

Radio-Based Instruction and Pupils' Performance in English

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Abstract

Radio-Based Instruction (RBI) emerged as an effective supplementary tool to support learning during the pandemic and in the transition back to face-to-face classes. This study aimed to determine the performance of Grade IV pupils in English subjected to Full Radio-Based Instruction, Mixed Radio-Based Instruction and Normal Teaching, and to identify the instructional factors contributing to the implementation of Radio-Based Instruction.

This study employed a quantitative approach using two designs: quasi-experimental and descriptive. The data was gathered from 107 Grade IV pupils and 28 teachers of the DepEd Naga City Division. The results showed that the pupils' performance was below expectations and there were significant differences in the level of performance of the students in all three modes of instruction. The teachers rated the objective as the most important factor for successful RBI, while they did not place high emphasis on learning activities and student engagement.

This study highlights the potential of RBI as a supplementary educational tool, providing valuable insights into the instructional factors contributing to the successful implementation of RBI. The proposed intervention plan seeks to enhance RBI to improve learning outcomes and offers opportunities for more inclusive and accessible education.

Keywords

English, Implementation, Level of Performance, Naga City Division, Radio-Based Instruction.

INTRODUCTION

Education is a crucial societal pillar, and technology has led to innovative approaches to teaching and learning, such as Radio-Based Instruction (RBI) during the Covid-19 pandemic. RBI allows students to access pre-recorded or live educational content via radio waves, providing comfort, accessibility, and distant learning. In the Philippines, the Department of Education implemented the "Radio-Based Instruction" providing daily radio broadcasts of lessons to students without internet access. [1]

This method has been successful in rural areas, such as Antique, where "School on the Air" has improved literacy rates. DepEd Naga also uses radio-based instruction as a supplementary material, particularly in English. This study aims to determine the impact of RBI on learning outcomes and its effectiveness as a teaching method. Understanding how RBI influences language learning can help educators tailor their approaches to better suit students' needs and contribute to the broader field of educational technology. The study also considers the quality of educational content, the availability of complementary learning materials, and the interactivity of the programs. [2]

THEORETICAL FRAMEWORK

The study focuses on two theories: the Hovland Theory of Persuasion and the Scaffolding This focuses on persuasive communication and attitude change, while Vygotsky's theory suggests that learning and development occur through guided assistance. In the context of radio broadcast instruction, the

credibility and expertise of the instructor or speaker, as well as the audience's prior knowledge, beliefs, and attitudes, can influence the effectiveness of persuasive messages. [3]

The scaffolding theory, developed by psychologist, suggests that learning and development occur through a process of guided assistance, with more knowledgeable individuals providing support and structure to less knowledgeable individuals. Teachers play a crucial role in the implementation of RBI, and the theory suggests that learning should be scaffolded gradually as students develop competence. Both theories emphasize the importance of effective communication and support in facilitating learning outcomes. By incorporating persuasive communication strategies and applying scaffolding techniques, RBI can create engaging and effective learning experiences for students. [4]

STATEMENT OF THE PROBLEM

Specifically, this study seeks to answer the following questions:

1. What is the level of performance of students subjected to:
 - a. full Radio-Based Instruction
 - b. mixed Radio-Based Instruction and Normal Teaching
 - c. Normal Teaching
2. Are there significant differences in the performance of the students subjected to full radio-based instruction, mixed radio-based instruction and normal teaching and normal teaching?
3. What other instructional factors perceived to be contributory to the implementation of Radio-Based Instruction in terms of the following aspects:

- a. objectives
 - b. content
 - c. student engagement
 - d. learning activities
 - e. learning assessment?
4. What Intervention Plan may be proposed based on the results of the study?

RESEARCH METHODOLOGY

Research Design

The study used a quantitative approach, quasi-experimental and descriptive, to assess grade IV English performance under different radio-based instruction and normal teaching methods. It also analyzed instructional factors affecting radio-based instruction implementation, including objective, content, student engagement, and assessment

Respondents of the Study

The study involved 107 grade IV students from Mabolo Elementary School and 28 public elementary school

teachers-respondents to assess English performance and Factors perceive contributory in RBI implementation.

Research Instruments

The researcher created a 25-item learning assessment tool for grade IV pupils to determine their performance level. The test assessed competencies in past form of regular and irregular verbs, choosing the correct verb form, and spelling the correct past form. The assessment was validated by DepEd Naga City Division experts. A questionnaire was developed to assess instructional factors perceive contributory in RBI implementation.

Statistical Treatment

Mean was used to describe the performance level of the grade IV pupils in English subjected to: full radio-based instruction, mixed radio-based instruction and normal teaching, and normal teaching alone. To test differences of pupils' performance subjected to 3 different RBI modes, the Analysis of Variance (ANOVA) was applied. Mean was also used to describe the factors contributory to the implementation of Radio-Based Instruction.

RESULT AND DISCUSSION

Table I. Level of Performance of Grade IV Pupils in English

Mode of Instruction	Indicators			Mean	Interpretation
	A	B	C		
Full Radio-Based Instruction	52.42	36.06	38.18	42.22	Did Not Meet Expectation
Mixed Radio-Based Instruction and Normal Teaching	58.61	43.33	44.72	48.89	Did Not Meet Expectation
Normal Teaching	55.64	28.85	36.15	40.21	Did Not Meet Expectation

Table I presents the performance level in English of Grade IV pupils subjected according to any of the 3 modes of instruction: full radio-based, mixed RBI and normal teaching, and normal teaching. Results showed that students' scores did not meet expectations, with mixed RBI and normal teaching

achieving the highest scores. The study found no improvement in pre-test and post-test learning outcomes, suggesting that both RBI and blended instruction may not be effective in enhancing English performance. [5]

Table II. Level of Performance of the Pupils in English Subjected to Full Radio-Based Instruction, Mixed Radio-Based Instruction and Normal Teaching, and Normal Teaching

Groups	Sum of Squares	Df	Mean Square	F	Sig.	Interpretation
Between Groups	1649.352	2	824.676	3.945	.022	Significant
Within Groups	21949.315	104	209.041			
Total	23598.667	107				

The study found significant differences in English performance among students using full radio-based instruction, mixed radio-based instruction and normal teaching, and normal teaching. The mixed approach, which combined radio-based instruction and normal teaching, resulted in significantly better performance compared to both methods alone, suggesting that a combination approach may enhance learning outcomes more effectively.

The ANOVA results suggest that radio-based instruction alone may not be as effective as other methods in improving student performance. Factors such as learning environment, student engagement, individual learning preferences, teaching techniques, and interaction level contribute to these differences. Both groups showed improvement in language proficiency, but the combined group showed higher gains in listening and speaking skills compared to the RBI-only group. [6]

Table III. Instructional Factors Perceived to be Contributory to the Implementation of Radio-Based Instruction on Objective

Indicators	Mean	Rank
The objectives set by the radio program instruction are helpful from a circular and programmatic perspective.	4.00	1
Attainability of the objectives.	3.86	2
Understandability of the objectives.	3.75	3
Measurability of the objectives.	3.71	4
More specific; clear statement of objectives	3.67	5
Mean	3.80	

Table III shows the instructional factors contributing to the implementation of radio-based instruction. Indicator 1 indicates that the objectives set by the radio program are helpful from a circular and programmatic perspective, enhancing the effectiveness and success of the program. However, the specific and clear objectives have a lower mean of 3.67, suggesting that teachers may focus more on the delivery and execution of the program. Teachers have a positive perception of the instructional factors related to the objectives of radio-based instruction, valuing clarity, alignment, and attainable goals. Encouraging children to set mastery objectives for academic work can be beneficial. A student with performance-approach goal aspires to look more competent than other students in a task or subject area. The content used in RBI may provide a significant contribution to pupils' performance. RBI content is designed to provide learners with access to high-quality educational resources, regardless of their geographic location or other barriers to traditional classroom-based learning. [7]

Table IV. Instructional Factors Perceived to be Contributory to the Implementation of Radio-Based Instruction on Content

Indicators	Mean	Rank
The content of the RBI is evaluated before airing.	3.86	1
The content of the RBI address the needs of the students and community.	3.82	2
The content of the RBI is tailored to educational needs.	3.71	3
The content of the RBI transfers materials and guides students in carrying out learning activities.	3.69	4
The content of the RBI is purely adapted from DepEd materials.	3.64	5
Mean	3.74	

The content of the RBI before airing was rated highest for clarity, relevance, alignment with curriculum, appropriateness, engagement, adaptability, flexibility, and diversity and inclusivity. This ensures effective student learning and improved performance outcomes. Evaluating content before airing helps identify potential issues or errors, ensuring high-quality instruction. This emphasizes the importance of evaluating content before airing to meet educational needs, accuracy, relevance, appropriateness, effectiveness, and legal and ethical standards. Teachers may feel that the transfer of materials and guidance is significant, but clear guidance and student engagement are crucial for RBI's success. [8]

Table V Instructional Factors Perceived to be Contributory to the Implementation of Radio-Based Instruction on Student Engagement

Indicators	Mean	Rank
Provides learning activities that arouse the students' interest.	3.18	1
Provides learning content that require students to create outputs or observe learning.	3.14	2
Conveys learning materials and instructions from the teacher to students to get a learning experience.	3.11	3
Provides learning materials that are simple and easy to comprehend to student audience.	3.04	4
Mean	3.12	

The implementation of RBI (Real-Time Instruction) in education has been found to be effective in increasing student engagement. The primary factor contributing to this is the provision of engaging learning activities, such as games and interactive quizzes, which can arouse student interest and make the learning process more enjoyable. However, the provision of simple and easy learning materials is rated lower due to limited materials and potential issues with accessibility and appropriateness. Further study is needed to understand the availability and appropriateness of these materials. The study aligns with previous research on the effectiveness of RBI programs in improving student engagement and learning outcomes, particularly in English language. The result of the study found out that the program was effective in increasing student engagement and improving their listening and speaking skills. This study however, suggested that the program's use of interactive teaching techniques needs further explanation. [9]

Table VI. Instructional Factors Perceived to be Contributory to the Implementation of Radio-Based Instruction on Learning Activities

Indicators	Mean	Rank
The learning activities of the Radio-Based Instruction lessons engage students in active, constructive, and cooperative ways.	3.18	1
The learning activities of the Radio-Based Instruction lessons cater to varying performance levels.	3.14	2
The learning activities of the Radio-Based Instruction are sufficient to determine the students' mastery level.	3.10	3
The learning activities of the Radio-Based Instruction lessons are adequate to develop students' scientific skills.	3.07	4
Over-all Mean	3.12	

The implementation of radio-based instruction (RBI) in learning activities is influenced by instructional factors such as engagement, language-focused instruction, and assessment tools. The learning activities are perceived to be limited in developing scientific skills, with a mean rating of 3.18. However, they should be designed for both high and low-performing students to ensure motivation and engagement. Classroom assessment can help teachers plan effective education and support students at a deeper level. A study found that both RBI and face-to-face instruction groups showed significant improvements in scientific skills after a 10-week instruction period. The alignment of assessment tools may not cater to the diverse range of students' individual needs. [10]

Table VII. Instructional Factors Perceived to be Contributory to the Implementation of Radio-Based Instruction on Learning Assessment

Indicators	Mean	Rank
The assessment tools used in the Radio-Based Instruction is aligned in the learning competencies.	3.64	1
The assessment tools used in the Radio-Based Instruction match the learning Objectives.	3.39	2
The assessment tools used in the Radio-Based Instructions assess what the students' learning expectation.	3.07	3
The assessment tools used in the Radio-Based Instruction checks it reliability, validity, and fairness.	3.04	4
The assessment tools used in the Radio-Based Instruction meets students' individual needs.	3	5
Over-all Mean	3.23	

The assessment tools used in the Radio-Based Instruction (RBI) program were found to be effective in measuring student learning outcomes, but may not cater to diverse student needs. The lowest-ranking indicator was the lack of differentiation based on learning styles, abilities, and language proficiency levels. The study found that aligning assessment tools with learning competencies helps teachers accurately measure student progress and identify areas for additional support. However, the lower-ranking "student engagement" indicates limited student engagement, indicating that teachers need to guide students in utilizing the RBI program effectively. [11]

Table VIII. Summary on the Factors contributing to the Implementation of Radio-Based Instruction Along the Seven Areas

Areas	Mean	Interpretation
Objective	3.80	1
Content	3.74	2
Learning Assessment	3.23	3
Student Engagement	3.12	4
Learning Activities	3.12	5
Mean	3.40	

The implementation of the Radio-Based Instructional Program (RBI) in Mabolo Elementary School was found to be influenced by several instructional factors. The objective was higher than the student engagement, with a mean rating of 3.80. However, the low performance of students in using RBI for English was linked to low student engagement and learning activities. Low student engagement can hinder active participation, motivation, and investment in the learning process. The low ranking of "Learning Activities" suggests that the design and implementation of learning tasks and materials within RBI may not have effectively facilitated English language learning. The study also highlighted the importance of content and learning assessment in the overall success of the program. The study found that the performance level of students in the three teaching-learning modes did not meet the learning expectations, suggesting that mixed RBI and normal teaching could be potential alternatives. If RBI is used alone, appropriate instructional materials should be designed to encourage student engagement and motivation.

CONCLUSION

1. A consistent challenge was observed across all instructional modes, particularly in Indicator B, where students struggled with choosing the correct form of the verb in the sentence. This suggests a specific area that may require targeted instructional attention.
2. The findings suggest that the combination of Mixed RBI and Normal Teaching had a unique influence on the performance of Grade IV pupils in English. Educators and policymakers may consider exploring the specific

elements or strategies within this combined approach that contributed to the observed significant difference.

3. The study emphasizes the importance of a holistic approach to Radio-Based Instruction, with a focus on clear objectives, quality content, effective assessment, student engagement, and well-designed learning activities. These findings contribute valuable insights for educators and policymakers seeking to optimize the implementation of Radio-Based Instruction for enhanced educational outcomes.

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