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Radio-Based Instruction in Teaching Literary Criticism

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***Abstract*—** *Radio-Based Instruction is one of the modalities that is being implemented through the use of radio station and providing learning in the comfort of their own homes. This study aimed to determine the effectiveness of the Radio-Based Instruction in teaching literary criticism to Grade 10 students of Caputatan Norte Integrated School of Medellin District, Medellin, Cebu for School Year 2020 – 2021. Specifically, this study identified the pretest and posttest total scores of the experimental group (learners under Radio-Based Instruction and Modular Learning) and control group (learners under Modular Learning only). This further sought to find whether there was a significant difference between the pretest and posttest scores of the control and experimental group. Uses and Gratifications Theory and Interactive Radio Instruction Approach supported this study. After the intervention process, a Mann-Whitney U-test was conducted to reveal the significant difference within the control and experimental group between the pretest and posttest scores. The means of the pretest and posttest were being compared as basis for the t-test. Results revealed that there was a significant difference in experimental group's scores in the pretest and posttest while there was no significant difference on the control group's total scores in the pretest and posttest. There was no significant difference on the pretest and posttest scores of control and experimental group and there was a significant difference between the posttest scores of control group and the experimental group. This implied that Radio-Based Instruction contributes to the improvement of the overall scores of the students. Improving Radio-Based Instruction, learning modules and Radio stations were recommended in this study.*

***Keywords*—** *Radio-based instruction, learning modality, radio station, educational radio, campus radio, distance learning, interactive radio instruction*.

I. INTRODUCTION

The COVID-19 pandemic has been one of the significant disturbances of learning the world has ever known. Education has been limited to the learners because of social distancing, and the schools have been closed to prevent the spread of the virus. Numerous nations turned to online-based instruction to ensure that learning never stops. Online-based education requires various equipment such as internet, mobile phones, tablet, laptop, etc., and several learners cannot afford to comply with the mentioned demands. (UNESCO, 2020). Considering these technological factors, most countries are also using radio-based programs or Radio-Based Instruction (RBI) to provide distance learning (UNESCO, 2020). As a mode of learning, Radio Based Instruction delivers education by bringing it to the comfort of learners' own homes without spending too much on the internet and other gadgets. The broadcast of lessons will aid the learners to grasp the learning and make instruction exuberant and convenient. Modular learning was the most preferred modality, but answering the modules alone will not be easy for learners. Other modalities can aid the learning through modular instruction, and Radio-based Instruction is one of them.

"Radio-Based Instruction" was created through the Alternative Learning System (ALS) program. It serves as their alternative learning delivery mode using radio broadcasts to deliver the ALS programs. As a distance learning practice, it can provide instruction by bringing it to where the learners are. It points to supplying learning opportunities to learners and securing equal basic instruction through the broadcast of lessons (Department of Education, 2015). Radio-based instruction is adapted from Interactive Radio Instruction Approach founded by Mary Burns. It is a teaching approach that uses one-way radio to reach two listeners (students and their teacher broadcasters). With this audience using the direct-instruction method, the session is usually prerecorded. Curriculum creators can use regular IRI broadcasts to scaffold teaching across several episodes and model tasks that teachers and students can complete in between broadcasts, such as brief tests with locally available resources. The approach is collaborative since the teacher-broadcaster speaks to students, and students respond to radio announcements and communicate with each other (Burns, 2011). Research has found the advantages of employing radio technology in teaching. According to several studies performed throughout the world, radio has emerged as an essential tool for bridging educational disparities by aiding students in improving their academic achievements. Many polls show that radio has been utilized to reach large audiences for a minimal cost in Africa, Latin America, and Pakistan. Digital radio has been used in schools worldwide since the 1970s (Olakulehin, 2016).

At least 10 million students will be unable to return to school in 2020 due to a lack of access to the technologies needed for distance learning and the resources they need at home. (Save the Children International, 2020). Of 537,487 elementary school students in Cebu, only 92,920, or 17.29 percent, have an internet connection (Deped 2020). Since face-to-face classes are still prohibited, The Department of Education uses blended/distance learning, which combines multiple remote learning modalities such as modular learning, TV, and radio-based instruction. According to the partial results of the Learner Enrollment and Survey Forms (LESFs) distributed during the enrollment period, 7.2 million enrollees tend to favor modular distance learning, TV and radio-based instructions, and other modalities for the school year 2020-

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2021, while only 2 million enrollees prefer online (DepEd, 2020).

Because of this, the Department of Education, Division of Cebu Province launched a Radio-Based Instruction Program dubbed as Himpilan as Sugbo where all the RBI Coordinators are gathered to record their classes to be broadcasted to different radio station partners. Other schools also launched their campus radio so that the teachers in their respective schools will be on-board broadcasting live with their instructions and assisting the learners in answering their modules/ home tasks (DepEd, 2020). As part of DepEd – Cebu Province, junior high schools of Medellin District implement modular distance learning. Still, only Caputatan Norte Integrated School has its campus radio that offers Radio-Based Learning with Modular Learning. The campus radio "100.0 CNIS FM" is one of the implementors of "Himpilan sa Sugbo" by DepEd Cebu Province through the segment "Kaalam sa Kahanginan". These two learning modalities are executed for the first time within the locality in reaction to the call for constant learning. Thus, the researcher desired to determine the efficacy of Radio-Based Instruction to all Junior High School learners in continuing effective education. Furthermore, the researcher determined the impact of Radio-Based Instruction in the junior high school level who listened attentively to the lesson broadcast (experimental group) and those who were not exposed to Radio-Based Instruction (control group). The study's findings served as an initial assessment of the implementors of this radio-based distance learning.

As a result, education goals based on content, or curriculum, are becoming less relevant. The focus shifts away from teachers as experts, away from learning facts and knowledge that are often incorrect or obsolete by the time a graduate need to utilize them, and toward techniques that focus on learning and the learner as a result of these and other variables (Tinapay & Tirol, 2021). Students were progressively being offered online opportunities for education, whether through modified teaching approaches or increased use of technology even in conventional classrooms. As a result, there is a need to describe the specific challenges that students face while taking online courses, as well as to identify pedagogical methods that can resolve and improve the chances of good online teaching and learning. As provided in the DepEd Order (D.O.) No. 013, s. 2020, the accessibility of learning services, the welfare and well-being of learners and DepEd staff, regional and national directives issued, and the preference of parents and learners are all factors to consider when deciding on particular learning delivery mechanisms to use (Diu et al ,2022).

II. METHODOLOGY

This chapter presented the research methodologies used in this study. This included the research design, research environment, research respondents, research instruments, data gathering procedure, data analysis, and the ethical consideration in this study.

Design

The researcher conducted a quasi-experimental design to determine the effectiveness of Radio-Based Instruction. A quasi-experimental method was used because the researcher aimed to evaluate interventions without randomization and to demonstrate causality between an intervention and an outcome. In this study, the respondents were assigned to one of two groups: the control group (who had only used the modular learning and had not taken part in Radio Based Instruction) or the experimental group (who had taken position on Radio Based Instruction and Modular Learning). A pretest took place before the treatment, and a post-test took place as close to the end of the treatment as possible. The testing had based on the chosen topic in English 10 under Literary Criticism.

Environment

This study was conducted at Caputatan Norte Integrated School, Junior High School Department, Division of Cebu Province for School Year 2020-2021. The school is located in Caputatan Norte, one of the barangays of Medellin in the northern part of Cebu. According to the DepEd Learner Information System, the junior high school population is composed of 162 students (LIS, 2020). Captain Norte is a barangay in Medellin known for its vast sugar cane plantations and tourist attractions, specifically the Zipline, Underground Cave, and Tinago Falls. Captain Norte Integrated School (formerly Caputatan Norte Elementary School) is located in Purok Orchids, surrounded by a sugar cane plantation. On June 24, 2017, the school above was turned into an integrated school headed by their principal, Mr. Abner F. Masong. The school currently has 15 teachers, 10 in elementary and 4 in junior high. This school offers a Radio-Based Instruction modality with Modular Learning, which was why the school fitted to be tested in this study.

Respondents

Since the topic chosen was from English 10, the researcher had chosen Grade 10 to be the study's respondents. There were 40 students in Grade 10, and they had to be divided into two groups, as shown in Table 1. Twenty-one students were assigned to the control group, and twenty-one students were in the experimental group. The researcher gathered and collected data from the mentioned respondents to determine the effectiveness of radio-based instruction.

TABLE 1. Distribution of Respondents

Variables	Range	Control Group				Experimental Group			
		F		%	Mean	*f*		%	Mean
		M	F			M	F		
Second Quarter Grade in English 10	91-95	1	3	20	81	1	2	15	81.2
	86-90	1	2	15		4	4	35	
	81-85	3	5	35		3	1	20	
	75-80	5	0	25		3	3	30	
	Below 75	0	0	0		0	0	0	
	Total	**20**		**100**		**21**		**100**	
Age	19-20	1	0	5	16.6	1	0	5	16.2
	17-18	8	4	55		5	9	65	
	15-16	5	3	40		2	4	30	
	Total	**21**		**100**		**20**		**100**	

Instruments

The researcher used the main gathering instrument, the Summative Tests, taken from the Self-Learning Home Task to obtain the necessary data. The self-learning home task was

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provided by the DepEd Division of Cebu province, constructed by the expert teachers of the division. After that, it underwent Quality Assurance Process and was reviewed by the Education Program Supervisor.

The summative test had two types: the pretest and the posttest. The pretest was taken by all the students of the two groups before the radio broadcast, and the posttest was taken after the radio broadcast. These tests consisted of the same questions, and the radio broadcast lasted for four weeks following the topics about Literary Criticism in English 10.

Data Gathering Procedure

This study was conducted in Caputatan Norte Integrated School, Junior High School Department, District of Medellin, with permission from the school's school head. Before the lesson broadcast, the students were gathered in school wearing face masks and face shields with proper social distancing. The data gathering started with a pretest, and the respondents answered it all together. The experimental group then listened to the lesson broadcast for four weeks while answering their home tasks. The control group responded to their homework without listening to the lesson broadcast. Each lesson broadcast had to be a one-hour class scheduled on Tuesday at 8:00 am. It consisted of the lessons and activities from the self-learning home task. The listeners interacted with the teacher-broadcaster through participating and answering on-air through these activities. They had asked some difficulties during the lesson broadcast through phone-patch. Next, the two group respondents returned for the posttest, which they had answered altogether. The guidelines of the data gathering were printed, distributed, and explained to the participants before taking the test with the assurance that answers were used for the study only. The process of checking the pretest and posttest questionnaires involved three different checkers who were experts in English.

Data Analysis

To statistically determine the effectiveness of Radio-Based Instruction, the researcher used the statistical methods as follows:

First, the pre-test and post-test were checked based on the rubrics. Then the score results were collected exclusively for the two group respondents, analyzed, and interpreted using Mean scores. It was determined by multiplying the number of cases for each group by one hundred and dividing the frequency of scores for each group.

Finally, Mann-Whitney U-test analysis was used to see whether there was a difference between the scores of the experimental group and the control group.

III. Results and Discussions

This chapter presented the gathered data, and the results were analyzed and interpreted. This study aimed to determine the relationship between Radio-Based Instruction and the test results of Grade 10 students in Caputatan Norte Integrated School. The data gathered from this study were organized in a table showing the test results in English 10 of the control group and the experimental group. Their lesson was all about Literary Criticism Approaches.

Furthermore, this also showed the results of the students' pretest and post-test, which identified the changes in their scores. The significance of the relationship between the pre-test and post-test of the control and experimental groups was also shown in the tables presented in this chapter.

Test Scores on Teaching Literary Criticism

Control Group. The control group was the learners undergoing modular learning without Radio-Based Instruction. 21 Grade 10 learners in the control group participated in this study. As shown below in the pretest, Students 7, 16, and 18 ranked first with a total score of 21.33, followed by students 2 and 3 with a score of 20.67, and the remaining students got a score of 20.00. In the posttest, Student 16 ranked highest with a score of 23.33. Students 2, 7, 18, and 19 ranked second with a score of 22.00. Student 3 ranked third with a score of 21.33. Student 6 ranked fourth with a score of 20.67. Then the rest of the students received a score of 20.00.

Student 16 had the most significant improvement between the pretest and posttest scores, from 21.33 to 23.33. Students 2,3,6,7,18 and 19 also improved their scores from the pretest to the posttest.

TABLE 2. Test Scores of Control Group on Teaching Literary Criticism

Student	Pretest	Posttest
1	20.00	20.00
2	20.67	22.00
3	20.67	21.33
4	20.00	20.00
5	20.00	20.00
6	20.00	20.67
7	21.33	22.00
8	20.00	20.00
9	20.00	20.00
10	20.00	20.00
11	20.00	20.00
12	20.00	20.00
13	20.00	20.00
14	20.00	20.00
15	20.00	20.00
16	21.33	23.33
17	20.00	20.00
18	21.33	22.00
19	20.00	22.00
20	20.00	20.00
21	20.00	20.00

This implied that there was still a minimal change in the scores, which means that some students could learn and improve their scores without Radio-Based Instruction and through Modular learning only. The absence of radio, an assistance tool, led them to have insufficient learning resources and guidance from the teacher. Based on the idea of Interactive Radio Instruction (IRI), the radio broadcast provides increased educational content, which sets it apart from most other modes of distance education (Elliot and Lashley, 2012). And because of the circumstance without Radio-Based Instruction, they did not receive the privilege to have more educational content.

Experimental Group. The experimental group was the learners undergoing modular learning with Radio-Based Instruction. 21

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Grade 10 learners in the experimental group participated in this study.

TABLE 3. Test Scores of Experimental Group on Teaching Literary Criticism

Student	Pretest	Posttest
1	20.00	22.67
2	20.00	31.33
3	20.00	24.33
4	20.00	27.00
5	20.00	20.00
6	20.00	20.67
7	20.00	20.67
8	21.33	29.00
9	20.00	27.33
10	20.00	24.33
11	21.33	28.00
12	22.67	35.00
13	20.00	34.00
14	20.00	25.33
15	20.00	27.00
16	22.00	32.00
17	20.00	23.33
18	20.00	31.33
19	20.67	28.00
20	20.67	30.00
21	20.00	22.00

As shown in the pretest, Student 12 ranked highest with 22.6. Student 16 ranked second with a score of 22.00, and Student 5 ranked last with a score of 20.00. Student 12 had the most significant improvement among the students, with 22.67 to 35.00. Most of the students improved their scores, but only student 5 remained the same. This implied that Radio-Based Instruction is a great aid and assistance to the student's learning process. As referred to the idea of Interactive Radio Instruction, this type of learning is student-centered; thus, the learner has the freedom to learn at his own pace, and it maintains a focus on quality management through an implementation approach and technique that emphasize constructive learning, pedagogy, and formative assessment (Elliot and Lashley, 2012). Because the topic was about criticism approaches, these aspects contributed to the learners and improved their learning because of the assistance of Radio-Based Instruction.

Relationship Between the Summative Pretest Scores of Control and Experimental Group

A Mann-Whitney U-test was conducted after the intervention process to reveal the differences in the pretest scores between the control and experimental groups.

TABLE 4. Relationship Between the Pretest Scores of Control Group and Experimental Group

Ranks

	Groups	N	Mean Rank	Sum of Ranks
Pretest	Control	21	20.81	437.00
	Exp	21	22.19	466.00
	Total	42		

Test Statistics[a]

	Pretest
Mann-Whitney U	206.000
Wilcoxon W	437.000
Z	-.473
Asymp. Sig. (2-tailed)	.636

a. Grouping Variable: Groups

From this data, it was concluded that there was *no significant difference* in the pretest scores of the control and experimental group, as shown with the p-value of 0.636, which was more important than the level of significance, 0.05. This meant that there was no substantial change in the performance of the control group and experimental group during their pretest. This meant that the control and experimental group had the same initial knowledge of the lesson and mainly relied on their schema or stock knowledge about the class. There was no intervention applied, so they relied on background knowledge. According to schema theory, the learners base the learning process on prior experience and are consulted to aid existing understanding or action. They grow and later as a result of new knowledge and experiences, proving the concept of plasticity in development (Pankin, 2013)

Relationship Between the Summative Test Scores Before and After Interaction

After the intervention process, a Mann-Whitney U-test was conducted to reveal the significant difference within the control and experimental groups between the pretest and post-test scores.

Control Group. The results for the control group are presented in Table 5. It revealed *no significant difference* in the control group's pretest and post-test scores with the p-value of 0.297, which was greater than the level of significance, 0.05. Therefore, the data failed to reject the null hypothesis. This meant that there was no significant change in the students' performance in the control group. This implied that the students did not improve their scores without Radio-Based Instruction. With the modular distance learning modality alone, the students could continue learning with no supplemental guidance from the Radio-Based Instruction Modality.

TABLE 5. Relationship Between the Pre-Test and Post-Test of Control Group

Ranks

	TESTSCORES	N	Mean Rank	Sum of Ranks
CONTROLGROUP	Pretest	21	19.93	418.50
	Posttest	21	23.07	484.50
	Total	42		

Test Statistics[a]

	CONTROLGROUP
Mann-Whitney U	187.500
Wilcoxon W	418.500
Z	-1.043
Asymp. Sig. (2-tailed)	.297

a. Grouping Variable: TESTSCORES

As based on the Theory of Uses and Gratification, the lack of usage of media such as Radio will affect the students because they deprive themselves to develop and sustaining their learning process through Radio-Based Instruction since the said theory focuses more on the audience's participation and goal-orientation (Lim & Ting, 2012).

Experimental Group. The results for the experimental group are presented in Table 6. It showed *a significant difference* between the experimental group's pretest and post-test scores, with a p-value of 0.001, which is less than the level of significance, 0.05.

TABLE 6. Relationship Between the Pre-Test and Post-Test of Experimental Group

Ranks

	TESTSCORES	N	Mean Rank	Sum of Ranks
EXPGROUP	Pretest	21	12.21	256.50
	Posttest	21	30.79	646.50
	Total	42		

Test Statistics[a]

	EXPGROUP
Mann-Whitney U	25.500
Wilcoxon W	256.500
Z	-5.050
Asymp. Sig. (2-tailed)	.001

a. Grouping Variable: TESTSCORES

With the term "Uses," the listeners or audience "uses" the media such as radio to receive and learn information sources and "Gratifications" because listeners know they can benefit from it (Ogbole, 2019). The students in the experimental group took advantage of having the Radio-Based Instruction because they knew they could benefit from the learning they could get.

Relationship Between the Summative Posttest Scores of Control and Experimental Group

A Mann-Whitney U-test was conducted after the intervention process to reveal the significant difference within the post-test scores between the control and experimental groups.

TABLE 7. Relationship Between the Posttest Scores of Control Group and Experimental Group

Ranks

	Groups	N	Mean Rank	Sum of Ranks
Posttest	Control	21	12.50	262.50
	Exp	21	30.50	640.50
	Total	42		

Test Statistics[a]

	Posttest
Mann-Whitney U	31.500
Wilcoxon W	262.500
Z	-4.872
Asymp. Sig. (2-tailed)	.001

a. Grouping Variable: Groups

Table 7 above showed *a significant difference* between the posttest scores of the control group and the experimental group with the p-value of 0.001, which was less than the level of significance, 0.05. This meant that there was a significant change in the performance of the control group and experimental group during their posttest.

This implied that Radio-Based Instruction was evident in the experimental group. The use of Radio-Based Instruction in distance learning successfully increases access and improves the quality of distance education.

IV. Conclusion and Recommendation

Conclusion

It was concluded that the Radio-Based Instruction effectively taught Literary Criticism to Grade 10 students (experimental group) of Caputatan Norte Integrated School.

This study further concluded that Radio-Based Instruction impacted answering the pretest and posttest about the Literary Criticism lesson broadcast. There is an excellent improvement of the scores of the experimental group, and this is evident that Radio-Based Instruction supplements that improvement.

Hence, optimizing Radio-Based Instruction in Caputatan Norte Integrated School would increase the number of listeners in continuing distance learning and aiding education and modular learning.

Recommendations

The following suggestions for future researchers were made based on the study's findings. First, the results of this study can be used for future researchers' interest in studying the factors that affect learning through Radio-Based Instruction. This can also be used as a topic for research that involves more profound knowledge of Radio-Based Instruction.

Improving the modules, modifying the lessons in the MELC, improving Radio-Based Instructions, and Implementing Radio stations were also recommended. Additional computer units, upgrading internet and radio signals, and adding more radio monitors to students were also suggested. It helps increase the radio monitor-to-student ratio, which might boost the learners' learning in these trying times.

The respondents of this study are limited only to Grade 10 learners in Caputatan Norte Integrated School. Future researchers may consider the results and use a more extensive range of grade levels to generate more options. Future researchers may evaluate the efficacy of the recommended action plan once the school has assessed and executed it because this study encourages its implementation.

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