who did you meet yesterday?   ……………………………………………

4. Did you swim yesterday?   …………………………. …………………..

5. Does your sister watch TV?   …………………………. …………………..

IV. Write if clause with the pictures and add your own information. (2.5 marks)
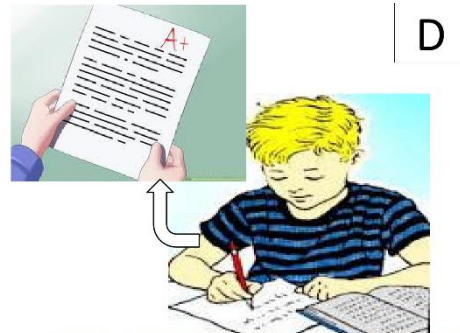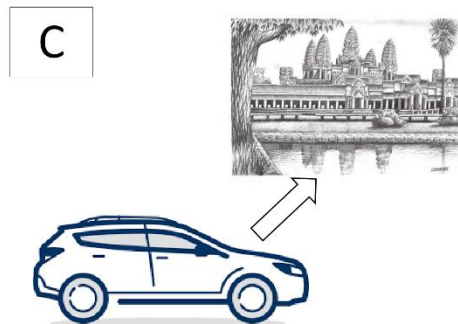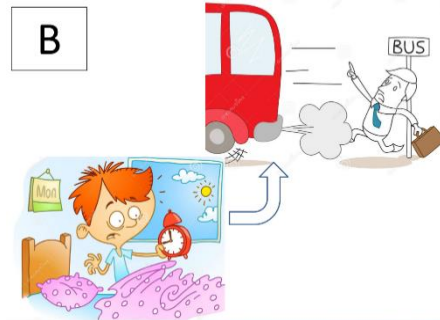
A. If the sun shines, …………………………………………………………………..

B. ……………………………………………………………………………………….

C. ……………………………………………………………………………………….

D. ……………………………………………………………………………………….

E. ……………………………………………………………………………………….

APPENDIX B

Battambang Teacher Education College
Self-Assessment on Grammar Learning (Pre-survey)

-Name: ………………………….………   **-Date:** …………………………….…

-Class: ….…………………………………

General Information:

Class	Details			Subject: …………………………………………
	Male	**Female**	**Total**	
☐ Experimental ☐ Control				**Lesson focus:** …………………………………... …………………………………………..........

Please rate from 1 to 5 (1=Not at all agree with, 2=Slightly agree with, 3=Moderately agree with, 4=Very agree with, 5=Extremely agree with)

How did you do and How do you feel about learning grammar?	Level of agreement	Comments
1. I am active in learning grammar.	**1 2 3 4 5**	
2. I am successful in expressing myself without grammatical errors.	**1 2 3 4 5**	
3. I can understand everything about the grammar.	**1 2 3 4 5**	
4. I can write a sentence without grammatical errors.	**1 2 3 4 5**	
5. I can speak without grammatical errors.	**1 2 3 4 5**	
6. I feel confident in writing English.	**1 2 3 4 5**	
7. I feel confident in speaking English.	**1 2 3 4 5**	
8. I enjoy learning grammar.	**1 2 3 4 5**	
9. I think learning grammar is useful.	**1 2 3 4 5**	

10. What do you think about learning grammar?

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

Battambang Teacher Education College
Self-Assessment on Grammar Learning (Post-survey)

-Name: ………………………….……   **-Date:** …………………………….……

-Class: …..………………………………

General Information:

Class	Details			Subject: ………………………………………
	Male	**Female**	**Total**	
☐ Experimental ☐ Control				**Lesson focus:** ……………………………... ………………………………………............

Please rate from 1 to 5 (1=Not at all agree with, 2=Slightly agree with, 3=Moderately agree with, 4=Very agree with, 5=Extremely agree with)

How did you do and How do you feel about the grammar lessons with pictures?	Level of agreement	Comments
1. I am active in learning grammar.	**1 2 3 4 5**	
2. I am successful in expressing myself without grammatical errors.	**1 2 3 4 5**	
3. I can understand everything about the grammar.	**1 2 3 4 5**	
4. I can write a sentence without grammatical errors.	**1 2 3 4 5**	
5. I can speak without grammatical errors.	**1 2 3 4 5**	
6. I feel confident in writing English.	**1 2 3 4 5**	
7. I feel confident in speaking English.	**1 2 3 4 5**	
8. I enjoy learning grammar.	**1 2 3 4 5**	
9. I think learning grammar is useful.	**1 2 3 4 5**	

10. What do you think about learning grammar with pictures?

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

11. Do you think learning grammar with pictures can help you to learn grammar better? Why or why not?

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

APPENDIX D

Battambang Teacher Education College
Classroom Observation Sheet

-Date: ……………………….……… **-Class:** …..…………………….

-Time: ………………………………… **-Duration:** ……..………….(minutes)

General Information	Details			Subject: …………………………………………
	Male	**Female**	**Total**	
☐ Experimental ☐ Control				**Lesson focus:** ………………………………... …………………………………………..........

I-Teaching technique: Please rate from 1 to 5 (1=Not at all effective, 2=Slightly effective, 3=Moderately-effective, 4=Very effective, 5=Extremely effective)

Items	Scales	Comments
1. Teacher adds pictures to explain the target grammar.	**1 2 3 4 5**	
2. Teacher drills the target grammar by using pictures.	**1 2 3 4 5**	
3. The teacher motivates students to learn the target grammar by using pictures.	**1 2 3 4 5**	

II-Participants:

Items	Scales	Comments
1. Students involve actively in learning the target grammar by using pictures.	**1 2 3 4 5**	
2. Students can speak more accurately with the target grammar.	**1 2 3 4 5**	
3. Students can complete written task with the target grammar correctly.	**1 2 3 4 5**	
4. Students personalize the target grammar in learning.	**1 2 3 4 5**	

III. Pictures

Items	Scales	Comments
1. Pictures are relevant to the target grammar.	**1 2 3 4 5**	
2. Pictures are big enough for students.	**1 2 3 4 5**	
3. Pictures make the language more real and alive.	**1 2 3 4 5**	

General comments:
Strengths:

………

………

………

………

………

………

………

Area needs improvement:

………

………

………

………

………

………

………

APPENDIX E
STUDENT CONSENT FORM

I, _____(full name) understand that this action research is conducted in my class for English grammar lessons and I will:

☐ attend the classes for the course period of 12 weeks.

☐ actively participate in all the activities.

☐ meet any requirements related to homework and assignment.

☐ allow the pictures or videos to be taken in the class for legal use in education purposes.

☐ express my honest ideas and opinions.

☐ not cheat on the knowledge tests.

I understand that this English class will help me to learn better with English grammar lessons, and if I violate the rules, I will voluntarily reserve the right to terminate my study at any time.

_____   _____

Student's Signature   Date

Action Plans (2019-2020)

Months/ activities	July 1	2	3	4	August 1	2	3	4	September 1	2	3	4	October 1	2	3	4	November 1	2	3	4	December 1	2	3	4
Plan of research	▮	▮	▮	▮	▮	▮																		
Literature review	▮	▮	▮	▮	▮	▮	▮	▮	▮	▮	▮	▮	▮	▮										
Create questionnaires									▮	▮	▮													
Test questionnaires												▮												
Survey													▮											
Data record														▮	▮									
Data Analysis																▮	▮	▮	▮	▮				
Draft Thesis													▮	▮	▮	▮	▮	▮	▮	▮	▮			
Finish thesis																							▮	
Print as books																								

No.	Items	June	July	August	....	Nov	Others
1	Grammar Lessons	Instruction Presentation Practice	Instruction Presentation Practice	Instruction Presentation Practice			12 lessons
2	Questionnaires	Pre-		Post-			20 minutes/ survey
3	Knowledge Tests	Pre-		Post-		Delayed post-	30 minutes/test
4	**Processing Data Analysis**						**September-December/2019**
5	**Publishing Findings Presenting**						**January January/2020 July/ 2020**
6	Number of materials	4	4	4			1 set of 5 pictures