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Radio-Based Instruction as a Distance Learning Approach: An Assessment Of Implementation

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Abstract

This study assessed the implementation of Radio-Based Instruction (RBI) as a distance learning modality in Casiguran District, Aurora, during the COVID-19 pandemic. Using a descriptive-quantitative design, data were gathered from 70 purposively selected stakeholders, including school heads, teachers, parents, students, and barangay officials via structured questionnaires and supplementary interviews. Findings revealed that RBI establishment and coordination were consistently rated as "Always Observed," indicating strong policy presence and community linkages. However, management and evaluation aspects were only "Often Observed," with gaps in documentation, reporting, and capacity-building activities. Limited broadcast range posed serious challenges, particularly in lesson delivery and learner engagement. Despite these constraints, RBI demonstrated viability as a complementary modality to Modular Distance Learning and programs like ALS and Open High School. The study recommends strategic improvements in management, monitoring, and stakeholder support to enhance RBI's sustainability and educational impact in geographically isolated areas.

Keywords: *Radio-Based Instruction (RBI), Community Radio, Distance Learning Approach, Management, Implementation*

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INTRODUCTION

The COVID-19 pandemic caused unprecedented disruption to formal education systems worldwide, forcing the closure of schools and the rapid shift away from traditional classroom instruction. This disruption exacerbated pre-existing inequalities in access to education, particularly in geographically isolated and disadvantaged areas where internet connectivity and digital infrastructure remain limited (UNESCO, 2020). In provinces such as Aurora, many learners were unable to fully participate in online learning modalities, highlighting the need for alternative, context-appropriate delivery systems to ensure continuity of learning.

In response to these challenges, Radio-Based Instruction (RBI) emerged as a viable alternative learning modality, particularly in low-resource and rural settings. Radio has long been recognized as an effective medium for distance education due to its wide reach, affordability, and ability to operate in areas with minimal technological infrastructure (Ho & Thukral, 2009). During the pandemic, the Philippine Department of Education (DepEd) formally included radio- and television-based instruction as components of its Basic Education Learning Continuity Plan, emphasizing their role in supporting learners who lacked access to digital technologies (Department of Education [DepEd], 2020).

The implementation of RBI in the Casiguran District through collaboration between the Schools Division Office and Radio Kawadi reflects how community-based media partnerships can support educational delivery during emergencies. Previous Philippine studies on RBI have documented its effectiveness in sustaining learner engagement and instructional delivery during school closures, while also identifying challenges related to coordination, resource availability, and stakeholder involvement (Department of Education, 2021; Talidong & Toquero, 2020).

This study evaluates the implementation of Radio-Based Instruction in the Casiguran District, focusing on its management, coordination mechanisms, and the involvement of learning organizers at the establishment level. Employing a descriptive-quantitative research design, the study provides empirical evidence on the extent of RBI implementation and identifies operational strengths and areas for improvement. The findings contribute to the broader discourse on inclusive education and resilient learning systems, offering insights relevant to rural and underserved communities in the Philippines where flexible learning modalities remain essential beyond the pandemic.

METHODOLOGY

Research Design

This study adopted a descriptive-quantitative design to systematically assess the implementation of Radio-Based Instruction (RBI) in Casiguran District, Aurora. The design was selected to capture measurable patterns in program execution, specifically in establishment, management, coordination, and evaluation, based on stakeholder perceptions. Descriptive research is particularly suited for documenting existing conditions and identifying areas for improvement in educational programs (Best & Kahn, 2006). The quantitative approach allowed for structured data analysis, supporting evidence-based recommendations aligned with the study's practical goals.

Research Locale and Sampling Procedure

Casiguran District was purposively selected due to its geographic isolation and status as the only RBI-implementing district in the Schools Division of Aurora during the pandemic. Its role in

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piloting the Senior High School Alternative Learning System (SHS-ALS) and Open High School programs further justified its inclusion.

A total of 70 respondents were chosen through purposive sampling, targeting individuals directly involved in or affected by RBI, school heads, teachers, parents, students, and barangay officials. This technique was appropriate for capturing informed perspectives from key stakeholders, ensuring contextual relevance and depth (Calmorin & Calmorin, 2012).

Scope and Delimitations

This study focuses on the status and impact of RBI implementation in SDO Aurora during pandemic-related distance learning. Additionally, it considers the potential continuation of RBI as an alternative learning modality. The descriptive-survey method was used to ensure a reliable analysis of the variables.

Research Instrument

The primary data collection tool was a structured questionnaire developed through a multi-phase validation process. Initial items were adapted from prior studies and refined through consultations with education experts. Content validity was established through expert review, ensuring alignment with the study's constructs and objectives.

To test reliability, the instrument underwent a pilot test with five respondents from outside the study area. Feedback informed revisions for clarity and coherence. Reliability analysis yielded a Cronbach's alpha coefficient above 0.80, indicating strong internal consistency and suitability for quantitative analysis (Gay, Mills, & Airasian, 2011).

The primary data collection tool was a structured que`stionnaire designed to assess the implementation of Radio-Based Instruction (RBI) across four operational domains: (1) establishment, (2) management, (3) coordination, and (4) evaluation and monitoring. Each domain included multiple indicators rated on a four-point Likert scale, with descriptors ranging from "Never Observed" to "Always Observed" for implementation items, and from "Strongly Disagree" to "Strongly Agree" for perception-based items.

The instrument was developed through adaptation of validated tools from prior studies (e.g., Francisco & Alieto, 2016), and refined through expert consultation with education specialists and the research advisory committee. To ensure content validity, the questionnaire underwent a review process involving three subject-matter experts who evaluated item relevance and alignment with the study's objectives. A pilot test was conducted with five respondents from outside the study locale, resulting in revisions for clarity and coherence. Reliability testing yielded a Cronbach's alpha coefficient of 0.82, indicating high internal consistency and suitability for quantitative analysis (Gay, Mills, & Airasian, 2011).

Ethical Considerations

This study adhered strictly to established ethical standards in educational research. Prior to data collection, formal approval was secured from the Schools Division Superintendent and relevant local government authorities. All participants were provided with informed consent forms detailing the study's purpose, procedures, and their rights as respondents, including the right to decline participation or withdraw at any stage without consequence.

Confidentiality and anonymity were rigorously maintained throughout the research process. Data were coded to prevent identification of individual respondents, and access was restricted to the principal investigator and authorized research personnel. The study complied with institutional ethical

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protocols and aligned with the principles outlined in the Philippine National Ethical Guidelines for Health and Social Science Research (PNHRS, 2011).

Data Gathering and Analysis

Quantitative data were processed using Microsoft Excel, with statistical support from a licensed statistician. Descriptive statistics were employed to analyze the extent of RBI implementation across the four domains. Specifically, the mean was used to determine the central tendency of responses, while the standard deviation measured the variability within each indicator.

Interpretation of results followed the scale benchmarks defined in the instrument, allowing for consistent classification of implementation levels (e.g., "Often Observed," "Rarely Observed"). This analytical approach ensured replicability and transparency in reporting, supporting the study's academic integrity and its contribution to evidence-based educational planning.

RESULTS AND DISCUSSION

This section presents the findings of the study on Radio-Based Instruction (RBI) and discusses them in relation to established theories and empirical literature. Each theme is introduced, followed by the presentation of results in tabular form and a corresponding discussion.

Involvement of Learning Organizers in the Implementation of Radio-Based Instruction

To examine how learning organizers supported the implementation of Radio-Based Instruction, the study analyzed their involvement in terms of establishment, management, coordination, and evaluation and monitoring. The summary of results is presented in Table 1.

Table 1
Involvement of Learning Organizers in the Implementation of Radio-Based Instruction

Dimension	M	SD	Verbal Description
Establishment	3.39	0.70	Always Observed
Management	2.89	0.85	Often Observed
Coordination	3.17	0.75	Often Observed
Evaluation and Monitoring	2.72	0.72	Often Observed
Grand Mean	3.04	0.67	Often Observed

Note: M = mean; SD = standard deviation. Scale: 1.00–1.75 = Never Observed; 1.76–2.50 = Rarely Observed; 2.51–3.25 = Often Observed; 3.26–4.00 = Always Observed.

The results indicate that the overall involvement of learning organizers in RBI implementation was Often Observed, with the highest level of involvement evident in the establishment dimension. This finding suggests that RBI has been formally adopted and supported through policies and institutional structures. From a systems theory perspective, clearly defined policies and organizational frameworks are critical in legitimizing and sustaining educational programs (Banathy, 1991).

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However, lower ratings in management and evaluation and monitoring reveal weaknesses in administrative execution and feedback mechanisms. These gaps suggest limited opportunities for continuous improvement and adaptive management. Consistent with implementation research, effective program delivery requires not only policy support but also ongoing monitoring, documentation, and professional development to ensure fidelity and sustainability (Fixsen et al., 2005).

Community Responses Toward Radio-Based Instruction

To assess stakeholder perceptions of RBI, responses from the school academic community, learning organizers, and local community members were consolidated. Table 2 presents the summary of community responses.

Table 2
Community Responses Toward Radio-Based Instruction

Indicator	M	SD	Verbal Description
RBI supplements modular and limited face-to-face learning	3.33	0.68	Strongly Agree
RBI provides a flexible and conducive learning environment	3.27	0.64	Strongly Agree
RBI supplements learning despite limited parental support	3.20	0.69	Agree
Availability of teacher-presenters	3.41	0.67	Strongly Agree
Teachers are knowledgeable and skillful in RBI	3.44	0.69	Strongly Agree
LGU/barangay support for RBI continuity	3.36	0.70	Strongly Agree
Grand Mean	3.34	0.53	Strongly Agree

Note: Scale: 1.00–1.75 = Strongly Disagree; 1.76–2.50 = Disagree; 2.51–3.25 = Agree; 3.26–4.00 = Strongly Agree.

The findings demonstrate strong community support for RBI as a supplementary learning modality. Stakeholders strongly agreed that RBI enhances learning flexibility and compensates for the limitations of modular and limited face-to-face instruction. These results align with distance education theory, which highlights accessibility and flexibility as defining strengths of alternative learning modalities (Moore & Kearsley, 2012).

The high ratings for teacher availability and competence underscore the importance of instructional presence. According to the Community of Inquiry framework, teaching presence plays a central role in shaping learners' perceptions of instructional quality and engagement in distance education environments (Garrison et al., 2000). The positive community response also supports UNESCO's (2020) assertion that low-tech solutions such as radio remain effective in ensuring educational continuity in marginalized and low-connectivity contexts.

Challenges and Concerns in the Implementation of Radio-Based Instruction

To identify constraints affecting RBI implementation, challenges reported by various stakeholders were consolidated. The results are presented in Table 3.

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Table 3
Challenges and Concerns in the Implementation of Radio-Based Instruction

Indicator	M	SD	Verbal Description
Poor awareness of RBI programs	3.09	0.72	Serious
Limited opportunity for correction	2.93	0.75	Serious
Absence of teacher guidance	3.06	0.78	Serious
Weak dissemination and stakeholder support	2.90	0.95	Serious
Poor sound quality and signal	3.00	0.72	Serious
Difficulty with self-directed learning	3.07	0.79	Serious
Insufficient time for lesson discussion	3.13	0.80	Serious
Limited signal access	3.10	0.84	Serious
Delayed teacher response to inquiries	3.20	0.86	Serious
Grand Mean	3.05	0.62	Serious

Note: Scale: 1.00–1.75 = Not a Problem at All; 1.76–2.50 = Not Serious; 2.51–3.25 = Serious; 3.26–4.00 = Very Serious.

The challenges encountered in the implementation of Radio-Based Instruction (RBI) were consistently rated as serious, particularly those related to limited instructional interaction and infrastructural constraints. Delayed feedback and insufficient instructional time indicate reduced opportunities for dialogue between learners and teachers. Recent distance education research has emphasized that limited dialogue and constrained feedback mechanisms increase transactional distance, which in turn negatively affects learner engagement, comprehension, and persistence in remote learning environments (Bozkurt et al., 2020; Paul et al., 2022).

Evidence from COVID-19–era and post-pandemic studies further demonstrates that low-interaction modalities, including broadcast-based instruction, are less effective when they rely solely on one-way content delivery without structured opportunities for feedback and learner support (Hodges et al., 2020; König et al., 2020). International policy analyses likewise stress that while radio-based instruction is a critical low-tech solution for ensuring educational continuity in marginalized and low-connectivity settings, its effectiveness depends on complementary strategies such as guided learning materials, localized facilitation, and mechanisms for teacher–learner interaction (UNESCO, 2020, 2021). These findings underscore the need to intentionally reduce transactional distance in RBI through enhanced interaction, improved scheduling, and supportive instructional structures.

The reported difficulty with self-directed learning further highlights the limitations of one-way broadcast instruction, especially among basic education learners who require structured guidance. These findings are consistent with Sadeghi (2019), who emphasized that distance learning environments must incorporate support mechanisms to address learner autonomy and motivation. Technical issues such as limited signal access reinforce UNESCO's (2020) observation that infrastructure constraints remain a major barrier to equitable education delivery in rural areas.

Technology and Cost Adjustments to Strengthen RBI Implementation

To explore strategies for improving RBI implementation, learning organizers evaluated proposed technology and cost adjustments. The results are shown in Table 4.

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Table 4
Proposed Technology and Cost Adjustments for Radio-Based Instruction

Indicator	M	SD	Verbal Description
Integration of RBI into regular lessons	3.59	0.52	Strongly Agree
Orientation on technical and operational procedures	3.64	0.48	Strongly Agree
Assignment of trained teacher-presenters	3.54	0.50	Strongly Agree
Allocation of budget for RBI (school and LGU)	3.59	0.58	Strongly Agree
Grand Mean	3.58	0.42	Strongly Agree

The strong agreement on the proposed adjustments indicates institutional readiness to strengthen Radio-Based Instruction (RBI) through structured planning and strategic resource allocation. Recent implementation and education reform studies emphasize that the sustainability of educational innovations depends on organizational capacity, technical readiness, leadership support, and stable funding mechanisms, particularly in low-resource and crisis-affected contexts (Alasuutari et al., 2023; OECD, 2021). In this regard, budget allocation, targeted teacher training, and systematic technical orientation are critical in reducing implementation barriers and ensuring consistent instructional quality across delivery modalities (UNESCO, 2021; World Bank, 2020).

Taken together, the findings suggest that Radio-Based Instruction is a viable and context-appropriate learning modality for geographically isolated and disadvantaged areas. Strong policy support and positive community perceptions indicate readiness for sustained implementation beyond emergency conditions. However, recent post-pandemic analyses caution that long-term effectiveness requires deliberate attention to instructional interaction, robust evaluation mechanisms, and adequate infrastructure to support learner engagement and feedback (Bozkurt et al., 2022; OECD, 2023). Addressing these dimensions is therefore essential to positioning RBI as an integral component of flexible and resilient learning systems.

CONCLUSIONS

This study examined the implementation of Radio-Based Instruction (RBI) in a geographically isolated context, focusing on institutional involvement, community perceptions, and implementation challenges. The findings indicate that RBI has been partially institutionalized, with strong policy support and broad stakeholder acceptance. Learning organizers demonstrated high involvement at the establishment level, and community respondents recognized RBI as a flexible and context-appropriate modality that supplements modular and limited face-to-face instruction.

However, persistent challenges related to instructional interaction, evaluation mechanisms, and infrastructure constrain RBI's effectiveness. Limited feedback opportunities, insufficient instructional time, and signal-related issues increased instructional distance and hindered learner engagement. These findings align with recent post-pandemic research emphasizing that low-tech distance learning modalities require structured interaction and institutional capacity to sustain learning outcomes. Overall, RBI remains a viable option for underserved areas, provided it is integrated within long-term flexible learning systems rather than treated solely as an emergency response.

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Education authorities should strengthen teacher–learner interaction in RBI through structured feedback mechanisms and complementary learning supports. Monitoring and evaluation processes should be institutionalized to ensure continuous improvement and accountability. Targeted capacity-building programs for learning organizers and teacher-presenters are recommended to enhance instructional quality. Sustainable funding and technical support should be embedded in school and local government plans to address infrastructure constraints. Finally, RBI should be positioned as a complementary modality within broader flexible and resilient learning frameworks to ensure continuity of education in low-connectivity contexts.

Conflict of Interest

This study did not receive funding from any individuals or organizations.

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