TEACHING STRATEGIES IN ONLINE DISTANCE LEARNING ON CRITICAL THINKING SKILLS AND TECHNICAL SKILLS OF THE STUDENTS

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ABSTRACT

This study conducted to determine the effect of teaching strategies in online distance learning on the critical thinking skills and technical skills of the students of Liliw National High School, Liliw Laguna, specifically sought to answer the following questions. What is the level of teaching strategies in Online Distance Learning in terms of Lecture-Discussion Method/ Virtual Class; Inquiry-based Method; Visualization; Elaboration? What is the level of critical thinking skills of the student in terms of; Alertness; Flexibility; Decision making? What is the level of technical skills of the students in TLE in terms of; Mensuration and Calculation; Use of tool and equipment; Occupational health and safety? Are the teaching strategies in online distance learning have significant effect on the critical thinking skills of the Grade 7 and 8 TLE online students? Are the teaching strategies in online distance learning have significant effect on the technical skills of the students in Liliw National High School, Liliw, Laguna?

The researcher utilized a descriptive design and used the teaching strategies in technology and livelihood education to its effects on the critical thinking skills and technical skills of the students. Respondents are selected forty-five (45) online distance learning students from grade 7 and 8 levels in Liliw, Laguna. Purposive sampling technique was used to get the sample respondents for this study. The scheme was used to ensure that the student-respondents came from Liliw, Laguna. The main source of data of the study is the survey questionnaire prepared by the researcher and the statistical use of simple descriptive statistics such as mean and standard deviation to determine the mean level of the teaching strategies used by the teachers to measure the students' critical thinking and technical skills..

Based on the data gathered the teaching strategies in online distance learning in terms of lecture-discussion methods/ virtual class, inquiry-based method, visualization, and elaboration obtained a grand (M=4.27, SD= 0.58) which means that the respondents perceived that the level of teaching strategies was always performed. It could be concluded that the teaching strategies used in online distance learning were always perceived by the students on an excellent level.

The level of the critical thinking skills of the students in TLE in terms of alertness, flexibility, and decision making were always and excellently performed and for technical skills of the students in TLE in terms of mensuration and calculation, use of tools and equipment, and occupational health and safety were also resulted always and excellently performed.

The teaching strategies in online distance learning on critical thinking skills as to alertness in terms of lecture-discussion method/virtual class, inquiry-based method and elaboration resulted in significant analysis while in terms of visualization it resulted in not significant analysis. As for the Flexibility in terms of lecture-discussion method/virtual class, visualization and elaboration got the result to the analysis of not significant however in terms of inquiry-based method resulted as to significant analysis. And for decision making in terms of lecture-discussion method/virtual class, visualization and elaboration got also the result

to the analysis of not significant and in terms of inquiry-based method resulted as to significant analysis. The result has not sustained the research hypothesis, therefore; the null hypothesis was partially accepted.

In the effect of teaching strategies in the online distance learning on technical skills of the students as to mensuration and calculation and use of tools and equipment in terms of lecture-discussion, visualization and elaboration got the result the analysis of no significant effect and in terms of inquiry-based method got the result of the significant analysis. Lastly, as to occupational health and safety in terms of inquiry-based method, visualization and elaboration got the analysis of not significant, and lecture-discussion in the virtual class got the significant analysis. The effect of teaching strategies in online distance learning in terms of technical skills was also partially sustained the research hypothesis. Therefore; the effect of teaching strategies in online distance learning in terms of critical thinking skills and technical skills were both partially accepted.

School and teachers may adapt the results of this study called, "Teaching Strategies in Online Distance Learning on Critical thinking and Technical skills of the Students", to maintain and enhanced the teaching strategies in teaching technology and livelihood education (TLE) to continue preparing for the current situation that our education system is facing today to bring out the best of the students' performance for the benefit of our students and their future.

KEYWORDS:*critical thinking skills, online distance learning, ,teaching strategies, technical skills, TLE*

I. INTRODUCTION

Teaching field learning in a remote modality clearly poses pedagogical and logistical challenges. Variety of potentially successful approaches to remote teaching of topics typically taught in the field, especially in teaching that needs to develop the critical and technical skills of the students. The education systems now a days changed by the pandemic that focused on the learning outcome types most frequently taught in typical field settings and most heavily impacted by modality shift: identification and natural history, field techniques, data collection, and study design.

Freeman et al., (2014), suggested activities and related resources are general rather than specific and may be applicable to a variety of synchronous or asynchronous remote courses that teach such learning outcomes. It assumed that more active and student‐centered activities are generally more engaging to students and likely to produce positive outcomes in both face‐to‐face and remote environments. The challenges to inclusive teaching posed by shifting to distance‐learning modalities that were most frequently identified by respondents were technology, student time, less engaging modality, and geography or transportation. A combination of institutional support, such as providing necessary equipment to students, and thoughtful remote course design, such as focusing on activities likely to be effective in a remote environment, may assist students in overcoming these faculty‐perceived barriers. An important consideration, expressed is that remote teaching modalities may exacerbate existing inequalities between students, presumably because of correlation between access to technology and socioeconomic class or other factors.

Through this, a study of the teaching strategies in online distance learning has to think of interventions and techniques for the students to cope in this time. It determines problem of modalities coping the challenges in teaching TLE using the critical thinking skills and technical skills in order to find huge opportunities for the learner's despite of the challenges that we are facing at the moment.

II. OBJECTIVES

The study aimed to determine the teaching strategies in Online distance learning: its effect to the critical thinking skills of the students of Liliw National High School, Liliw Specifically, and this study intended to answer the following questions;

1. What is the level of teaching strategies in TLE in terms of :
    1.1 online distance learning;
        1.1.1 lecture discussion method/ virtual class;
        1.1.2 inquiry-based method;
        1.1.3 visualization; and
        1.1.4 elaboration?
2. What is the level of critical thinking skills of the students in TLE in terms of:
    2.1 alertness;

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    2.2   flexibility; and

    2.3   decision making?

3.   What is the level of technical skills of the students in TLE in terms of:

    3.1 mensuration and calculation;

    3.2 use of tool and equipment; and

    3.3 occupational health and safety?

4.   Are the teaching strategies in online distance learning has a significant effect on the critical thinking skills of the selected grade 7 and 8 students of Liliw National High, Liliw Laguna?

5.   Are the teaching strategies in Online distance learning has a significant effect on the technical skills of the selected grade 7 and 8 students of Liliw National High School, Liliw Laguna?

III. METHODOLOGY

The respondents of the study were selected grade 7 and 8 online students in Liliw National High School, Liliw, Laguna for school year 2020-2021. The researcher selected a group of subjects for study from a larger group. Purposive sampling technique was used to get the sample respondents for this study. The scheme was used to ensure that the student-respondents came from Liliw Laguna The respondents of the study included the selected forty five (45) online distance learning students, it consists of twenty three from Grade 7 and twenty two Grade 8 of Liliw National High School, Liliw, Laguna

A validated researcher-made questionnaire was used as the major instrument to gather the adequate data and information from the respective subjects of the study. The copies of the questionnaire were multiplied based from the number of the respondents. Then it was administered with confidentiality, the gathered information was transferred in a tally sheet. Subsequently, codes were assigned to each indicator. The encoded data was given to the researcher's statistician for the descriptive analysis. The gathered data was interpreted and presented in textual and tabular forms and appropriate interpretation was made

Mean and standard deviation were used to determine the level of teaching strategies in online distance learning in terms of lecture/discussion, inquiry-based methods, visualization and elaboration on critical thinking skills of the students in terms of alertness, flexibility and decision making and technical skills of the students in terms of mensuration, use of tolls and equipment and occupational health and safety. In the other hand, Minitab 14 was used in computing the data gathered and treated them statistically using Linear Regression Analysis to know if there is a/no significant effect to teaching strategies' in TLE on critical thinking skills and technical skills of the students.

IV. RESULT AND DISCUSSION

This chapter deals with the presentation, interpretation and analysis of data gathered to answer the sub problem relative to the main problem of this study on strategies on online distance learning on critical thinking and technical skills of the students. This part discusses the findings of the study based on the research questions.

Teaching strategies in online distance learning (ODL)

Teaching strategies in online distance learning in terms of lecture discussion method/ virtual class, inquiry-based method, visualization and elaboration was treated statistically accompanied by five-point rating scale made by a researcher. The table shows the indicative statement, weighted mean, standard deviation as well as the remarks.

Table 1. Level of Teaching Strategies in Online Distance Learning

Variables	Mean	SD	Remarks
Lecture Discussion Method/ Virtual Class	4.23	0.53	Always
Inquiry-based Method	4.35	0.56	Always
Visualization	4.30	0.60	Always
Elaboration	4.18	0.62	Often
Grand Mean/SD	**4.27**	**0.58**	**Always**
Verbal interpretation			**Excellent**

Legend:

Scale	Range	Remarks	Interpretation
5	4.20 – 5.00	Always	Excellent
4	3.40 – 4.19	Often	Very Satisfactory
3	2.60 – 3.39	Sometimes	Satisfactory
2	1.80 – 2.59	Rarely	Fair
1	1.0 – 1.79	Never	Poor

Table 1 shows the level of teaching strategies is based on lecture discussion method/ virtual class (M=4.23, SD= 0.53), inquiry-based method (M=4.35, SD= 0.56), visualization (M=4.30, SD= 0.60) and elaboration (M=4.18, SD= 0.62). It could be gleaned from the table that the level of teaching strategies obtained a grand (M=4.27, SD= 0.58) which means that the respondents perceived that the level of teaching strategies were *always* performed. It could be concluded that the teaching strategies used in online distance learning was always perceived by the students on an *excellent level*.

Table 2. Level of Teaching Strategies in Online Distance Learning in Terms of Lecture Discussion Method/Virtual Class

STATEMENT	Mean	SD	Remarks
My teacher was able to:			
1. Encourage us to brainstorm ideas for learning contracts with their online peers as well as negotiate the final contract with the instructor through email or online conferencing.	4.32	0.52	Always
2. Execute short lectures provide enough information to serve as a basis for further reading, research, or other learning activities.	4.22	0.56	Always
3. Place lecture notes, with links to related resources and other Web sites embedded in them, on a web page for the learners to review.	4.24	0.48	Always
4. Offer continuous feedback regarding progress toward accomplishing learning objectives especially in the laboratory in TLE.	4.20	0.55	Always
5. Have online lectures that could make our lesson be shorter and more to the point than lectures in live classrooms which often extend far beyond the attention span of the audience.	4.20	0.50	Always
Grand Mean/SD **Verbal interpretation**	**4.23**	**0.53**	**Always** **Excellent**

It can be seen from the table, statement no. 1 " encourage us to brainstorm ideas for learning contracts with their online peers as well as negotiate the final contract with the instructor through email or online conferencing" gained the highest (M= 4.32, SD=0.52). Next is statement no. 2 " Execute short lectures provide enough information to serve as a basis for further reading, research, or other learning activities" (M= 4.22, SD=0.56). Statement no. 3 "Place lecture notes, with links to related resources and other Web sites embedded in them, on a web page for the learners to review" (M= 4.24, SD=0.48). However, statement no. 4 offering continuous feedback regarding progress toward accomplishing learning objectives especially in the laboratory in TLE" and statement no. 5 "having online lectures that could make our lesson be shorter and more to the point than lectures in live classrooms which often extend far beyond the attention span of the audience" both got (M= 4.20, SD=0.50) which means that indicates that teachers got the remark of *always* and interpreted as *excellent* in engaging on it respectively. This meant that amidst the pandemic, teachers were able to show their competency in teaching in terms of lecture discussion method during virtual class.

Table 3. Level of Teaching Strategies in Online Distance Learning in terms of Inquiry-based Method

STATEMENT	Mean	SD	Remarks
My teacher was able to:			
1. Compose small groups' differing ability levels and use a variety of learning activities to master material initially developed by my teacher.	4.34	0.47	Always
2. Create forum for us to discuss more of our topic especially in the specific topic like mensuration and calculation.	4.27	0.63	Always
3. Find convenient and effective way to understand the online class by means of collaborative activities in such TLE activities in technical activities.	4.37	0.62	Always
4. Internalize the knowledge and skills acquired from tasks.	4.46	0.55	Always
5. Allow time for us to socialize and incorporate an icebreaker.	4.32	0.52	Always
Grand Mean/SD **Verbal interpretation**	4.35	0.56	Always Excellent

Table 3 above shows the level of teaching strategies in Online Distance Learning in terms of inquiry-based method statement no. 1 "Compose small groups' differing ability levels and use a variety of learning activities to master material initially developed by the teacher" as shown with (M= 4.34, SD=0.47). Statement no. 2, "Create forums for us to discuss more of our topic especially in the specific topic like mensuration and calculation" with (M=4.27, SD= 0.63). Statement no. 3, "Find convenient and effective way to understand the online class by means of collaborative activities in such TLE activities in technical activities" got (M=4.37, SD= 0.62). Statement no. 4, "Internalize the knowledge and skills acquired from tasks" got (M=4.46, SD=0.55) and statement no. 5 "the teacher allow time for us to socialize and incorporate an icebreaker" with M=4.32, SD=0.52). The Grand mean of the table 3 resulted with M=4.35, SD= 0.56) with a remark of *always* with verbal interpretation of *excellent*. The result implies that the students perceived the teacher's performed excellently amidst pandemic in terms of inquiry based method.

Table 4. Level of Teaching Strategies in Online Distance Learning in Terms of Visualization

STATEMENT	Mean	SD	Remarks
My teacher was able to:			
1. Explain what's written on our module for further understanding.	4.10	0.66	Often
2. Teach natural and logical that you choose colorful and funny images over charts and tables.	4.34	0.68	Always
3. Combine them with the shapes and tools that are provided by the virtual classroom's software to organize your lesson.	4.29	0.45	Always
4. Draw from the news, social media, and any other source you see fit to complete the lesson's content.	4.46	0.59	Always
5. Involve the learners by jointly creating a presentation on a topic by using the virtual classroom's additional screens as slides in the PowerPoint presentation.	4.29	0.51	Always
Grand Mean/SD **Verbal interpretation**	**4.30**	**0.60**	**Always Excellent**

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Table 4 presents the level of teaching strategies in Online Distance Learning in terms of Visualization. Statement no. 1 "The teacher explains what's written on our module for further understanding" resulted as (M=4.10, SD= 0.66) interpreted as often. Statement no. 2 that the teacher Teach natural and logical that you choose colorful and funny images over charts and tables with of M=4.34, SD= 0.68). Statement no. 3 "Combine them with the shapes and tools that are provided by the virtual classroom's software to organize your lesson" with (M=4.29, SD=0.45). Statement no 4 "Draw from the news, social media, and any other source you see fit to complete the lesson's content" got (M=4.46, SD=0.59). Statement no. 5, "teacher Involve the learners by jointly creating a presentation on a topic by using the virtual classroom's additional screens as slides in the PowerPoint presentation" got (M=4.29, SD=0.51). Statements 2, 3, 4, 5 got the remarks of *always* verbal interpretation of excellent. To sum up the weighted mean, it resulted as (M=4.30, SD=0.60) with the remark *always* and verbal interpretation of *excellent*. This indicates that teachers were able to demonstrate their competency in teaching in terms of lecture discussion method during virtual class.

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Table 5. The Level of Teaching Strategies in Online Distance Learning in Terms of Elaboration

STATEMENT	Mean	SD	Remarks
My teacher was able to:			
1. Keep our lessons short, with explanations clear-cut and concise but with better understanding.	4.20	0.55	Always
2. Divided, and pre-assigned or auto-assigned into smaller groups for more focused discussions on a particular topic.	4.29	0.67	Always
3. Integrate lesson to my daily living.	4.17	0.62	Often
4. Reconstruct more meaningful knowledge in her teaching TLE.	4.00	0.58	Often
5. Initiates questions that, developed through steps of investigations, attained to conclusion on certain phenomena in such topic in TLE.	4.24	0.62	Always
Grand Mean/SD	**4.18**	**0.62**	**Often**
Verbal interpretation			**Very Satisfactory**

Table 5 presents the Level of Teaching Strategies in Online distance learning in Terms of Elaboration. The statements are as follows: Statement no 1, "The teachers keep our lessons short, with explanations clear-cut and concise but with better understanding" got (M=4.20, SD= 0.55) with remarks of *always*. Statement no. 2, "Divided, and pre-assigned or auto-assigned into smaller groups for more focused discussions on a particular topic got (M=4.29, SD=0.67) also remarks as *always*. The statement no. 3 the teacher integrate lesson to the students daily living with the (M=4.17, SD=0.62) and remarks of *often*. Statement no. 4, "Reconstruct more meaningful knowledge in her teaching TLE" (M=4.00, SD=0.58) with remarks of *often*. Statement no. 5, "Initiates questions that, developed through steps of investigations, attained to conclusion on certain phenomena in such topic in TLE", (M=4.24, SD= 0.62) and remarks of always. The overall weighted mean resulted as 4.18, standard deviation of 0.62 with *often* remarks and verbal interpretation of *very satisfactory*. This specifies that the teachers were able to show their competency in teaching in terms of elaboration in method during virtual class.

Level of Critical Thinking Skills
The level of Critical thinking skills in terms of alertness, flexibility and decision making were treated statistically using the weighted mean and standard deviation accompanied by a five-point rating scale. The table shows the indicative statement, weighted mean, standard deviation and remarks.

Table 6. Level of Critical Thinking Skills of the Students in TLE in terms of Alertness

STATEMENT	Mean	SD	Remarks
As a Students, I am able to:	3.85	0.75	Often
1. Learn experiences such as field trips, role playing, model building, assembling objects, games, and other physical activities are my interest.			
2. Prefer to do things with a well-structured and attainable plan.	3.95	0.70	Often
3. Consult consistently on facts rather than subjective opinions on decision making.	4.02	0.68	Often
4. Resolve group conflicts.	3.98	0.68	Often
5. I can resolve group conflicts.	3.88	-.71	Often
Grand Mean/SD	**3.94**	**0.71**	**Often**
Verbal interpretation			**Very Satisfactory**

Table 6 presents the level of critical thinking skills of the students in TLE in terms of Alertness. Statement no. 1, "The students learn experiences such as field trips, role playing, model building, assembling objects, games, and other physical activities are my interest" got (M=3.85, SD=0.75). Statement no. 2, "Prefer to do things with a well-structured and attainable plan" got (M=3.95, SD= 0.70). Statement no. 3, "Consult consistently on facts rather than subjective opinions on decision making" got (M=4.02; SD=0.68). Statement no. 4, "Resolve group conflicts with (M=3.98, SD=0.68). And lastly statement no. 5, "the students were able to resolve the group conflict" with (M=3.88, SD=-.71). The grand weighted mean resulted as 3.94; SD= 0.71 with overall remark of *often* and verbal interpretation of *very satisfactory*. This meant that amidst the pandemic, students were able to show apparently their critical thinking skills in terms alertness.

Table 7. Level of Critical Thinking Skills of the Students in TLE in terms of Flexibility

STATEMENT	Mean	SD	Remarks
As a Students, I am able to:			
1. Do things independently.	4.29	0.59	Always
2. Have a huge interest in interpersonally-oriented careers like teaching, counselling, social work, politics or managerial jobs.	4.32	0.56	Always
3. Use to handle, touch or manipulate on what is to be learned.	4.51	0.55	Always
4. Have the ability to switch between thinking about two different concepts or to think about multiple concepts simultaneously.	4.41	0.62	Always
5. Strive for my future.	4.32	0.52	Always
Grand Mean/SD	**4.37**	**0.58**	**Always**
Verbal interpretation			**Excellent**

Table 7 shows the result of the level of critical thinking skills of the students in TLE in terms of flexibility, the stamen are as follows: The students do the thing independently, (M=4.29, SD= 0.59); The students have a huge interest in interpersonally-oriented careers like teaching, counselling, social work, politics or managerial jobs, (M= 4.32, SD=0.56); the students use to handle, touch or manipulate on what is to be learned, (M=4.51, SD=0.55); have the ability to switch between thinking about two different concepts or to think about multiple concepts simultaneously, (M=4.41, SD=0.62); and the students strive for their future with (M=4.32, SD= 0.52). The overall weighted mean is 4.37 and SD of 0.58 with remarks of always and overall verbal interpretation of excellent. This indicates that in online distance learning, students were able to display their flexibility competency in the level of critical thinking skills.

Table 8. Level of Critical Thinking Skills of the Students in TLE in terms of Decision Making

STATEMENT	Mean	SD	Remarks
As a Students, I am able to: 1. Enjoy working with numbers and equations.	4.27	0.50	Always
2. Remember information through numbers, sequence and patterns.	4.29	0.45	Always
3. Have high interest in courses like computer technology.	4.51	0.50	Always
4. Reading and writing, and comprehension gives me a sort of enjoyment more than anything else.	4.46	0.50	Always
5. Explore and investigate issues related to our present situation.	4.20	0.45	Always
Grand Mean/SD **Verbal interpretation**	**4.35**	**0.50**	**Always** **Excellent**

Table 8 shows the result on the level of critical thinking skills of the students in TLE in terms of decision making. Statement no. 1, "The students were able to enjoy working with numbers and equations", got (M=4.27, SD= 0.50). Statement no. 2, "Remember information through numbers, sequence and patterns" with (M=4.29, SD= 0.45). Statement no. 3, "The students have high interest in courses like computer technology", with (M=4.51, SD= 0.50).Statement no. 4, "Reading and writing, and comprehension gives me a sort of enjoyment more than anything else", with (M=4.46, SD=0.50). Lastly statement no. 5, "Explore and investigate issues related to our present situation" with (M=4.20, SD= 0.45). The overall grand mean of 4.35, Standard deviation of 0.50 with remarks of always and verbal interpretation of excellent. The result indicates students were able to show their critical thinking skills in terms of decision making.

Level of Technical Skills
The level of technical skills of the Students in TLE in terms of Mensuration and Calculation, use of tools and equipment and occupational health and safety were treated statistically. The table shows indicative statement, weighted mean, standard deviation and remarks.

Table 9. Level of Technical Skills of the Students in Online Distance Learning in terms of Mensuration and Calculation

STATEMENT	Mean	SD	Remarks
As a Students, I am able to: 1. Perform measuring certain distance, time and mass needed for TLE subjects.	4.59	0.49	Always
2. Understand the different types of measuring.	4.37	0.53	Always
3. Share my knowledge in identifying the measure of materials used in cooking.	4.37	0.53	Always
4. Know the conversion of size e.g. meter to centimeter.	4.20	0.55	Always
5. Put the amount of the thing into numbers.	4.17	0.49	Often/
Grand Mean/SD **Always**	**4.34**	**0.54**	**Always** **Excellent**

Table 9 above shows the level of technical skills of the students in TLE in terms of mensuration and calculation the statements are as follows: statement no. 1, "The students were able to perform measuring certain distance, time and mass needed for TLE subject" resulted the (M=4.59, SD= 0.49); statement no. 2, "the students understand the different types of measuring" with the (M=4.37,SD= 0.53) same with the statement number three that the students were able to share knowledge in identifying the measure of materials used in cooking. Statement no. 4, "The students know the conversion of e.g. meter to centimeter" with a (M=4.20, SD= 0.55). Lastly statement no. 5, "The student put the amount of a thing into numbers" with the (M=4.17, .The overall weighted mean resulted with 4.34, standard deviation 0.54, remarks of *always* and verbal interpretation

of *excellent*.   The result indicates that the respondents in online distance learning were able to show their technical skills in the mensuration and calculation.

Table 10. Level of Technical Skills of the Students in TLE in terms of Use of Tools and Equipment

STATEMENT	Mean	SD	Remarks
As a Students, I am able to: 1. Identify the tools in the specific activity in TLE.	4.51	0.59	Always
2. Use the tool properly with the help of my teacher	4.59	0.54	Always
3. Demonstrate the uses of the tools in TLE.	4.46	0.63	Always
4. Use mixing bowl in proper stroke of its function.	4.29	0.51	Always
5. Arrange the kitchen utensils according to its function accordingly.	4.41	0.54	Always
Grand Mean/SD **Verbal Interpretation**	**4.45**	**0.57**	**Always** **Excellent**

The table 10 above result shows that the students were able to identify tools in the specific activity in TLE (M=4.51, SD= 0.59). The second statement stated that the student makes use of tool properly with the help of their teacher resulted of (M=4.59, SD= 0.54). The student demonstrates the uses of tools in TLE got the (M=4.46, SD= 0.63). The student used mixing bowl in proper stroke of its function, with (M=4.29, SD=0.51). And the student arranges the kitchen utensils according to its function accordingly in (M= 4.41, SD= 0.54). The overall weighted mean resulted in 4.45, standard deviation of 0.57 with remarks of *always* and verbal interpretation of *excellent*. This denotes that students were able to show their technical skills with the use of tools and equipment in TLE subject in online distance learning.

Table 11. Level of Technical Skills of the Students in TLE in terms of Occupational Health and Safety

STATEMENT	Mean	SD	Remarks
As a Students, I am able to: 1. I wash my hand frequently.	4.54	0.50	Always
2. I always take vitamins.	4.37	0.53	Always
3. I eat nutritious food.	4.37	0.48	Always
4. I aware to the safety protocols.	4.44	0.50	Always
5. I watch news for me to become aware in the present situation especially in the health news.	4.44	0.54	Always
Grand Mean/SD **Verbal Interpretation**	**4.43**	**0.51**	**Always** **Excellent**

The table 11 above shows the result in the level of technical skills of the students in TLE in terms of occupation health and safety. Statement no. 1, "I wash hands frequently" with the (M=4.54, SD= 0.50). Statement no. 2, "I always take vitamins ", with (M=4.37, SD= 0.53). Statement no. 3, "I eat notorious food both resulted a (M=4.37, SD= 0.48). Statement no. 4, "I am aware to the safety protocols and statement no. 5, "I watch news to become aware in the present situation especially in health news, both got a (M=4.44, SD= 0.50), with the overall weighted mean of 4.43, standard deviation of 0.51, remarks of *always* and verbal interpretation of *excellent*. The students in online distance learning were able to show their technical skills in the terms of occupational health and safety amidst the pandemic

Effect of teaching strategies in online distance learning on critical thinking skills and technical skills of the students in TLE

This data shows based on the result the effect of online distance learning in the critical thinking skills and technical skills of the students. Minitab 14 was used in computing the data gathered and treated them statistically using Linear Regression Analysis. The computed p-values were compared to the level of significance at 0.05 to determine the Effect of teaching strategies in online distance learning on the critical

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Volume: 6 | Issue: 6 | June 2021   **- Peer Reviewed Journal**

thinking skills and technical skills of selected grade 7 and 8 students. The table shows the variables, t-value, p-value, decision on H_0 and the analysis

Table 12. Effect of teaching strategies in Online Distance Learning on the critical thinking skills as to Alertness of the students

Variables	t-value	p-value	Decision on H_o	Analysis
Lecture Discussion Method/ Virtual Class Alertness	3.96	0.000	Reject	Significant
Inquiry-based Method Alertness	2.36	0.024	Reject	Significant
Visualization Alertness	1.10	0.278	Accept	Not Significant
Elaboration Alertness	-2.27	.000	Reject	Significant

*significant at .05 level of significance

Table 12 consists of the results on the effect of teaching strategies in Online Distance Learning in the critical thinking skills as to alertness of the selected students. The variable in the lecture discussion / virtual class results with the (t= 3.96, p= 0.000) decision on is to reject the Ho and analysis of *significant*. The inquiry-based method with the (t=2.96, p=0.024) the decision is to reject the Ho and analysis of *significant*. The visualization as to alertness got the (t= 1.10; p= 0.278) the decision is to accept the Ho and analysis of not significant. The elaboration as to alertness resulted with the (t= -2.27, p=.000) decision of reject Ho and has the analysis of *significant*. This conclude that teaching strategies in online distance learning in terms of lecture discussion, inquiry-based method and elaboration method effect the critical thinking skill of the students as to alertness, while visualization method has no significant effect on the critical thinking skill of the students as to alertness. This means that student prefer to do things with a well-structured and attainable plan.

Table 13. Effect of teaching strategies in Online distance learning on the critical thinking skills as to Flexibility of the students

Variables	t-value	p-value	Decision on H_o	Analysis
Lecture Discussion Method/ Virtual Class Flexibility	-0.16	0.873	Accept	Not Significant
Inquiry-based Method Flexibility	5.71	0.000	Reject	Significant
Visualization Flexibility	0.12	0.907	Accept	Not Significant
Elaboration Flexibility	-0.11	0.915	Accept	Not Significant

Table 13 shows the results in the effect of teaching strategies in online distance learning on critical thinking as to flexibility of the selected students. The results in the lecture discussion method/ virtual class in the (t=0.16, p= 0.873, accept the decision on Ho, analysis is *not significant*. The inquiry-based on flexibility of the students with the (t= 5.71, p= 0.000) reject the decision on Ho, and analysis of *significant*. The Visualization as to flexibility of the students resulted in the (t=0.12, p= 0.907), the decision is to accept the Ho and analysis of *not significant*, Lastly, in the elaboration as to flexibility with (t= -0.11, p-value of 0.915), accept the decision on Ho and analysis is *not significant*. This conclude that teaching strategies in online distance learning in terms of lecture discussion/virtual class, visualization and elaboration has no significant effect to the critical thinking of the students as to flexibility, while inquiry-based method has significant effect to the critical thinking skills of

the students as to flexibility. This means that students like better sharing their different ideas and ways of thinking to the discussion.

Table 14. Effect of teaching strategies in online distance learning on the critical thinking skills as to Decision Making of the students

Variables	t-value	p-value	Decision on H_o	Analysis
Lecture Discussion Method/ Virtual Class Decision making	1.67	0.104	Accept	Not Significant
Inquiry-based Method Decision making	5.25	0.000	Reject	Significant
Visualization Decision making	-0.25	0.803	Accept	Not Significant
Elaboration Decision making	-0.39	0.695	Accept	Not Significant

The table 14 above indicates the result in the effect of teaching strategies in online distance learning on critical thinking skills as to decision making of the TLE students. In the lecture discussion method/ virtual discussion with the (t=1.67, p= 0.104) decision is to accept the Ho, analysis of *not significant*. The Inquiry-based method as to decision making has the t-value of (t= 5.25, p= 0.000), the decision is to reject the Ho, with the analysis of *significant*. The visualization as to decision making with (t= -0.25, p= 0.803), the decision is to accept the Ho, with the analysis of *not significant*. Elaboration on decision making has the(t= -0.39, p= 0.695), the decision is to accept the Ho, the analysis is *not significant*. This conclude that teaching strategies in online distance learning in terms of lecture discussion,/virtual class, visualization and elaboration has no significant effect to the critical thinking skills of the students as to decision making, while-inquiry based method has significant effect to the critical thinking skills of the students as to decision making. This means that students engaged in a class with a questions or problem and strategies to develop subsequent solution and explanation.

Table 15. Effect of teaching strategies in online distance learning on technical skills of the students as to Mensuration and Calculation

Variables	t-value	p-value	Decision on H_o	Analysis
Lecture Discussion Method/ Virtual Class Mensuration and Calculation	1.97	0.057	Accept	Not Significant
Inquiry-based Method Mensuration and Calculation	2.23	.032	Reject	Significant
Visualization Mensuration and Calculation	0.22	0.828	Accept	Not Significant
Elaboration Mensuration and Calculation	-0.79	0.436	Accept	Not Significant

Table 15 above shows the result on the effect of teaching strategies in online distance learning on technical skills of the selected student in Liliw National High School, Liliw Laguna. The results are as follows; the lecture discussion method/ virtual class as to mensuration and calculation it has the (t= 1.97, p= 0.05), accept the decision on Ho, with the analysis of *not significant*. The inquiry-based method in mensuration and calculation has the (t= 2.23, p= 0.32), decision is to reject the Ho and the analysis is *significant*. The visualization has the (t= 0.22, p= 0.828), decision is to accept the decision in Ho with the analysis of *not significant*. Lastly in elaboration as to mensuration and calculation (t= -0.79, p= 0.436), the decision is to accept Ho and the analysis is not *significant*. This conclude that teaching strategies in online distance learning in terms

of lecture discussion,/virtual class, visualization and elaboration has no significant effect to the technical skills of the students as to mensuration and calculations, while-inquiry based method has significant effect to the technical of the students as to mensuration and calculations. This implies that students prefer to do things that allow them to build knowledge through exploration, experience and discussion.

Table 16. Effect of teaching strategies in online distance learning on the technical skills of students as to Use of tool and equipment

Variables	t-value	p-value	Decision on H_o	Analysis
Lecture Discussion Method/ Virtual Class Use of tool and equipment	0.57	0.572	Accept	Not Significant
Inquiry-based Method Use of tool and equipment	2.80	0.008	Reject	Significant
Visualization Use of tool and equipment	0.73	0.467	Accept	Not Significant
Elaboration Use of tool and equipment	0.48	0.635	Accept	Not Significant

The table 16 presents the effect of teaching strategies in online distance learning on technical skills as to use of tool and equipment of the students in Liliw National High School, Liliw Laguna. The result in the lecture discussion method/ virtua lclass is (t= 0.57, p= 0.572), decision is to accept the Ho and the analysis is *not significant*. The inquiry-based method has the (t= 2.80, p= 0.008), the decision is to reject the Ho and the analysis is *significant*. The visualization has the (t= 0.73, p=0.467), accept the decision on Ho, the analysis is *not significant*. In elaboration (t= 0.48, p= 0.635), accept the decision on Ho, and the analysis is *not significant*. This conclude that teaching strategies in online distance learning in terms of lecture discussion,/virtual class, visualization and elaboration has no significant effect to the technical skills of the students as use of tools and equipment, while-inquiry based method has significant effect to the technical of the students as to use of tools and equipment. This means that students learn to use tools and equipment with the aid of their teacher.

Table 17. Effect of teaching strategies in Online Distance Learning on technical skills as to Occupational health and safety

Variables	t-value	p-value	Decision on H_o	Analysis
Lecture Discussion Method/ Virtual Class Occupational health and safety	3.04	0.004	Reject	Significant
Inquiry-based Method Occupational health and safety	1.94	0.060	Accept	Not Significant
Visualization Occupational health and safety	0.34	0.734	Accept	Not Significant
Elaboration Occupational health and safety	-1.63	0.111	Accept	Not Significant

Table 17 above shows the result in the effect of teaching strategies in Online Distance Learning on technical skills as to occupational health and safety of students. The statement has the result in the lecture discussion / virtual class has the (t= 3.94, p= 0.004), the decision is to reject the Ho, and the analysis is *significant*. The inquiry-based method has the (t= 1.94, p= 0.060), the decision is to accept the Ho, and the analysis is *not significant*. In the visualization the (t= 0.34, p= 0.734), and the decision is to accept the Ho, with the analysis of *not significant*. The elaboration shows the result of (t= -1.63, p= 0.111), the decision is to accept the Ho and the analysis is *not significant*. This conclude that teaching strategies in online distance learning in terms of inquiry based method, visualization and elaboration has no significant effect to the technical skills of

the students as to occupational health and safety, while lecture discussion/virtual class has significant effect to the technical skills of the students as to occupational. This means that students like better their teachers to deliver lecture virtually.

V. CONCLUSION
Drawn the results of the study, the following results are set forth;

The effect of teaching strategies in online distance learning in the critical thinking skills of the students as to alertness, flexibility and decision making has not sustained the research hypothesis; therefore; the null hypothesis was partially accepted.

In the effect of strategies in online distance learning in the technical skills of the students as to mensuration and calculation, use of tools and equipment and occupational safety has partially sustained the research hypothesis therefore the null hypothesis was also partially accepted ..

RECOMMENDATION
In the light of the findings and conclusion of the study, the following recommendations were drawn.
1. The strategies of teaching in teaching technology and livelihood education (TLE) needs to maintain and enhanced to bring out the best of the students' performance.
2. The lecture discussion in the virtual methods suggests having more engaging activities for the students to be motivated.
3. Continue to prepare for the current situation that our education system is facing today for the benefit of our students and their future.
4. The school must have continuous program implementation for LAC session or learning action cell training to develop passion in the teaching profession amidst pandemic.
5. For future researches, develop a research that could have a continuous monitoring in this study.

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