



EFFECTIVENESS OF LOCALIZED RADIO-BASED INSTRUCTION AS AN AID TO MODULAR DISTANCE LEARNING

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ABSTRACT: *The study aims to assess the effectiveness of localised radio-based instruction as an aid to modular distance learning based on the academic performance of grade 9 students at Tambulig National High School, Zamboanga del Sur Division. The study was conducted during the Academic Year 2021-2022 amidst the pandemic. First Quarter grades of the Grade 9 students were gathered online. The study was quantitative, using a descriptive research design. Sampling methods targeted two groups: students who used RBI and non-RBI students. In determining the 84 students who used RBI, purposive sampling was used. Systematic random sampling was also used to get the 84 samples from the 239 non-RBI students. The majority of the RBI students (91.67%) have a very satisfactory to outstanding performance compared to the 75.19% of the non-RBI. Based on the result of a weighted average of both Non-RBI and RBI groups (85 and 87) implies that the students who availed of the Radio-Based Instruction have better performance in Araling Panlipunan compared to those who relied only on the learning modules. Based. On the mean, LRBI students have higher performance than the non-RBI. In the new normal education, the students were able to learn and perform better in school when they availed of the Localized Radio-Based Instruction. Students prefer to listen to radio-based instruction. It supplements the information provided by the modules, hence improving students' academic performance. Using local radio-based lessons is an effective way to bridge the digital divide in education., foster learner-centred approaches, and reach out to the most marginalised students.*

KEYWORDS: Distance learning, Radio based instruction, Education, Academic performance.



INTRODUCTION

The COVID-19 breakout has brought many challenges in many facets of people's lives within the community. Its unprecedented occurrence challenged the preparedness and readiness of government agencies. Department of Education (DepEd) was challenged to fulfil its duties during this adversity. According to Alelaimat and Ghoneem (2012), learning plays a vital role in achieving a progressive country; thus, every Filipino has a noble right to access quality education amid this crisis. Education must continue, provided that all learners, teachers, and education personnel are assured of their safety and security (Abu, 2020).

Since conventional face-to-face classes are not permitted for the school year 2020-2021, DepEd ensued DO. No. 12, s. 2020, which includes guidelines in the basic education learning continuity plan. The introduction of various learning delivery modalities was part of the learning continuity strategy. These modalities are modular distance learning (MDL), Online Distant Learning, and Television (TV)/ Radio-Based Instruction. Across the country, these learning delivery modalities are being promoted to replace face-to-face classes.

According to a DepEd survey conducted before the classes, most parents favoured the modular distance learning method as an efficient alternative to conventional face-to-face classes for the School Year 2020-2021. With the accessibility and availability of resources for all public schools in the division, the Division of Zamboanga del Sur adopted modular distance learning (MDL). Even though modular distance learning is widely accepted, social media has been flooded with complaints and concerns from parents and students since the start of classes. According to Abu (2020), difficulties in these emerging learning modalities have been raised, considering the proximity of modular materials and internet connectivity.

As a result, the Zamboanga Del Sur Division chose radio-based instruction as a means of instruction in conjunction with modular distance learning. McLuhan (1964) added the notion that media is an extension of human senses. The technology of radio has a unique way of balancing human wisdom in creating its form of thinking and communication. With the use of radio-based instruction, oral communication helps learners to think more creatively.

In the early 1920s, the transistor radio was a medium for educational purposes. According to Levine and Franzel (2015), students learning to write will benefit from radio-based education because the lack of visual imagery helps them to think about telling stories in words. Technological advancements give People more means to access an expanding amount of information. Local and international newspapers, radio stations, televisions, cell phones, and online platforms provide readily available sources of wealth information (Lavine, 2011). Thus, using radio-aided instruction will assist in meeting the students' needs, especially in remote areas.

RBI (Radio-Based Instruction) is a low-cost educational tool that has positively impacted students in some countries over the past twenty-five years. It is a distance learning system that brings together teachers and students despite geographical distance to develop quality teaching through structured, detailed, and real-time instructions. This necessitates physical and verbal responses from teachers and students to participate in suggested activities. The World Bank (2005) declared that RBI increases learning across the learning areas, age, gender, and geography.



Radio was used as an educational tool in developing countries. Radio was the popular education technology in the 1930s. It was UK Open University that pioneered the use of RBI as an aid in teaching. The Open University revealed that radio has a higher value for weak students who use it as a complement to their studying. (Vyas, Sharma, & Kumar, 2002).

According to a study titled "Impact of Instructional Radio Delivery Mode on Academic Achievement of Distance Learning Students in Computer Science," radio technology has many advantages in education. Radio has emerged as an effective worldwide bridge gap in education, according to several research studies, because it helps pupils enhance their learning outcomes. Radio has been utilised as a way to reach big audiences in Africa, Latin America, and Pakistan at low cost, which benefits students' learning outcomes (Ho & Thukral, 2009). Since the 1970s, interactive radio has been used in schools around the world. Radio has been used in the classroom to teach mathematics, particularly Mental Arithmetic and English. Radio Math has begun in various Latin American nations, including Bolivia, the Dominican Republic, and Kenya. In 1992, Pakistan's Radio Math and English in Action programs were the first to use radio in South Asia. In India, radio was first used in schools in 1937. (Vyas et al., 2002). However, during the 1970s, and especially after the 1990s, its appeal as a distance learning medium for elementary schools began to grow.

In Pakistan, 60 percent of children have no access to education. Power99 Foundation pioneered Interactive Radio Instruction (IRI) and created "Broad Class- Listen to Learn": Interactive Radio Instruction Program". This distance education program combines radio broadcasts with active learning to improve quality, equity, and inclusiveness. The said program enhances both quality and equity of education, with significant learning gains for all participants, including improvements in girls' achievement, closing the rural-urban education gap, and increasing access to education for out-of-school learners. A blind child verbalised how he learned through this interactive radio instruction when he could not see. Another child said that she gained courage and removed fear. After the incident, the program helped her that both of her parents died from a blast in their community. A child named Hazrat Bilal could learn and gain confidence and strength through informal learning to stand against all odds of life (Hundred Academy Review, 2020).

Senator Sherwin Gatchalian restated his support for television and radio-based instruction as an important component of the DepEd's blended learning strategy in basic education. He underlined that it is the most effective technique to reach every learner while ensuring their safety in their homes. However, due to globalisation, the internet, multimedia, and social media platforms were introduced and started to dominate the world of a new generation to utilise better technology, so radio became obsolete and unfamiliar (Griffith, 2012). The millennial generation is more of a visual learner. This group of individuals was perfectly positioned to become the pioneers and the first to adopt the world's most common visual platforms (Reed, 2016). Radio Based Instruction is being aired just like how radio advertising is being aired. Similarly, the advantages and disadvantages of radio advertising may somehow be just like those of radio-based instruction. The advantages of radio advertising are as follows: affordability, wide reach, audience targeting, and timely message delivery. On the other hand, these are the disadvantages of radio advertising: poor attentiveness and fragmentation, lack of visual appeal, and complex national buying processes. So, it might assert that Radio Based Instruction is also affordable, reaches a broad audience, and delivers the lessons timely. Somehow, radio-based instruction might be lacking in attentiveness, fragmentation, and visual appeal.



As a strength, radio has creative potential for the listener to add his/her visual interpretation. The receivers are relatively cheap and portable. It is also inexpensive in production terms and is widely heard and accepted. On the other side of the coin, radio requires a fully developed radio network. It is a non-visual medium. It needs trained personnel.

Since our country is a developing third-world nation, we cannot guarantee that all students will be able to use the online platforms. As a result, radio broadcasting as distance learning is an important way to bridge the digital gap in education and reach out to the most disadvantaged students to assist in teaching in the middle of a pandemic (UNESCO, 2020). Thus, the Department of Education's task is to ensure that instruction delivery becomes successful by incorporating modular distance learning as a modality, using localised radio-based instruction materials, and bringing it within reach of learners.

In Tambulig National High School, the presence of localised radio-based instruction was given importance. The lessons were crafted from the modules and then developed by a development team composed of trained Zamboanga Del Sur teachers, and it is intended only for the learners within the division. Students were encouraged to listen to the Radio-based lessons in order to supplement information coming from the modules. However, the use of these materials is not required and not compulsory.

The studies discussed above focused on the implementation of radio-based instruction in its broadest sense. Previous papers could not clearly define the efficacy of radio-based teaching, particularly in public schools in rural areas like Tambulig National High School, so this paper aimed to look at more precise data. In this study, the researchers are directly interested in discovering if radio-based instruction is an essential tool for learning so we can use this platform to address the learners' issues and concerns during this challenging time and make use of it to support modular instruction. The study was based on the students' first-quarter academic achievement in Araling Panlipunan. The researchers chose the Araling Panlipunan subject since it gives RBI lessons on local radio stations throughout the first quarter of the school year 2020-2021. Besides, the subject is also the area of specialisation of the researchers. All of the data was analysed to see if there was a significant difference in academic achievement between students who received radio-based education and children who did not.

Statement of the Problem

The purpose of this study was to assess the effectiveness of localised radio-based instruction (LRBI) as a tool for modular distance learning based on the academic performance of Tambulig National High School Grade 9 students who used LRBI. It aimed to answer the following research questions:

1. What is the student's academic performance in Araling Panlipunan when grouped according to:

1.1 Students who availed of the LRBI and

1.2 Students who did not avail of the LRBI?

2. Is there a significant difference in the student's academic performance in Araling

Panlipunan, when grouped according to those who avail of the LRBI and those who did not?



Scope and Limitatons

Because of the several restrictions and health protocols that needed to be observed in the midst of this pandemic, the data gathering procedure for this study was mostly done online, especially the short interview. The data were also limited only to the results of the First Quarter grades of the Grade-9 students of Tambulig National High School as the chosen respondents. Since the researchers' area of specialisation is Araling Panlipunan, the results were based only on the effect of localised radio-based instruction on the said subject and grade level.

Significance of the Study

The results of this study are advantageous to the following:

Students: They will find local radio-based instruction significantly helpful and effective in bridging the gap between the lessons and the students in the new normal.

Teachers: Teachers will be able to improve the delivery of lessons by utilising the presence of localised radio-based instruction to support modular distance learning.

Administrators: Administrators will explore policies and initiatives that will assist teachers and students in implementing radio-based instruction in their particular schools in an effective and efficient manner.

Community: They will provide more relevant programs, support, and openness in accepting challenges brought by this new modality of teaching and learning.

Other Researchers: The results may inspire and influence other researchers to do further research and study similar topics for a better and deeper investigation of the actual implementation of radio-based instruction in the new normal.

METHODS

This chapter explains how the effectiveness of LRBI as a tool for modular distance learning was determined. Further, it presents the research design, research respondents, research locale, research instruments, data gathering procedure, statistical treatment, and ethical considerations employed in this study.

Research Design

This study made use of the descriptive, comparative analytical research design. The three primary objectives of this research design are the description, explanation and validation of results. Descriptive research consists of data collecting describing occurrences and then organising, tabulating, depicting and describing data collected (Glass & Hopkins, 1984). Description comes after creative inquiry and is used to arrange the results and then prove or verify them with explanations (Krathwohl, 1993).

The quantitative section of this study collects the grades of the two groups in the First Quarter of Araling Panlipunan subject, RBI and Non-RBI students, to compare the academic performance of Grade-9 students who the LRBI in Tambulig National High School and those who did not. The short interview was also used to collect the respondents' personal experiences,



comments, and ideas on how the program could be improved. This will be investigated by extracting meanings from the raw data provided by the respondents that could supplement and verify the results of this study.

Research Locale

Tambulig National High School was chosen as the site of this research. It is located in front of San Isidro High School, along the National Highway of Lower Lodian, Tambulig, Zamboanga del Sur. It is one of the most prestigious high school campuses in the Division of Zamboanga del Sur, with a welcoming learning environment, highly qualified faculty to teach in a variety of fields of specialisation, and modern educational institutions geared toward achieving professional competence in the sector. Recently, the school has had

1,275 junior high school student populations and about 600 senior high school student populations for the school year 2020-2021.

The researcher chose to perform the study in the said institution because the school promoted the utilisation of radio-based instruction since the first day of classes for the school year 2020-2021. Though it is not compulsory, there are consistent follow-ups and parent-teacher communication regarding the use of LRBI. Besides, the municipality of Tambulig and the nearby municipalities have a local radio station that offers specific timeslots for DepEd RBI lessons. With this, the school is expected to offer the researchers an easier way of collecting data and capturing substantial information needed for the success of this study.

Research Respondents

This study utilised two sampling methods. The target population of this study is the 323 students from the seven (7) sections of Grade 9 in Tambulig National High School. The students were divided into two groups: those who claimed to have used Radio-Based Instruction as a supplemental learning delivery method in the new normal and those who did not.

In order to determine the number of students who availed RBI, the researchers used purposive sampling, which included all 84 RBI students from the seven (7) sections of Grade 9. The researchers also used systematic random sampling to get 84 samples from the 239 non-RBI students.

Research Instruments

In this study's quantitative phase, the researchers collected the first quarter grades in Araling Panlipunan of all the Grade-9 students in Tambulig National High School (LRBI and non-LRBI). To compare the LRBI and non-LRBI students, the researchers used the *rating scale*. A rating scale is a term used to describe an expression of opinion or judgment that indicates responses to a specific situation. It's a set of categories created to elicit data from qualitative or quantitative research methods. According to Guilford (1954), a rating scale must have the following essential qualities which must be considered when building a rating scale. The following is the rating scale adopted from the Department of Education guidelines:



Descriptor	Grading Scale	Remarks
Outstanding	90-100	Passed
Very Satisfactory	85-89	Passed
Satisfactory	80-84	Passed
Fairly Satisfactory	75-79	Passed
Did Not Meet Expectations	Below 75	Failed

The researchers also conducted an informal short interview with randomly selected participants who opted to use the LRBI to share their personal thoughts, suggestions, and recommendations regarding the use of localised radio-based instruction. The interview technique was used to complement the data gathering. The interview provided information that may be confidential and may not ordinarily be given in writing. The interview, according to Vockell (2000), is a technique in which the researcher stimulates the respondents to give the needed information for the study.

Data Gathering Procedure

The data-gathering procedure is a very important part of the research because the study's conclusion was based on what the data revealed. The researchers sought authorisation from the School Principal's Office to allow the researchers to conduct research in the institution. Following the Principal's consent, the target population was divided into RBI and NON-RBI categories, identifying 84 RBI students and 239 non-RBI students. In order to determine the samples for this study, the researchers use purposive and random sampling methods. The researchers then collected the first quarter Araling Panlipunan grades of the 323 Grade-9 students from the 7 class advisers. The researchers then conducted an interview with randomly selected RBI students to get their perceptions, suggestions, and recommendations on how to improve the use of LRBI. It was employed primarily to identify respondents' perceptions concerning the use of LRBI and to support the results of the statistical tests. After administering the questionnaires, the instruments were collected and analysed by the researchers.

Statistical Treatment

Statistical treatment was done by applying some form of statistical method to a data set to transform it from a group of meaningless numbers into meaningful results. With the help of the La Salle University Statistician using the software SPSS, the researchers utilised the statistical treatments listed below to assess the efficiency of localised radio-based instruction (LRBI) as a tool for modular distance learning among Tambulig National High School Grade 9 students.

Percentage and Frequency. For both RBI and non-RBI respondents, percentage and frequency were utilised to represent the number of respondents at various levels of academic performance in Araling Panlipunan.

Mean. It was used to present the mean scores or the average grades of the two groups (RBI and non-RBI). The mean score was the sum of all the gathered scores divided by the total number of scores.

Mann Whitney U. This was utilised to see if there was a significant difference in respondents' performance in Araling Panlipunan when they were divided into RBI and non-RBI users.



Ethical Considerations

Ethics are crucial in research because they protect the research's integrity. The consent of the respondents should be given before the survey is administered. It is emphasised that it is a voluntary participation. The respondents are not being harmed. All aspects of privacy and confidentiality are protected. Furthermore, a formal letter was written and approved by the school principal of Tambulig National High School for the study to be done in the school prior to the start of the investigation.

RESULTS AND DISCUSSIONS

The findings and statistical analysis of the acquired data are presented in this chapter, which is based on the research questions that aim to determine the effectiveness of localised radio-based instruction. The results demonstrate the quantitative data comparing the academic performances of the RBI and non-RBI students and its interpretation supported by the statements conveyed by the participants who availed RBI during the short interview. Furthermore, a discussion is also presented to explain the results and to answer the questions in the quantitative and qualitative phases of the study.

Table 1. Academic Performance of Non-RBI and RBI Students

Descriptor	Grading Scale	Non-RBI		RBI	
		f	%	f	%
Outstanding	90-100	4	4.76	12	14.29
Very Satisfactory	85-89	60	71.43	65	77.38
Satisfactory	80-84	19	22.62	7	8.33
Fairly Satisfactory	75-79	1	1.19	0	0.00
Did Not Meet Expectations	Below 75		0.00	0	0.00
Weighted Average		85		87	

Table 1 shows that the majority of the RBI students (91.67%) have a performance of **very satisfactory to outstanding** as compared to the 76.19% only of the Non-RBI. In addition, based on the result of the weighted average of both Non-RBI and RBI groups, which have **85** and **87**, respectively, implies that the students who availed of the Radio-Based Instruction have better performance in Araling Panlipunan compared to those who relied only on the learning modules. As expressed by the majority of the participants during the interview, they listened to the supplemental lessons aired on the radio station three or more times. Further, they shared that their experiences with RBI have helped them understand their lessons better. Also, they become more at ease and confident in answering the activities in their modules since they have more time to do them. This finding supports the study of Jamison et al. (1981) on enhancing basic mathematics instruction in Nicaragua, which was an experimental research on the impact of textbooks and radio on student performance. The results showed that both therapies, particularly the radio, had a considerable positive impact on the student's academic performance.

**Table 2. Statistical Presentation of Mann Whitney U Analysis of RBI and Non-RBI Students**

		N	Mean	Mean Difference	Std. Deviation	Sig. (2-tailed)	Interpretation
	Non - RBI	84	85.4881	-1.40476	2.72646	.001	Significant
	RBI	84	86.8929	-1.40476	2.41490	.001	

The table shows that based on the mean, both groups, RBI and non-RBI, have fallen under the same level of *very satisfactory* according to the DepEd grading scales. The results show a mean difference of 1.404 between LRBI and non-LRBI students' mean scores, which means that the LRBI students perform better than the non-LRBI students. Even though both groups fall in the same level of academic performance, the *U value of .001*, which is lower than the *p-value of .05*, denotes a significant difference in performance between the two groups under investigation. These results further reveal that using localised radio-based instruction is effective. The effectiveness of LRBI is affirmed by the participants' statements that they recommended the use of this supplementary mode of lesson delivery to other students, for they believed that this helped them process the concepts in their lessons. The study of Olakulehin (2016) corroborated this conclusion and discovered the effects of instructional radio delivery modality on the academic accomplishment of distance learning students in Computer Science. Results found that when instructional radio is combined with other learning methods, such as modular learning or lecture methods, it facilitates and improves successful and effective learning.

CONCLUSIONS AND RECOMMENDATIONS

Based on the stated results and discussions presented, the researchers arrived at the following conclusions:

1. In the new normal education, the students were able to learn and perform better in school when they availed the localised Radio-Based Instruction than those who did not.
2. Students prefer to listen to radio-based frequently while answering their modules.
3. The use of LRBI supplements the information provided by the modules, hence improving students' academic performance. Using local radio-based lessons as a distance learning solution is an effective way to bridge the digital divide in education, foster learner-centred approaches, and reach out to the most marginalised students.

It is also recommended that:

1. The students in the new normal under modular distance learning should avail of the Localized Radio-Based Instructions (RBI).
2. The LRBI program should be continuously implemented, especially during this new normal education period. Further, it is necessary to provide radios and gadgets to the learners so that they can perform much better than expected.



3. The teacher-broadcasters are encouraged to attend extensive and proper training to perform efficiently in the recording of LRBI.

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