

Enhancing Students' Critical Thinking Through TTW (Think-Talk-Write) Instructional Model in Araling Panlipunan

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Abstract

The study was conducted to determine whether the utilization of TTW (Think-Talk-Write) Instructional Model could enhance students' critical thinking in terms of analyzing information, observing and observations, comparing and contrasting, draw conclusions based on evidence and define terms and consider definitions in the subject Araling Panlipunan 7. Using the single-group pretest-posttest method of experimental research design and cluster sampling, it involved thirty (30) Grade 7 online class students of Talipan National High School during the school year 2021-2022. The students were given a self-made pre-test consisting of a 40-item multiple choice test, 8 questions per critical thinking skill, on the pre-experimental phase followed by the utilization of the TTW instructional model during the experimental phase. Post-test was administered in the post-experimental phase. Frequency count, percentage and paired samples t-tests were used to analyze and interpret the data. Results revealed that there is a significant difference between the pre-test and post-test performance levels of students' critical thinking in terms of analyzing information, observing and observations and comparing and contrasting while there is no significant difference in terms of the skill in drawing conclusions based on evidence and defining terms and consider definitions. Based on the findings, the utilization of the TTW instructional model helped a lot in enhancing students' critical thinking skills in terms of analyzing information and improved their skills in observing and observations and comparing, and contrasting. However, gradual improvement is observed on critical thinking skills which require students to conclude. Moreover, their skill in defining terms based on their own understanding and transferring their learning in real life-context still needs more practice to improve. Hence, relevant research related to this matter may be the focus of future studies.

Keywords: Araling Panlipunan, Critical thinking, Think-Talk-Write Instructional Model, Single-group Pretest-Posttest Method, Philippines

Introduction

As the world continuously changes, people's way of thinking should be adaptable. Producing mindful citizens are one of the goals of education. Thus, different ways of thinking should be encouraged for students, and one of them is being a critical thinker.

Critical thinking is a self-directed (Islam, 2015), independent (Crockett, 2021), reflective (Dewey in Hitchcock, 2018) and systematic way of thinking (Snyder in Pandeeka & Maneekul, 2019) to create appropriate decisions or judgment leading to the transformation of ones thought which can contribute to the changes in the society (Marquez, 2017). In the Philippine context, in R.A. 10533 also known as the Enhance Basic Education Act of 2013, one of its policies is to produce graduates who are capable to “engage in autonomous, creative, and critical thinking” (Republic Act No. 10533 | GOVPH, 2013). Hence, the students need to develop their skills in line with critical thinking because it is one of the life-long learning skills needed in the 21st century for them to have a good understanding of real-life trends and issues.

Several challenges are faced in developing the critical thinking of the students caused by technological changes and the pandemic. Further, this kind of thinking is to be taught differently in each area of learning, for that reason critical thinking is hard to define, teach, and assess (Willingham, 2007 in NimbleyWise Team, 2017).

For the context of this study, the researcher focused on the critical thinking of the students in Araling Panlipunan or Social Studies. Critical thinking in this subject is crucial since it involves real-life situations in local and global aspects. Given that the goal of this subject is to develop a good citizen out of the innocent minds of young learners, critical thinking should be practiced in every part of the lesson.

In teaching critical thinking, the proper and correct sequence of instruction is suggested by Willingham (2019). Hence, choosing an appropriate instructional model in line with the teaching of critical thinking is important. The main purpose of using an instructional model is to help teachers to know the process of designing and delivering “effective learning opportunities for students.” Moreover, the outcome of its application can increase the understanding of teachers on the process of applying detailed strategies during specific phases of learning (Hubbell & Goodwin, 2019).

Though critical thinking is mainly focused on independent and reflective thinking, this can be enhanced with the use of cooperative learning such as the TTW instructional model (Bustami et al., 2019). TTW also known as the Think-Talk-Write instructional model was introduced by Huinker and Laughlin and is composed of three stages - think, talk, and write. In the think stage, students' thinking ability will be processed through reading text and analyzing problems (Huinker & Laughlin, 1996 in Pratiwi, 2019).

The talk stage led the students to convey their ideas from the thinking stage by communicating to their groupmates. Group discussion which is part of this stage is said to be an effective strategy in the development of students' critical thinking (Agboeze et al., 2013) and the idea from the discussion can be useful to writing (Kurniaman et al., 2018).

The last stage of the TTW instructional model is the write stage wherein the students will be asked to write down the combined ideas gathered from the think and talk stage (Huinker & Laughlin, 1996 in Pratiwi, 2019). Writing serves as a medium for reflection and can help in the development of thinking skills (Chappell, 2010 in Klimova, 2012).

TTW instructional model is said to be effective in the enhancement of students' critical thinking with the use of various learning materials as supported by the research of Bustami et al. (2019), Purwita et al. (2020), and Efuanisyah and Wahyuni (2021). Moreover, TTW can also be paired with several interactive instructional materials and is proven to be effective in the improvement of students' critical thinking. It is backed up by the study of Buchori and Cintang (2018), Jusniani et al., (2020), Iftitah et al. (2020), and Wahyuni et al. (2020).

Willingham (2019) also suggested that critical thinking skills appropriate to the subject or domain should be considered. Skills such as analyzing information, observing, defining terms, and consider definition which is included in the list of critical thinking abilities of Ennis and Norris (1989) in Davidson

and Dunham (1996), comparing-and-contrasting idea and drawing conclusions according to Alyssa (2021) are the critical thinking skills that may be observed in the learning process of Social Studies.

Objectives of the Study

This research aims to enhance students' critical thinking skills through TTW instructional model in Araling Panlipunan 7. Specifically, it sought to: 1.) determine the performance level of students' critical thinking before the utilization of the TTW instructional model in terms of 1.1. analyzing information; 1.2. observing and observations; 1.3. comparing and contrasting; 1.4. draw conclusions based on evidence; and 1.5. define terms and consider definitions 2.) determine the outcome of the utilization of TTW instructional model to the performance level of students' critical thinking 3) determine if there is a significant difference in the performance level of students' critical thinking before and after the utilization of TTW instructional model in Araling Panlipunan 7.

Methodology

The researcher used an experimental research design in the form of a Single-group Pretest-Posttest method. This study was conducted at Talipan National High School where the researcher is currently working.

Using cluster sampling, the class of Grade 7-EV, which is composed of 30 students, was chosen as the respondents of the study because they are subjected to an online class set-up. Hence, the researcher expected them to have enough means such as internet connection and gadgets which is necessary in the conduct of the study because it involves collaboration within the group and discussion of created output to the whole class as well as the utilization of an interactive learning material which is possible through an online class. The research instruments utilized in this study are lesson exemplars integrated with the stages of TTW instructional model using an interactive e-book (IEB) which served as an instructional tool and a self-made 40-item multiple choice test consisted of 8 items for each critical thinking skill which served as the pre-test and post-test. The use of pre-test and post-test determined the enhancement of the performance level of students' critical thinking.

Permits needed to conduct this research is secured by the researcher which includes the approval of the panel and school head of Talipan National High School to conduct the study. Parents' consent was also distributed to the students who served as the participants of the study.

The procedure conducted for this research is composed of three stages. The first stage which is the pre-experimental phase involved the content development and validation of the research instruments to be utilized, the orientation of the participants, and the conduct of the pre-test. The second stage is the experimental phase which includes the implementation of the TTW instructional model using an expert-validated IEB as an instructional tool. In the third stage which is the post-experimental phase, the researcher conducted the post-test followed by the analysis of the data gathered in the process of the research to present adequate findings and valid conclusions and recommendations.

Appropriate statistical treatments are used to analyze and interpret the data collected. Frequency count, percentage, cumulative percentage, and performance level assessment tools as described in DepEd Order No. 73, s. 2012 is used to analyze and describe the pre-test and post-test performance levels of students' critical thinking. Paired samples t-test is used to interpret the significant difference in the performance level of students' critical thinking before and after the utilization of the TTW instructional model in Araling Panlipunan 7.

Results and Discussion

1. Performance level of students' critical thinking before the utilization of TTW instructional model

1.1. In terms of analyzing information

Table 1

Pre-test performance level of students' critical thinking in terms of analyzing information

Performance Level	Frequency	Percent	Cumulative Percent
Beginning	15	50.0	50.0
Developing	8	26.7	76.7
Approaching Proficiency	5	16.7	93.3
Proficient	2	6.7	100.0
Total	30	100.0	

The data shows that the greater part of the class which is composed of 76.7% has low scores. They are the students who belong to the beginning and developing level during the pre-test which concludes that they have difficulty in analyzing information.

1.2. In terms of observing observations

Table 2

Pre-test performance level of students' critical thinking in terms of observing and observations

Performance Level	Frequency	Percent	Cumulative Percent
Beginning	16	53.3	53.3
Developing	6	20.0	73.3
Approaching Proficiency	4	13.3	86.7
Proficient	4	13.3	100.0
Total	30	100.0	

Table 2 showed that 73.3% of the class has a low-performance level (beginning and developing) in terms of their observation skill on the pre-test. Thus, there is a lack of awareness in terms of historical and current trends among students.

1.3 in terms of comparing and contrasting

Table 3

Pre-test performance level of students' critical thinking in terms of comparing and contrasting

Performance Level	Frequency	Percent	Cumulative Percent
Beginning	20	66.7	66.7
Developing	3	10.0	76.7
Approaching Proficiency	3	10.0	86.7
Proficient	2	6.7	93.3
Advanced	2	6.7	100.0
Total	30	100.0	

Students' skills in comparing and contrasting need to be improved due to their low performance which is composed of 76.7% of the class has a beginning and developing performance level.

1.4. In terms of draw conclusions based on evidence

Table 4

Pre-test performance level of students' critical thinking in terms of draw conclusions based on evidence

Performance Level	Frequency	Percent	Cumulative Percent
Beginning	14	46.7	46.7
Developing	7	23.3	70.0
Approaching Proficiency	4	13.3	83.3
Proficient	4	13.3	96.7
Advanced	1	3.3	100.0
Total	30	100.0	

The majority of the students encountered difficulty in drawing conclusions based on evidence as resulted in 70% of the class obtained a performance level of beginning and developing.

1.5. In terms of define terms and consider definitions

Table 5

Pre-test performance level of students' critical thinking in terms of define terms and consider definitions

Performance Level	Frequency	Percent	Cumulative Percent
Beginning	19	63.3	63.3
Developing	5	16.7	80.0
Approaching Proficiency	5	16.7	96.7
Advanced	1	3.3	100.0
Total	30	100.0	

It can be deduced that 80% of the class has difficulty in defining terms and considering definitions. Hence, this is the most challenging critical thinking skill for students.

2. Outcome of the utilization of TTW instructional model to the performance level of students' critical thinking

Table 6

Summary of the pre-test and post-test performance level of students' critical thinking skills

Critical Thinking Skills	Pre-test			Post-test		
	Mean	SD	Performance Level	Mean	SD	Performance Level
Analyzing information	70.83	9.18	Beginning	81.67	13.30	Approaching Proficiency
Observing and observations	71.04	10.14	Beginning	77.92	11.61	Developing
Comparing and contrasting	69.79	11.31	Beginning	75.63	14.47	Developing
Draw conclusions based on evidence	73.75	10.26	Beginning	78.96	13.45	Developing
Define terms and consider definitions	67.92	10.91	Beginning	71.04	10.01	Beginning

The result of the post-test implied that the majority of the students developed fundamental knowledge and critical thinking skill in analyzing information with little guidance from the teacher and/or their colleagues. In terms of the student's critical thinking skills in observing, comparing and contrasting and drawing conclusions, majority of them attained minimum knowledge and skill which still needs

continuous guidance from the teacher. On the other hand, the majority of the students struggle with their critical thinking skill in terms of defining terms and consider definitions which means that their fundamental skills are not developed adequately (DepEd Order No. 73, s. 2012 | GOVPH, 2012).

3. Test of significant difference in the performance level of students critical thinking before and after the utilization of TTW instructional model in Araling Panlipunan 7

Table 7

Test of significant difference between pre and post-test performance level of students critical thinking

Critical Thinking Skills	Mean	Std. Deviation	Std. Error Mean	Paired Differences		t	df	Sig. (2-tailed)	VI
				95% Confidence Interval of Difference Upper	Lower				
Analyzing information	-1.733	1.893	.346	-2.440	-1.027	-5.017	29	.000	S
Observing and observation	-1.100	1.668	.305	-1.723	-.477	-3.612	29	.001	S
Comparing and contrasting	-.933	2.348	.429	-1.810	-.057	-2.177	29	.038	S
Draw conclusions based on evidence	-.833	2.306	.421	-1.694	.028	-1.980	29	.057	NS
Define terms and consider definitions	-.500	2.047	.374	-1.264	.264	-1.338	29	.191	NS

Legend: t=critical value; df= degrees of freedom; VI=verbal interpretation; NS=not significant; S=significant; If p-value < 0.05, then it is significant; if p-value > 0.05, then it is not significant

The result of the two-tailed paired samples test at 0.05 level of significance reveals that there is a significant difference between the pre-test and post-test performance levels in the following skills: analyzing information, observing and observations, and comparing and contrasting. Though there is an improvement based on the result of the mean difference, the statistical result is not significant for draw conclusions based on evidence and define terms and consider definitions.

To expound the result of the test of a significant difference it is essential to look at how the stages of the think-talk-write instructional model are used in this study. To achieve this goal, the researcher followed the suggestion of Willingham (2019) in teaching critical thinking which is to plan proper and correct sequencing of instructions to make learning easier.

In the think stage, learning activities related to analyzing information is practiced by the students with the help of the interactive features of the IEB incorporated with audio-visual material, animation (Depdiknas, 2006 in Wahyuni et al., 2020), and interactive assessments (Harman, 2018) which helped to make instruction more interesting and encourage the students to think. Thus, there is a significant difference between the result of the pre-test and post-test performance level of students' critical thinking in terms of analyzing information.

After the students conducted the independent learning activities under the think stage, group collaboration is performed, and this part belongs to the “talk” stage. In this stage, students performed learning activities by group and through class discussion related to observation, comparing, and contrasting events or concepts, and drawing conclusions based on the activity conducted. The students were heterogeneously grouped into 4-6 members and gave them specific tasks to collaborate with. This is in line with the suggestion of Huinker and Laughlin (1996) as cited in Pratiwi (2019) that the TTW instructional model must be used when students are heterogeneously grouped into 2-6 members.

One of the advantages of the TTW instructional model is that students have the chance to interact and collaborate ideas with their groupmates to create conclusions or solutions to the problem (Huda, 2014 in Lukman, 2017). Thus, there is a significant difference between the result of the pre-test and post-test performance level of students' critical thinking in terms of observing and observations and comparing-and-contrasting because they helped each other in understanding their task through group work. The leaders assigned are responsible enough to lead their respective group and to help their classmate who needs assistance.

Though there are restrictions due to the pandemic, observations are conducted by recalling the surroundings of the students (Indeed Editorial Team, 2020) and looking for patterns from posts, websites, blogs, or social media sites (Salmons, 2014), which eventually helped the students to gain awareness on the current situations happening in the country and in other Asian countries. Each student's personal experiences and observations were combined with their groupmates to complete the task assigned to their respective group.

Furthermore, the use of a graphic organizer and collaborative effort in finding the similarities and differences between concepts and events helped the students to accomplish their tasks well. The use of visual representation as well as sharing and listening to their classmate's ideas is suggested by Tejeda (2021) to help the students improve their skills in comparing and contrasting.

On the other hand, there is no significant difference between the result of the pre-test and post-test performance level of students' critical thinking in terms of drawing conclusions based on evidence. This skill is still attributed to the talk stage because the students, after their group presentations, were asked process questions to conclude the activity that they conducted. Agboeze et al. (2013) claim that open-ended questions and group learning techniques can aid in the development of students' critical thinking. It is also beneficial for the students to discuss their acquired information with their classmates to improve their understanding of the concept (Onwardono, 2018). Though most of the students participated in the group presentations and students who are not yet heard eventually spoke, their participation are only limited to the presentation that their group prepared.

The talk stage of the TTW instructional model encourages the students to share their thoughts freely to the whole class, yet the researcher observed that the leaders and the same active students are the ones who participated in giving their conclusions on the concept and activity that they have conducted. The domination of certain students resulted in passiveness to some which is one of the weak points of the TTW instructional model (Dewi, 2019).

There is no significant difference in the result of the pre-test and post-test performance level of students' critical thinking in terms of defining terms and consider the definition. This critical thinking skill is practiced by the students during the write stage of TTW instructional model. In this stage, the students are expected to make a connection from their independent thinking and gathered information from their group task in the talk stage through writing (Huinker & Laughlin, 1996 in Pratiwi, 2019). Moreover, writing serves as a medium for someone's idea to be heard which eventually develops thinking skills (Chappell, 2010 in Klimova, 2012). The guide questions in this part require answers that reflect the understanding of the concepts and its application in a real-life scenario.

Though the students engaged in writing, most of them have statements that did not meet the expected answer to the guide questions. As observed by the researcher, some of the students' answers are copied from the internet or the lesson content of the IEB. Since it is easier to find information on the internet, taking others' ideas instead of thinking of self-created answers is quite observed (Weyers, 2012). Thus, it caused a negative effect on someone's originality and higher-order thinking (Carr, 2010). The lack of motivation to think critically is also observed which resulted in difficulty in this skill (Guevarra et

al., 2017). Moreover, the decision of whether to think or not to think as a reason for difficulties to critical thinking (Willingham, 2019) can be connected to the additional tasks required in the TTW instructional model that only a few students can follow (Dewi, 2019).

In the process of this study, it is evident that TTW instructional model has its weak points. However, the good thing is that its advantages surpass them for it can still enhance the critical thinking skills of the students. Though, teachers must consider appropriate learning activities, instructional material, proper plan of instruction, learning context, and duration of teaching-learning time for they are crucial to ensure its effectiveness.

Conclusions

Based on the analyzed data, the following findings were made:

1. The pre-test revealed that the majority of the students have a beginning performance level in their critical thinking skills in terms of analyzing information, observing and observations, comparing and contrasting, draw conclusions based on evidence and define terms and consider definitions. Thus, the critical thinking skills of the students needs to be enhanced.
2. The post-test revealed that a greater part of the class belongs to approaching proficiency level in terms of their critical thinking skill in analyzing information. Meanwhile, most of the students attained a developing performance level after the experimental phase in terms of observing and observations, comparing and contrasting, and draw conclusions based on evidence. Lastly, the majority of the students remained at the beginning performance level in terms of their skill in define terms and consider definitions. Hence, there is an improvement in the critical thinking of the students after the utilization of TTW instructional model.
3. There is a significant difference between the pre-test and post-test performance levels of students' critical thinking in terms of analyzing information, observing observations, and comparing-and-contrasting while the result is not significant in draw conclusions based on evidence and define terms and consider definitions.

Recommendations

Based on the findings and conclusions made, the following are hereby recommended:

1. The TTW instructional model studied by the researcher may be adapted or modified for future study. It may be paired up with other learning materials appropriate to the context of the subject. Further, an analysis should be considered to determine the extent of the influence of instructional material in the effectiveness of the TTW instructional model.
2. The teaching-learning process through the framework of the TTW instructional model utilized in this study may guide Araling Panlipunan teachers in teaching critical thinking in line with the content of the subject.
3. Administrators may conduct training for teachers in creating valid and reliable assessments related to critical thinking skills.
4. This study reflected the current situation of students' critical thinking before and after the use of an intervention. Though the result improved, it cannot hide the fact that there are students who remain as low performing, especially on critical thinking skills which require them to draw a conclusion and define terms based on their own words and understanding and transferring their

learning in real life-context which still needs more practice to improve. Hence, future studies related to this matter may be one of the focuses of educators.

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