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The use of active learning technique Think-Pair-Share in urban land use class: Fifth year surveying engineering

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ABSTRACT

Active Learning techniques, designed to make the students active and collaborative participants in the learning process, are gaining popularity as a supplement and alternative to traditional lectures. The purpose of this paper is to assess and evaluate the use of TPS as an active learning technique in the urban land use planning class of the surveying engineering department. Quantitative research was deployed. The class has a 50-sample size. The results of students' average result of the pretest (without TPS) and posttest using the Think Pair Share (TPS) method has increased from 8.975(44.98%) to 11.43(58.23%) out of 20(100%). The normalized gain for each student is 0.24(i.e. low and better than the pretest), but the value denotes a positive gain in the performance of the student's result. The witnessed level of satisfaction of students with this teaching intervention showed that the students have positively perceived that the use of the lecture method is not enough to learn urban land use planning courses effectively. On the other hand, the result of Cronbach's alpha coefficient data analysis of the witnessed level of satisfaction of students with TPS teaching intervention for the ten items is 0.797, suggesting that the items have relatively high internal consistency. So the majority of the respondents' students perceived the use of TPS as active learning is more essential than the traditional lecture.

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INTRODUCTION

One of the objectives of the higher education program is to prepare knowledgeable, skilled, and attitudinally mature graduates in numbers with the demand-based proportional balance of fields and disciplines so that the country shall become internationally competitive (Higher Education Proclamation 650/2009). As stated in the Second Growth and Transformation Plan (GTP II) 2015), the main objective of the education sector development plan is to ensure an effective and efficient education and training system that enhances quality, relevance, equity, and access. Quality teaching is the use of pedagogical techniques to produce learning outcomes for students. It involves the effective design of curriculum and course content, a variety of learning contexts (guided independent study, project-based learning, collaborative learning, experimentation, etc.), soliciting and using feedback, and effective assessment of learning outcomes (Fabrice et al. 2012). The deep insight into this policy requirement, the Ethiopian Ministry of Education, has given due attention to pedagogical methods in the teaching-learning skills of teachers in higher education institutions. As a result, Higher Diploma Program (HDP) training has been given for more than a decade. HDP is expected to encourage instructors to be reflective teachers, and use active learning and student-centered teaching methods (Morka, A. 2019).

Active learning is, in short, any learning activity engaged in by students in a classroom other than listening passively to an instructor's lecture. As we have shown below, this includes everything from listening practices that help students absorb what they hear, to short writing exercises in which students react to lecture material, to complex group exercises in which students apply course material to "real life" situations and/or new problems. The term cooperative learning covers the subset of active-learning activities that students do in groups of three or more, rather than alone or in pairs. Active-learning techniques, then, are those activities that an instructor incorporates into the classroom to foster active learning (Faust & Paulson, 1998).

According to Banerjee et al., (2013), TPS is a collaborative, active learning strategy, in which students work on a problem posed by the instructor, first individually (Think), then in pairs (Pair) or groups, and finally together with the entire class (Share). Therefore, Think-Pair-Share is a three-way too: Phase-1: Thinking (thinking) The teacher asks questions or problems related to learning, then students are required to measure or determine several stages, Step-2: Pairing (pairing up) Teachers Help students pair up with others to discuss what he had thought about in the first stage. Lessons at this stage are expected to share answers if they have made decisions or shared ideas. For 4-5 minutes in pairs, Stage 3: Sharing (Sharing) In the final stage, the teacher asks the students to share with the whole class what they have talked about. This paper explains the effect of the use of Think-Pair-Share–as an active learning technique during teaching a class of Urban land use planning (ULUP) course in the the Surveying Engineering Program (SEP).

Studies conducted by Alpusari and Apriyandi Putra (2013); Ifamuyiwa and Onakoya (2013); Siburian (2013) to study the impact of TPS on student achievement have indicated that student achievement is enhanced. Sharma, H. L., & Saarsar, P. (2018) suggests that on the basis of finding, using think-pair-share facilitates increased student participation in class discussion and increases the quality of student responses. Kothiyal, Majumdar, Murthy, and Iyer (2013) while observing the effect of Think-Pair-Share in a large CS1 (Computer Science) class, found that Think-Pair-Share is a suitable strategy to use for Computer Science instructors who intend to incorporate active learning techniques in their courses. It was recommended that students working in small groups and providing regular feedback were effective for learning. Dol. M. (2014) found that 99% of students agreed that think-pair-share activity developed an interest in them to learn. 100% of students agreed that thinking about the problem and writing the solution during the thinking phase helped them in learning concepts more precisely. Also, 100% of students agreed that they found the Think-Pair-Share activity effective. Sugiarto and Sumarsono (2014) explained the implementation of the Think-Pair-Share model to improve students'" ability in reading narrative texts. Titsankaew (2015) studied the effects of cooperative learning on students' achievement and attitude toward mathematics. It was found that using the Think-Pair-Share method in the classroom can improve students'" achievement and has positive effects on the student's attitude toward mathematics. Most of the studies conducted by Bataineh (2015); Martha, Emmanuel, and Seraphim (2015); Tint and Nyunt, (2015); and Bamiro (2015) have found a significant effect of TPS on achievement,

and self-esteem, to promote active learning, and to promote higher quality cognitive skills and problem-solving skills in students. Deshpande and Salman (2016); Raba, (2017); Mohmoud, (2013); Lee, C. et al. (2018) TPS can be used to improve student engagement in the learning process. Raba, (2017) explained the influence of Think-Pair-Share (TPS) on improving students‟ oral communication skills, fostering critical thinking, providing an opportunity for students to work independently, and increase in their self-efficacy, participation, understanding, and enjoyment levels after the intervention.

Numerous studies have shown that the lecture-based instruction format fails to motivate meaningful student engagement and promotes passive and superficial learning (Bransford, Brown & Cocking, 2000). Active learning, on the other hand, involves "engaging students in the process of learning through activities and/or discussions in class, as opposed to passively listening to an expert. It emphasizes higher-order thinking and often involves group work" (Freeman et al. (2014). Interactivity is an important element of teaching and learning and requires the active involvement of learners (Bannan-Ritland, 2002). Various pedagogical techniques for incorporating interactivity have been used in learning environments. These include the use of flipped classrooms, peer instruction, collaborative learning, Think-Pair-Share, and Student Response Systems.

On the other hand, Active learning techniques are designed to help students learn by doing things, thinking about the things they are doing, and sharing their knowledge with their peers. In contrast to the traditional lecture-based method, learning in this style of pedagogy is student-centered. Examples of active learning techniques include hands-on demonstrations (Kresta, 1998), Think-Pair-Share, and project-based learning (Maskel, 1999), and the use of simulation models (Nirmalakhandan et al., 2007). According to Bean (2011), students can improve their critical thinking skills when they learn through active learning methods, such as case studies, role-playing, think-pair-share, and small group work. These techniques help them critically evaluate situations from various points of view and implement creative solutions. A significant body of research has evaluated and proven the effectiveness of these active learning techniques think-pair-share (TPS) in engineering college, surveying engineering courses. So, we need to develop more effective ways to engage the students in ways that are actively collaborative and interactive in the classroom.

OBJECTIVES OF THE STUDY

The study has the following general and specific objectives. The general objective of the study is to assess and evaluate the use of TPS as an active learning technique in the urban land use planning class of the surveying engineering department. While the specific objectives of the study are:

1. To evaluate the performance of students' result based on a traditional lecture class on the concept of Urban Land Use planning.
2. To evaluate the performance of students' result based on the Think-Pair-Share technique class of concept of Urban Land Use planning.
3. To relate the performance of the students' results improvement in both tests.
4. To assess the perceived level of satisfaction of students with this teaching intervention in both classes.

MATERIALS AND METHODS

The methodology is the systematic, theoretical analysis of the methods applied to a field of study which is known to be a higher diploma profession (HDP) pedagogy class. This research study adopts both descriptive and Explanatory Designs. Parahoo (1997:142) described a research design as "a plan that describes how, when and where data was to be collected and analyzed". So, Polit et al. (2001:167) described a research design as "it was the researcher's overall answering the research question or testing the research hypothesis". Saunders et al. (2009, p.136) generalize the research design in the following manner, which was a general plan of research that clarifies the process of answering the research question.

This study was performed at ASU, Engineering college, Surveying Engineering department. The students involved in this study were all surveying engineering students. This study is classified into one group as a type of quasi-experimental research class that compares the learning results obtained between the tests with pre and post. The design of this study was carried out using the random for think pair share learning technique. Considering the classroom population, sampling is carried out.

The best Research technique that achieves the objectives of the research and solves the research questions properly is using questionnaires and discussion (use of TPS). Secondary data is conducted by thorough document review used to obtain appropriate and relevant data about the use of TPS as an active learning technique. The research design of this research is quantitative research. According to Arikunto (2010, p. 27), quantitative research can be identified by the use of tables, starting from the data collection, the interpretation of the data, as well as the appearance of the result.

In this case, the writer wanted to find out if the Think Pair Share technique influences the student's result; therefore, the writer used the true experimental designs to prove if this technique was successful or not. The model of this true experimental design in this research was called "Pretest-Posttest student result". It was described as the following scheme (table 3):

Table 1. The scheme of pretest-posttest all student design

Group	Pretest(teacher-centered)	Treatment	Posttest(student-centered)
All students	Y1	X	Y2

Where: Y1: Pretest; X: Treatment; and Y2: Posttest

This design (pretest-posttest group design) involves all students, in which the first-class lecture is called all lecture class (or teacher-centered) is not given the treatment, and pretest is given, the next has given post-test after the treatment (use of TPS) while the same group called all student-centered class. The purpose of this treatment is to compare the pretest and posttest scores, and whether the treatment gave influenced the students' results.

To collect the data, the writer used the pretest and posttest. The test consisted of a set of written tests. The writer used the pretest to measure the student's ability before they got treatments. Meanwhile, the posttest was used to measure the students' achievements in using TPS after they got the treatments. Pertaining to the validity of the test the writer used the material based on curriculum surveying engineering fifth-year students of the Engineering College. In the learning material of urban land use planning, the writer chose questions of "choice, match and descriptive text: how they respond for the questions". These questions are posed for the purpose of pretest-posttest result comparison. The study targeted the students of this 50-sampled fifth-year surveying engineering graduating class students. This study consists of independent variables, namely the learning model (TPS), and the dependent variable of the students' learning urban land use class outcomes or results.

Results from the post-tests were compared to the pre-test scores and normalized learning gains were calculated by dividing the learning gain achieved by the total learning gain possible for each student in the test group (*Weber, E. U., & Johnson, E. J. 2009*). Then the normalized learning gains were calculated for each student and an average is taken for the combined test group. The normalized learning gains for the test group using the statistics software GraphPad (In stat, version 3.10, 2009). The Gain of averages: First calculate the average pre-test and average post-test score for your class, then take the normalized gain of these: <g> = (<Post> - <Pre>) / (100 - <Pre>).

In the study, the students' perception, and efficiency result based on the activity, feedback was also conducted at the end of TPS activity using Likert scale. The interactivity questionnaire using the Individual Degree of

Interactivity Scale (Siau et al., 2006) was administered in the last 20 minutes of class lecture session six of the semester lesson. The Interactivity construct as developed by Siau et al. is based on a combination of the following factors: involvement, engagement, participation, feedback and self-assessment.

The Cronbach's alpha coefficients for individual interactivity in the pre-test and post-test were calculated to indicate that how the items are reliable (Siau et al., 2006). The questionnaire for this study consisted of 10 item-questions and used a five-point Likert scale with 5 = Strongly Agree to 1 = Strongly Disagree. Students' involvement in the class was measured through questions 1 and 2; engagement through questions 3 and 4; participation through questions 5 and 6; feedback through questions 7 and 8; and self-assessment through questions 9 and 10.

$$\alpha = \frac{N\overline{c}}{\overline{v} + (N-1)\overline{c}}$$

Here N is equal to the number of items, $\overline{c}$ is the average inter-item covariance among the items and $\overline{v}$ equals the average variance.

The Interactivity questionnaire asked students to give their preferred response to the statements for typical lecture-based class sessions. It consisted of the following 10 questions.

1. I interact with the lecturer in class.
2. I am involved in learning in class.
3. I am focused for the majority of the class.
4. I reflect on the material taught in class.
5. I participate in class discussions.
6. I respond to questions from the lecturer during class.
7. I receive feedback in class on researcher understanding of the course materials.
8. I receive feedback from the lecturer during class.
9. I can gauge whether I am following the course materials during the class.
10. I can assess researcher understanding of the course materials with respect to other students during the class.

RESULTS AND DISCUSSION

RESULT

Performance During Lecture Class

In order to respond to these research questions, the researcher uses the passive learning approach (the lecture method). This lecture method was educator-centered. Based on this way the students were taken the course without the treatment of the think-pair-share technique introduction.

Table 4: The performance of pre-test student result

Descriptive Statistics

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Gender	50	1	2	1.35	.068	.483
pretest	50	2.75	18.00	8.9755	.55077	3.93327
Valid N (list wise)	50					

The table above shows that the student's average score by using the teacher-centered method (the lecture method) was 8.975 out of 20 percent (table 4). The maximum pretest result shows 18 and the minimum was 2.75% out of 20%. The majority of the students are below 10% and earned unsatisfactory results. Reflection was done after the result was found in the pretest. Based on the research finding on the pretest, it was found that there are insignificant indicators of learning motivation that have not been optimal so it needs some improvements for the pretest.

Performance During Think-Pair-Share Class

In order to respond the performance of student results during Think Pair-Share technique introduction, the researcher uses the active learning technique (with a special focus on the student-centered teaching-learning approach). Based on this technique, the students were taken on fourth lesson of the urban land use planning course with the aid of think-pair-share technique.

Table 2: The performance of post-test student result

Descriptive Statistics						
	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Gender	50	1	2	1.35	.068	.483
posttest	50	5.00	19.50	11.4314	.71606	5.11373
Valid N (listwise)	50					

The table above shows that the student's average score by using student-centered technique is 11.43 out of 20 percent (table 5). The maximum post-test result shows 19.5 and the minimum was 5% out of 20%. The majority of the students are above 10% and earned satisfactory results. Reflection is done after the result is found in the protest. Based on the research finding on the post-test, it was found that there are significant indicators of learning motivation that have been optimal so it depicts some improvements for the post-test.

Improvement of Performance During Both Test Class

Table 6: The performance of student result improvement

Descriptive Statistics						
	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Gender	50	1	2	1.35	.068	.483
pretest	50	2.75	18.00	8.9755	.55077	3.93327
posttest	50	5.00	19.50	11.4314	.71606	5.11373
Valid N (listwise)	50					

The table above shows that the student's average result of the pretest (without TPS) and posttest using the Think Pair Share (TPS) method has increased from 8.975(44.98%) to 11.43(58.23%) out of 20(100%) (table 6). The

normalized gain for each student is 0.24(i.e. low and better than the pretest), but the value denotes a positive gain in performance of student's result. Reflection is done after the student result is found in the pretest. Based on the research finding on the pretest it was found that there are some indicators of learning motivation that have not been optimal so it needs some improvements for the post-test. Based on the result of students' pretest-posttest to lecturer and use of TPS, the result suggests the students are the more varied learning method to better motivate the students in the learning process.

Level of Satisfaction of Students with Think- Pair-Share

Table 7: Frequency Distribution and Mean Values of Data Collected on Perceptions of students

No.	Item	1		2		3		4		5		
		S. Disagree		Disagre		Nuetral		Agree		S. Agree		Mean
		f	%age	f	%age	f	%age	f	%age	f	%age	
1	I react to the lecturer in class.	1	2	1	2	3	6	15	30	30	60	4.44
2	I am involved in learning in class	0	0	2	4	4	8	17	34	27	54	4.38
3	I have focused researcher attention on the majority of the class	0	0	0	0	5	10	16	32	29	58	4.48
4	I reflect on the material taught in class	0	0	3	6	5	10	20	40	22	44	4.22
5	I participate in class discussions	2	4	2	4	4	8	12	24	30	60	4.32
6	I respond to questions from the lecturer during class	1	2	5	10	6	12	17	34	21	42	4.04
7	I receive feedback in class on researcher understanding of the course materials	0	0	4	8	9	18	16	32	21	42	4.08
8	I receive feedback from the lecturer during class	1	2	1	2	8	16	15	30	25	50	4.24
9	I can gauge whether I am following the course materials during the class	1	2	2	4	9	18	15	30	23	46	4.14
10	I can assess researcher understanding of the course materials with respect to other students during the class	1	2	3	6	9	18	16	32	21	42	4.06

The majority of the respondents 90% (agree and strongly agree) believe that the (item number 1) reacts to the lecture in class (with a mean value of 4.44); 88% believe that the (item number 2) students involved in learning in class (with a mean value of 4.38); 90% of the respondents believe that they (item number 3) focused their attention on the majority of the class (with a mean value of 4.48); 84% of the respondents believe that they (item number 4) reflect on the material taught in class (with a mean value of 4.22); 84% of respondents believe that they (item number 5) participate in class discussions (with a mean value of 4.32); 76% of respondents believe that they (item number 6) respond to questions from the lecturer during class (with a mean value of 4.04); 74% of the respondents believe that they (item number 7) receive feedback in class on researcher understanding of the course materials (with a mean value of 4.08); 80% of the respondents believe that they (item number 8) receives feedback from the lecturer during class (with a mean value of 4.24); 76% of the respondents believe that they (item number 9) can gauge whether they are following the course materials during the class (with a mean value of 4.24), and 74% believe that they (item number 10) can assess their understanding of the course materials with respect to other students during the class (with a mean value of 4.06).

Table 8: Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.792	.797	10

Inter-Item Correlation Matrix

ITEM	I react to the lecturer in class.	I am involved in learning in class	I have focused researcher attention on the majority of	I reflect on the material taught in class	I participate in class discussions	I respond to questions from the lecturer during class	I receive feedback in class on researcher understanding of the course	I receive feedback from the lecturer during class	I can gauge whether I am following the course	I can assess researcher understanding of the course materials with
I react to the lecturer in class.	1.00	.637	.260	.581	.380	.535	.153	.094	.238	.109
I am involved in learning in class	.637	1.000	.370	.581	.333	.314	.223	-.042	.137	.245
I have focused researcher attention on the majority of the class	.260	.370	1.000	.618	.180	.283	.159	.072	.233	.224
I reflect on the material taught in class	.581	.581	.618	1.000	.345	.543	.223	.034	.297	.124
I participate in class discussions	.380	.333	.180	.345	1.000	.512	.274	.147	.268	.209
I respond to questions from the lecturer during class	.535	.314	.283	.543	.512	1.000	.175	.377	.361	.148
I receive feedback in class on researcher understanding of the course materials	.153	.223	.159	.223	.274	.175	1.000	.654	.116	.057
I receive feedback from the lecturer during class	.094	-.042	.072	.034	.147	.377	.654	1.000	.139	-.037
I can gauge whether I am following the course materials during the class	.238	.137	.233	.297	.268	.361	.116	.139	1.000	.781
I can assess researcher understanding of the course materials with respect to other students during the class	.109	.245	.224	.124	.209	.148	.057	-.037	.781	1.000

Table 9: Inter-Item Correlation Matrix

$$\overline{v} = \frac{1.000 + 1.000 + 1.000 + 1.000 + 1.000 + 1.000 + 1.000 + 1.000 + 1.000 + 1.000}{10} = \frac{10.000}{10} = 1.000.$$

$$\bar{c} = (0.637 + 0.260 + 0.581 + 0.380 + 0.535 + 0.153 + 0.094 + 0.238 + 0.109 + 0.245 + 0.137 + 0.042 + 0.223 + 0.314 + 0.333 + 0.581 + 0.370 + 0.618 + 0.180 + 0.283 + 0.159 + 0.072 + 0.233 + 0.224 + 0.124 + 0.297 + 0.034 + 0.223 + 0.543 + 0.345 + 0.512 + 0.274 + 0.147 + 0.268 + 0.209 + 0.148 + 0.361 + 0.377 + 0.175 + 0.654 + 0.116 + 0.057 + 0.037 + 0.139 + 0.781)/45 = \frac{12.822}{45} = 0.2849.$$

$$\alpha = \frac{10(0.2849)}{(1.000) + (10 - 1)(0.285)} = 2.849/3.565 = 0.799$$

As depicted from table 8: relatively statistics and table 9: Inter-Item Correlation Matrix, the alpha coefficient for the ten (10) items is 0.799 or 0.797, suggesting that the items have relatively high internal consistency. (Note that a reliability coefficient of 0.70 or higher is considered "acceptable" in most social science research situations.)

DISCUSSION

After analyzing all of the data collected from the student's average result of the pretest (without TPS) and posttest using the Think Pair Share (TPS) method has increased from 8.975(45%) to 11.43(58%) out of 20(100%) (table 3). The normalized gain for each student is 0.24(i.e. low and better than the pretest), but the value denotes a

positive gain in performance of student's result. Reflection is done after the student result is found in the pretest. Based on the research finding on the pretest it was found that there are some indicators of learning motivation that have not been optimal so it needs some improvements for the post-test. So the improvement prior to the post-test is done. The students are well introduced to the think-pair-share active learning technique. The urban land-use planning courses are given aided by the active learning technique Think-Pair-Share. From the class observation the students improve not only their post-test results, but also improve their speaking ability, increase their confidence in class, more students actively participate in class, and critically think the questions posed by the lecturer in class. So different scholars found almost similar results in this paper. For instance, Bewoora, A.K., & Kulkarnib, V.A. (2018) explains the effect of the use of TPS as an active learning method during teaching to a large class for Quality Control (QC) course in the Mechanical Engineering undergraduate program. Response to the survey questions showed improvement in the post-survey compared to the pre-survey, suggesting that students believe using the think-pair-share technique contributes to more student participation during a discussion in QC class and increase their confidence. On the other hand, Bewoora explains the effect of the use of TPS as an active learning method during teaching a large class for the Metrology course of the Mechanical Engineering undergraduate program. Response to the survey questions showed improvement in the post-survey compared to the pre-survey, suggesting that students believe using the Think-Pair-Share Technique contributes to more student participation during a discussion in Metrology class and increase their confidence (Bewoor, A.K., 2019).

The result of the data analysis of the witnessed level of satisfaction of students with this teaching intervention showed that the students have positively perceived that the use of the lecture method is not enough to learn urban land use planning courses effectively. So the majority of the responded students perceived the use of TPS as active learning is more essential than the traditional lecture. Bewoor, A.K. (2019) on his research strengthen researcher finding as follows: In response to, through survey questionnaire, such as 99% of students agreed that the think-pair-share activity developed an interest in there to learning. 100% of students agreed that thinking about the problem and writing the solution during the thinking phase helped them learn concepts more precisely and about 98% of students agreed that discussing the solution with the partner during the pair phase.

Kaddoura, M. (2013) findings also revealed a significant increase in Critical Thinking over time, throughout the 17-week course, with the use of the TPS teaching/learning strategy. The results suggest that TPS is an effective strategy to foster Critical Thinking in nursing students and could be used by educators to foster learners' Critical Thinking in their courses. Further studies were conducted on, Think-pair-share: application of an active learning technique in engineering and construction management classes. The researchers observed that the exercises were well received by the students. Students energetically participated in the exercises and discussed their ideas/ opinions with their peers and instructors. It allowed students to be active participants in the learning process. It also encouraged them to share their practical, experiential knowledge with their peers. We also observed that several students who typically did not participate in class discussions were actively involved in TPS discussions. The procedure would have to be further refined. We are encouraged by our initial observations in the classroom (Deshpande, A., & Salman, B. 2016).

On the other hand, the result of the Cronbach's alpha coefficient data analysis of the witnessed level of satisfaction of students with TPS teaching intervention for the ten items is 0.797, suggesting that the items have relatively high internal consistency. (Note that a reliability coefficient of 0.70 or higher is considered "acceptable" in most social science research situations). The average inter-correlation among the ten (10) items on table-4 is very high.

TPS is a collaborative, active learning strategy, in which students work on a problem posed by the instructor, first individually (Think), then in pairs (Pair) or groups, and finally together with the entire class (Share) Banerjee et.al, 2013). It can be concluded that the use of think pair share technique in teaching and learning process has many advantages for students. Such as, the students' got better result in thinking, speaking, the students' had higher self-confidence, and treat the students to work independently and collaborate with others. The use of Think Pair Share (TPS) improves the Learning Achievement in urban land use planning Study Program Students' in the Academic

Year 2022. The improvement of students' achievement can be seen from students' pretest and post test results and other used methods.

CONCLUSION AND RECOMMENDATION

CONCLUSION

TPS is a collaborative, active learning strategy, in which students work on a problem posed by the instructor, first individually (Think), then in pairs (Pair) or groups, and finally together with the entire class (Share) Banerjee et.al, 2013). In this paper, how TPS activity can be used for the Course of urban land use planning is explained. The results of the pre-test and post-test suggest that think-pair-share had a positive impact on students‟ views about participating in a discussion in Surveying engineering class. Response to questions showed an improvement in the post-test compared to the pre-test. So, the results also suggest that students' average result of the pretest (without TPS) and posttest using the Think Pair Share (TPS) method has increased from 8.975(44.98%) to 11.43(58.23%) out of 20(100%) (Table 3). The normalized gain for each student is 0.24(i.e. low and better than the pretest), but the value denotes a positive gain in the performance of the student's result.

The result of the data analysis of the witnessed level of satisfaction of students with this teaching intervention showed that the students have positively perceived that the use of the lecture method is not enough to learn urban land use planning courses effectively. So the majority of the responded students perceived the use of TPS as active learning is more essential than the traditional lecture.
On the other hand, the result of the Cronbach's alpha coefficient data analysis of the witnessed level of satisfaction of students with TPS teaching intervention for the ten items is 0.797, suggesting that the items have relatively high internal consistency.

RECOMMENDATION

In this paper, how TPS activity can be used for the Course of urban land use planning is explained. The results of the pre-test and post-test suggest that think-pair-share had a positive impact on students‟ views about participating in a discussion in Surveying engineering class. So, the paper recommends the Assosa university in general and the engineering college in particular must include the active learning techniques like TPS(Think-Pair-Share) as a strategic element to their annual plans and enhance the teaching learning process and attain their academic goals.

For future better understanding of the students result, inferential statistics by applying T-Test will be employed to determine the significant difference on the results between pre-test and post-test. But for this active research purpose the effect of the treatment is focused on the determination of the Mean (8.975(44.98%) to 11.43(58.23%)).

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