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IMPROVING PERFORMANCE LEVEL OF CASIGURAN TECHNICAL VOCATIONAL SCHOOL GRADE – 10 COURAGE STUDENTS IN EQUATION OF CIRCLE THROUGH VIDEO LESSON AMIDST PANDEMIC

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ABSTRACT

Philippines was ranked second-lowest for mathematics in PISA 2018 with a score of 353 points in mathematical literacy, below the average of 489 points. Additionally, in the researcher's one year of teaching mathematics 10 under K to 12 curriculum, students always got low performance level in the quarterly assessments. The average performance level of the students handled by the researcher in mathematics 10 was 48.74, 44.83, 44.42, and 44.95 for the first, second, third and fourth quarter assessment respectively for the school year 2019 – 2020. Moreover, the average performance level of grade 10 students handled by the researcher for this school year 2020 – 2021 for the first quarter where the new normal system in education started due to COVID19 is 43.95. This implies that the performance of students is lower in the modular printed modality compare to face to face modality. Lastly, for the school year 2019 – 2020, item analysis after periodical tests revealed that competencies on "equation of a circle" has the most numbered of not mastered items. With the mentioned circumstances, the researcher was motivated to take an action to improve the academic performance of students in one of the least learned topics in mathematics 10 especially in this time of pandemic. A pre-experimental research design was used in this research specifically one-group pretest-posttest design seeing that it determined the effects of a video lesson as an intervention. This action research aimed to determine if the developed video lesson can improve the academic performance level of the students or not. The respondents of this action research were the Grade 10 – Courage students of Casiguran Technical Vocational School handled by the teacher-researcher in the school year 2020-2021. Based from the analysis of the data gathered, the following findings revealed; (1)

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Student respondents garnered a mean score of 4.97 or performance level of 21.62% during the pretest. (2) Student respondents garnered a mean score of 14.71 or performance level of 63.96%. (3) T-tests of pretest and posttest revealed the computed absolute t value which is 11.18 and the tabulated t value which is 2.03 with 0.05 level of significance (two tail distribution). On the light of the findings, the following conclusions are drawn: (1) The performance level of the student-respondents is low and this can be attributed to the fact that the video lesson was not introduced yet. Students don't know yet the lesson and the only thing that they have during pretest were their retained knowledge from prior lesson. (2) The performance level of student-respondents increased from 21.62% to 63.96% and can be attributed to the fact that the video lesson was introduced already. Indeed, the video lesson is effective in increasing the performance level of the students and was helpful to every student in understanding the concept of equation of circle. All of the student-respondents were able to garnered a higher score in posttest compared to their scores during pretest. (3) The null hypothesis must be rejected since the computed absolute t value is greater than the tabulated value. Therefore, there is a significant difference in the means scores of Grade 10 – Courage students during pretest and posttest. This implies that the video lesson on equation of circle as an intervention is effective in improving the performance level of student-respondents. Based from the conclusions drawn after the analysis and interpretation of the data gathered from the study, the following are recommended: (1) The researcher shall share the result of this study to his fellow teachers in Casiguran Technical Vocational School through school – based INSET. (2) The researcher will seek an approval from the school head to make the video lesson used as an intervention in this study available for use in the school and will serve as an instructional material.

Keywords:
Performance Level, Video Lesson, Equation of a Circle, Pandemic

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INTRODUCTION

Mathematics provides students with the essential skills in reasoning, decision-making and problem solving to help them make sense of many aspects our rapidly changing world (FAPE, 1988). It helps learners develop their ability to face real-life problems. It was mentioned in Mathematics Framework for Philippine Basic Education that high school mathematics prepares students for university and college as well as provides them with the comprehensive set of mathematical concepts and skills that they need for them to find employment. Philippines was ranked second-lowest for mathematics in PISA 2018 with a score of 353 points in mathematical literacy, below the average of 489 points. With that, DepEd Secretary Briones stressed that no Filipino learners should be left behind and that it takes a nation to educate a child. Hence, DepEd calls the entire nation to take active involvement, cooperation and collaboration in advancing the quality of basic education in the Philippines. Furthermore, in the researcher's one year of teaching mathematics 10 under K to 12 curriculum, students always got low performance level in the quarterly assessments. For instance, the average performance level of the students is 48.74, 44.83, 44.42, and 44.95 for the first, second, third, and fourth quarter assessment respectively for the school year 2019 – 2020. Meanwhile, the average performance level of grade 10 students handled by the researcher for this school year 2020 – 2021 for the first quarter is 43.95. This implies that the performance of students is lower in the modular printed modality compare to face to face modality. Also, for the school year 2019 – 2020, item analysis after periodical tests revealed that competencies on "equation of circle" has the most numbered of not mastered items. With this, teachers should take an action to improve the academic performance of students in one of the least learned topics in mathematics 10 especially in this kind of setup of education which is the printed modular modality.

MATERIALS AND METHODS

To improve the academic performance of students in equation of circle covered in the third quarter of mathematics 10, the researcher used a video lesson. It has two parts namely the objectives and discussion. The objective part aims to enlighten the students as to what is to be learned, while the discussion part aims to discuss the lesson by introducing the concept, giving examples, and presenting a contextualized and localized solved problem. It has a duration of

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seventeen minutes and fifty-four seconds. The video was checked and validated by the Division Mathematics Coordinator for JHS & SHS. A pre-experimental research design was used in this research specifically one-group pretest-posttest design seeing that it determined the effects of a video lesson as an intervention. This action research aimed to determine if the developed video lesson can improve the academic performance level of the students or not. Before introducing the developed video lesson on equation of circle to student-respondents, a pretest was given to them. Video lessons on equation of a circle were introduced followed by administering the posttest. The respondents of this action research were the Grade 10 – Courage students handled by the teacher-researcher for the school year 2020-2021. This action research aimed to determine the effectiveness of video lesson to students who are diverse and for that reason, the teacher-researcher purposively selected the students from section Courage since they are considered to be heterogenous group. Grade 10-Courage is composed of 24 males and 14 females with a total of 38. The researcher prepared a fifteen (15) multiple choice test and a word problem. He prepared a rubric for the problem solving in order for the student-respondents to be aware as to how they will be given points or score. Due to the pandemic, the researcher was not able to administer both the pretest and posttest in a face to face setup as what the researcher usually does. Instead, he included the questionnaires to the modules being given to the student-respondents. After 2 weeks, the researcher retrieved their answer sheets. After the administration of the pretest, the researcher uploaded the developed video lesson in social media and instructed the student-respondents to watch it. After retrieving the answer sheets of the student-respondents, the teacher-researcher distributed right away the questionnaires for posttest along with the modules on that week and after a couple of weeks, the researcher retrieved them. Moreover, pretest and posttest scores were compared to determine the significant difference in the students' performance before and after using the video lesson.

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RESULTS AND DISCUSSION

	No. of Students	Total Scores	Mean	Performance Level
Pretest	38	189	4.97	21.62%
Posttest	38	559	14.71	63.96%

Table 1: **Performance Level of Grade 10 – Courage during Pretest and Posttest**

It can be gleaned from the table that the performance level of the student-respondents during pretest is low and this can be attributed to the fact that the video lesson was not introduced yet. Students don't know yet the lesson and the only thing that they have during pretest were their retained knowledge from prior lesson. The performance level of student-respondents increased from 21.62% to 63.96% and can be attributed to the fact that the video lesson was introduced already. Indeed, the video lesson is effective in increasing the performance level of the students and was helpful to every student in understanding the concept of equation of circle. One of the student respondents said that the video lesson that was introduced to them was very detailed, specific, and easy to comprehend. All of the student-respondents were able to garnered a higher score in posttest compared to their scores during pretest.

t-Test: Paired Two Sample for Means		
	Variable 1	*Variable 2*
Mean	4.973684211	14.71052632
Variance	31.5398293	24.64366999
Observations	38	38
Pearson Correlation	0.490250345	
Hypothesized Mean Difference	0	
df	37	
t Stat	-11.17515648	
P(T<=t) two-tail	2.03922E-13	
t Critical two-tail	2.026192463	

Table 2: **t-Test of Pretest and Posttest of Grade 10 – Courage**

To determine if there is a significant difference in the performance level of Grade 10 - Courage students before and after using the video lesson on equation of circle, paired t-test was used. Table 2 shows the computed absolute t value which is 11.18 and the tabulated t value which is 2.03 with 0.05 level of significance (two tail distribution). This means that the null hypothesis must be rejected since the computed absolute t value is greater than the tabulated

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value. Therefore, there is a significant difference in the means scores of Grade 10 – Courage students during pretest and posttest. This implies that the video lesson on equation of circle as an intervention is effective in improving the performance level of student-respondents.

CONCLUSION

Zhang, D., Zhou, L., Briggs, R. O., & Nunamaker Jr, J. F. (2006) concluded in their study that interactive video brings significantly better learning performance. DepEd stressed that education must continue even in the height of the pandemic. One of the challenges to every educator is to help learners improve their performance amidst the situation that all nation has been facing. During this trying time, video lesson on equation of circle that was developed by the researcher proves that it can be an aid to give students a meaningful learning experience even they're not in the classroom. They can access it wherever they are and whenever they want. It is for all types of learners as well. Some students struggle during the face to face setup due to the fast phasing of the lesson and this video lesson have bridged that gap because students can pause and even rewind the video if there's anything they've missed.

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