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IMPLEMENTATION AND CHALLENGES OF RADIO-BASED INSTRUCTION AMONG THE SECONDARY SCHOOLS IN MASINLOC DISTRICT, PHILIPPINES

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Abstract

The Radio-Based Instruction (RBI) is a learning delivery mode using radio broadcasts to provide modular distance learning. The study determined the extent of implementation and challenges of radio-based instruction among secondary schools in Masinloc District. The descriptive research design using the survey questionnaire was employed in the study. The respondents are females with a mean age of 37.38, married, have earned units in MA/ MS degree, and Teacher 1. The respondents strongly agreed on the extent of implementation and challenges in the implementation of RBI, respectively. There was a significant difference in the extent of implementation of radio-based instruction as to technical requirements when grouped according to the highest educational attainment profile variable. There was no significant difference in the extent of implementation of radio-based instruction when grouped according to sex, age, civil status, and position profile variable. There was a significant difference in the challenges in the implementation of radio-based instruction as to content pedagogy and learning focus when grouped according to sex profile variable. There was a significant difference in the challenges in the implementation of radio-based instruction as to learning engagement when grouped according to the highest educational attainment profile variable. There was no significant difference in the challenges in the implementation of radio-based instruction when grouped according to age, civil status, and position profile variables. There was a negligible relationship between the extent of practices and challenges encountered in the modular distance learning of the respondents. The training programs were developed based on the extent of implementation of RBI. It is recommended that the school head conduct the familiarization and provision of tools used in the implementation of RBI. The USB OTG may be used to facilitate the learning of the students in the RBI. The school head may conduct through an expert on the proper maintenance of the battery-operated AM/FM transistor radios and other modes of radio broadcast to utilize the delivery of RBI. The teachers may encourage the learners to actively participate by asking questions and raising their clarifications during the discussion. The teachers may implement the proposed training programs in the implementation of RBI in Zone 1 of the Division of Zambales, Philippines.

Keywords: Implementation, Radio-based Instruction, Modular Distance Learning

INTRODUCTION

The COVID-19 pandemic brought a tremendous impact on our lives most especially in the educational system. The traditional way of teaching evolved into distance learning to continue education even in this challenging time. Since face-to-face classes are not possible, distance learning, which includes different modalities such as Modular Distance Learning, Online Distance Learning, and TV/Radio-Based Instruction, was introduced.

Modular Distance Learning, allows learners to use self-learning modules (SLMs) or guided learning activity kits (GLAK) in print or electronic copy, where they can study their lessons using the materials provided. While online learning allows learners to participate actively in the discussion facilitated by teachers through the use of different technologies with access to the internet. On the other hand, TV/Radio-Based Instruction is used by teachers to teach their learners through video lessons or radio scripts. Among these modalities, Radio-Based Instruction (RBI) emerged as a vital tool, particularly in regions with limited internet connectivity. RBI integrates radio broadcasts with structured modular learning materials, ensuring continuity in education.

These different learning modalities were used by secondary schools in the Masinloc District. The secondary teachers supplement the modular learning by either motivating the learner to attend the online classes or by airing their lessons on the radio or uploading the video lessons on the Facebook page for access by the learners while working out with their SLMs/GLAK. Significantly, the Local School Board in Masinloc provided transistor radios to selected students who don't have access to online learning for them to at least have access to radio-based instruction. However, its implementation presents notable challenges for both students and teachers.

For students, limited access to radios and the difficulty of following lessons without visual aids often hinder learning. Many learners also face distractions at home, reducing their focus and engagement with the material. Additionally, the absence of immediate feedback from teachers during broadcasts can impede their comprehension and application of concepts.

Teachers, on the other hand, encounter obstacles in preparing engaging and effective radio lessons. Adapting traditional teaching methods to an audio-only format requires significant effort and creativity. Moreover, many educators lack proper training in RBI delivery, which can result in suboptimal lessons. Technical issues, such as poor signal quality and inadequate radio equipment, further exacerbate these challenges. Balancing RBI delivery with the management of students' self-learning modules adds another layer of complexity, increasing the workload and stress for educators.

Despite these challenges, the commitment of local governments and educational institutions to provide resources, such as transistor radios and training programs, has been instrumental in supporting RBI implementation. Addressing these challenges through comprehensive support and innovative strategies can ensure that RBI fulfills its potential as a transformative learning modality during and beyond the pandemic.

The effectiveness of the Radio-Based Instruction (RBI) program could depend on how educators perceive the "old technology" with a "new program" within their classroom. While the application of Radio-Based Instruction is the focus of the study, it is by no means the only method for using radio successfully in educating students

in the new normal due to the pandemic. Nevertheless, RBI has been among the most widely used methods in the developing world, due to its good measure and funding by the local school board.

Thus, the researcher determined the extent of implementation and challenges of radio-based instruction among secondary schools in Masinloc District, Philippines.

METHODOLOGY

Research Design

The descriptive correlation design was used in this study. The implementation and challenges of radio-based instruction among secondary schools were described based on the identified indicators in a survey questionnaire which served as the main instruments. The current situation among secondary schools in the district of Masinloc was investigated relative to Radio-Based Instruction (RBI) as a strategy in the new normal teaching under distance education.

Respondents and Location

The respondents of the study were the 151 purposively selected teachers and school heads of public secondary schools in Masinloc District, Schools Division of Zambales during the school year 2021-2022.

The six (6) public secondary schools were Bamban National High School, Bani National High School, Coto High School, San Salvador High School and Sto. Rosario Integrated School, and Taltal National High School.

These public secondary schools are managed by the Department of Education supervised by the public schools' district supervisor and principals. The schools have administrative buildings, academic classrooms, and ancillary classrooms such as a computer laboratory, science laboratory, learning resource materials and development system (LRMDS) room, and school-based management (SBM) office.



Figure 1. A Map of Masinloc, Zambales showing the location of Public Secondary Schools in the District of Masinloc

The Instrument

This study utilized a researcher-made survey questionnaire. The questionnaire was composed of three (3) parts such as: Part I profile of the respondents in terms of sex, age, civil status, highest

educational attainment, and position; Part II the extent of implementation of radio-based instruction based on the Aide Memoire series of 2021 by the DepEd Office of the Undersecretary for Administration (OUA); and Part III the challenges experienced by the respondents in terms of content and pedagogy, learning focus, work performance, engagement, and competence in radio-based instruction. This will be rated using a four-point Likert scale such as (4) strongly agree, (3) agree, (2) disagree, and (1) strongly disagree.

The questionnaire was validated by the panel members of President Ramon Magsaysay State University Graduate School who are experts in evaluating and validating research questionnaires. Their ideas and suggestions were solicited for further improvement of the instrument before it would undergo reliability testing. The sample questionnaire was given to them for evaluation to ensure correctness and validity.

After the validation, a pilot study was conducted on respondents outside the district who were not included in the study for clarity and overall impressions. The reliability testing followed after the retrieval of the questionnaire from the pilot schools. This was done by using Cronbach Alpha.

Data Collection

After the validation process and reliability testing, the questionnaire was forwarded to the adviser for final checking. The researcher prepared a letter to conduct a study addressed to the Schools Division Superintendent for approval noted by the dean of the graduate school. Once approved, the endorsement letter from the Schools Division Office was forwarded to the Public Schools District Supervisor of Masinloc in order to receive the endorsement and inform the school principals under the jurisdiction of the study being conducted. The letter of consent was provided for the teacher-respondents in accordance with the Data Privacy Act. The researcher administered the questionnaires through online and offline modalities observing health protocols during personal visits to the schools, online survey via messenger, Google Forms and electronic mail. The data were gathered, processed and appropriated statistical tools were used with the assistance of a statistician. Discussion and interpretation of the results followed.

Data Analysis

For the statistical treatment of data, the following were utilized through the aid of the MS-Excel program and SPSS version 20; to wit: Frequency count, Percentage and Mean were used to determine the profile of the teachers and school heads. Analysis of Variance (ANOVA) was used to compare groups on possible differences and find out if the results are significant and figure out if the null hypothesis will be accepted or rejected. Pearson Product Moment Correlation Coefficient r was used for the hypothesis test about whether the data is as expected. The basic idea behind the test is to compare the observed values in the data to the expected values that would see if the null hypothesis is true. Likert Scale was used as a unidimensional scale to collect respondents' responses and opinions based on the indicators and variables in the survey questionnaire.

RESULTS AND DISCUSSION

1. Profile of the Respondents

The profile of the respondents as to sex, age, civil status, and highest educational attainment was discussed below.

1.1 Sex. The majority of the respondents are females with 104 or 80.62% while males with 25 or 19.38%. This

signifies that more females are in the teaching profession. At the primary grade level, the United Kingdom reached 70 percent of female teachers by 1901 and Argentina 85 percent by 1930 (Kelleher et al., 2011). Most regions of the world have a large and increasing share of female teachers, except sub-Saharan Africa, which has a low share of female teachers with little change over time.

1.2 Age. Out of 129 respondents, 26 or 20.30% are in the age group of 26-30 years old while the least with 1 or 0.78% are in the age group of 60 years old and above. The computed mean age is 37.38. This indicates that teachers are in the early adulthood. In early adulthood, their physical abilities are at their peak, including muscle strength, reaction time, sensory abilities, and cardiac functioning (Tyler, 2020).

1.3 Civil Status. The majority of the respondents are married with 85 or 65.89% while the least Widow/er with 5 or 3.88%. This signifies that teachers have a life-long commitment that widens their horizons and purpose of existence. Marriage opens up the gates to realizing a higher purpose in your life (Singh, 2018).

1.4 Highest Educational Attainment. Most of the respondents have earned units in Master's degree with 51 or 39.53%. This signifies that teacher continuously develop their knowledge and skills by studying advanced studies and for professional growth. Continuing education helps career-minded individuals to continually improve their skills and become more professional at their work. Professional development for teachers gives them a chance to step out of their routine- they become the student rather than the teacher (Professional Developments for Teachers,2020).

1.5 Position. Out of 129 respondents, 72 or 55.81% are Teachers I while the least is Principal II, no one responded. This signifies that DepEd teachers are new in the teaching profession. Out of 129 respondents, 72 or 55.81% are Teachers I while the least is Principal II, no one responded. This signifies that teachers are new in the teaching profession. Based on the DepEd Order Number 7, series 2015 re: Hiring for Teachers Position Effective School Year 2015-2016, the Teacher I is the entry-level position.

2. Extent of Implementation of Radio-Based Instruction

2.1 Teacher Capacity. The computed overall weighted mean on the extent of implementation of RBI in terms of Teacher Capacity was 3.34 with a descriptive rating of strongly agree.

The respondents strongly agreed on that planning and designing their lessons aligned with the most essential learning competencies (MELCs) with the highest average weighted mean of 3.77 (ranked 1st) while the respondents agreed that the equipped with all the tools needed in RBI with a lowest average weighted mean of 3.05 (ranked 13th). The result manifested that the teachers were instructed by the DepEd to refer to the MELCs in creating instructional materials for the learners. The use of MELCs provides the teachers with a detailed basis on what learning competencies to be acquired by the learners. According to its guidelines, the MELCs are part of the department's response to develop resilient education systems, especially during emergencies and will enable

DepEd to focus instruction on the most essential and indispensable competencies (Fontanos et al, 2020).

2.2 Learning Environment. The respondents strongly agreed that there is support for media institutions in the municipality with the highest average weighted mean of 3.50 (ranked 1st) while the respondents agreed that all students have means to be reached by the RBI with the lowest average weighted mean of 3.79 (ranked 10th). The result manifested that there are existing media groups or experts that support the implementation of RBI in the different public schools. The existence of the established radio station in the municipality is an advantage to deliver the instruction to the learners. According to the DepEd (2020), committed to widening access to education despite the pandemic, the Department of Education (DepEd) secured an ally in the National Telecommunication Commission (NTC) to support television and radio-based learning delivery for the upcoming school year. DepEd, through the NTC headed by Commissioner Gamaliel Cordoba, has requested television, radio, and cable operators to broadcast educational materials and instructions as part of the Department’s Basic Education Learning Continuity Plan (BE-LCP). The computed overall weighted mean on the extent of implementation of RBI in terms of Learning Environment was 3.30 with a descriptive rating of strongly agree.

2.3 Technical Requirements. The computed overall weighted mean on the extent of implementation of RBI in terms of Technical Requirements was 3.13 with a descriptive rating of agree.

The respondents strongly agreed that the RBI learning episodes are aligned with the printed self-learning modules (SLMs) with the highest average weighted mean of 3.50 (ranked 1st) while the respondents agreed that every student maintains battery-operated AM/FM transistor radios and other modes of radio broadcast with an average weighted mean of 2.96 (ranked 15th). The results manifested that the teachers religiously abide their teachers’ guide for the subject and the development of RBI is patterned on the contents of SLMs. The DepEd said 7,740 RBI or Radio-based instruction learning materials are ready for rollout across all regions in the country, including teaching scripts and learning episodes, which will help educate and engage with students in far-flung areas (The Manila Times, 2020).

2.4 Purpose. The computed overall weighted mean on the extent of implementation of RBI in terms of Purpose was 3.27 with a descriptive rating of strongly agree.

The respondents strongly agreed that the RBI is also used to deliver lessons to the learners at home with the highest average weighted mean of 3.43 (ranked 1st) while the respondents agreed that the use of RBI enables students to express their ideas and thoughts better with the least average weighted mean of 3.12 (ranked 10th). The result manifested that the teachers developed an RBI for modular distance learning. At present the teachers are implementing multimodal learning to the learners. According to the report of Hernando-Malipot (2020), DepEd said that distance learning may be implemented through various delivery modalities including Modular Distance Learning (MDL) which can either be Digital Modular Distance Learning (DMDL) or

Printed Modular Distance Learning (PMDL); Online Distance Learning (ODL), TV-Video/Radio-based Instruction (TV-Video/RBI) through TV-Video (SLM-based), TV-Video (MELCs Mapped), and Radio-Based Instruction (RBI); and Blended Distance Learning (BDL).

2.4.1 The summary rating in the extent of implementation of the Radio- Based Instruction among Learners in terms of Purpose

The summary rating in the extent of implementation of the Radio-Based Instruction in terms of Purpose is presented in Table 1.

Table 1. Summary of Mean Rating in Extent of Implementation of Radio-Based Instruction among Learners

	AWM	Descriptive Rating	Rank
Teacher Capacity	3.34	Strongly Agree	1
Learning Environment	3.30	Strongly Agree	2
Technical Requirements	3.13	Agree	4
Purpose	3.27	Strongly Agree	3
Overall Weighted Mean	3.26	Strongly Agree	

The respondents evaluated the extent of implementation of RBI as to Teacher Capacity (3.34, Strongly Agree) and ranked 1st; Learning Environment (3.30, Strongly Agree) and ranked 2nd; Purpose (3.27, Strongly Agree) and ranked 3rd; and Technical Requirements (3.13, Agree) and ranked 4th. The result implies that teachers went to trainings and seminars to prepare them for this kind of approach under the MDL modality. Training has also been conducted nationwide to help equip teachers and parents for the changes that are bound to happen this school year. Some 804,272 teachers have been trained and they have also reached out to 14,944,593 parents in all 13 regions. In total, 45,321 schools have helped the DepEd in conducting seminars to educate both teachers and parents. The computer's overall weighted mean was 3.26 with a descriptive rating of Strongly Agree.

3. Challenges in The Implementation of Radio-Based Instruction among Learners

3.1 Content and Pedagogy. The respondents strongly agreed that the RBI is aligned in the most essential learning competencies with the highest average weighted mean of 3.45 (ranked 1st) and the respondents agreed that the RBI is an excellent tool for teaching learners with disabilities with the least average weighted mean of 3.14. The result indicates that the content or episodes on RBI is a challenge to the respondents that may affect the learning competencies of the learners. Unpacking the standards is important because it gives me a better understanding of the content they are teaching. It allows them to see what the students need to know before teaching. This gives them an opportunity to help with any gaps. Knowing the content will also help them know how to prepare the students for future learning of the skill (Herring, 2020). The computed overall weighted mean on the challenges in the implementation of RBI in terms of Content and Pedagogy was 3.28 with a descriptive rating of strongly agree.

3.2 Learning Focus. The respondents strongly agreed that the RBI seamlessly integrates instruction with

assessment with the highest weighted mean of 3.31 (ranked 1st) while the respondents agreed that the students look forward to lessons taught using RBI with the lowest average weighted mean of 3.22 (ranked 10th). The result indicates that the respondents are able to commit errors due to the workload in the preparations of SLMs, supplementary reading materials and assessment for the learners. The initiative allows the DepEd to be more open to public feedback in order to further improve the learning experience of every student in the country (The Manila Times, 2020). The computed overall weighted mean on the challenges in the implementation of RBI in terms of Learning Focus was 3.27 with a descriptive rating of strongly agree.

3.3 Learning Engagement of Students. The respondents strongly agreed that the use of RBI increases students' enthusiasm to learn the topics with the highest weighted mean of 3.26 (ranked 1st) while the respondents agreed that the use of RBI is my preferred than chalk and talk method with the lowest average weighted mean of 2.98 (ranked 10th).

The results indicated that the learners need to be motivated and encouraged to study using this RBI approach. In the first few weeks of classes, the DepEd said it focused on the proper implementation of alternative learning delivery modalities and providing the necessary psychosocial support for the academic community. Prior to the opening of classes, DepEd trained teachers to provide support to students who may be struggling to cope with education's new normal (The Manila Times, 2020). The computed overall weighted mean on the challenges in the implementation of RBI in terms of Learning Engagement of Students was 3.17 with a descriptive rating of agree.

3.4 Competence. The respondents agreed that the RBI has its limitations the reason why I am not comfortable using it with the highest weighted mean of 3.02 (ranked 1st) while the respondents agreed that the RBI is difficult to deliver with the lowest average weighted mean of 2.70 (ranked 10th).

The result indicated that the respondents are hesitant to utilize the RBI in the learning modality due to the language barrier and additional tasks in preparation of the learning materials.

Supplementing teachers with radio programmers was not only meant to improve the quality of learners but also teachers in their work. However, the use of radio programs in schools posed a new

challenge to teaching. Teachers countrywide complained of language barrier particularly the use of English as a medium of instruction in rural areas, and inadequate preparation by the subject teacher to facilitate the radio lessons; among other challenges facing the radio lessons in schools (Asiago, Mugambi, & Wanjala, 2014). The computed overall weighted mean on the challenges in the implementation of RBI in terms of Competence was 2.88 with a descriptive rating of agree.

3.5 Summary of Mean Rating in Challenges in the Implementation of Radio-Based Instruction

The summary of mean rating in challenges in the implementation of Radio-Based Instruction is shown in Table 2.

The respondents evaluated the challenges in the implementation of Radio-Based Instruction as to Content and Pedagogy (3.28, Strongly Agree) and ranked 1st; Learning Focus (3.27, Strongly Agree) and ranked 2nd; Learning Engagement (3.17, Agree) and ranked 3rd; and Competence (2.88, Agree) and ranked 4th. Positive results may stem from the opportunity to provide learners with curriculum-aligned content of a consistent standard. When educators design radio scripts, evidence from previous pandemic responses (Hallgarten, 2020). The computed overall weighted mean on the challenges in the implementation of RBI was 3.15 with a descriptive rating of 3.15.

Table 2. Summary of Mean Rating in Challenges in the Implementation of Radio-Based Instruction among Learners

	AWM	Descriptive Rating	Rank
Content and Pedagogy	3.28	Strongly Agree	1
Learning Focus	3.27	Strongly Agree	2
Learning Engagement	3.17	Agree	3
Competence	2.88	Agree	4
Overall Weighted Mean	3.15	Agree	

4. Test of Significant Difference on Extent of Implementation of Radio-Based Instruction When Grouped According to Profile Variable

4.1 Sex Profile Variable

The test of significant difference on the extent of implementation of Radio-Based Instruction when grouped according to the Sex Profile Variable is shown in Table 3.

Table 3. Test of Significant Difference on Extent of Implementation of Radio-Based Instruction among Learners When Grouped According to Sex Profile Variable

Source of Variations	df	F	Sig.	Decisions/ Interpretation	
Teacher Capacity	Between Groups	1	0.66	0.42	Accept Ho Not Significant
	Within Groups	127			
	Total	128			
Learning Environment	Between Groups	1	0.56	0.46	Accept Ho Not Significant
	Within Groups	127			
	Total	128			
Technical Requirements	Between Groups	1	0.94	0.33	Accept Ho

	Within Groups	127			Not Significant
	Total	128			
Purpose	Between Groups	1	0.82	0.37	Accept Ho Not Significant
	Within Groups	127			
	Total	128			

The computed significance value (Sig.) of teacher capacity (Sig= 0.42), learning environment (Sig= 0.46), technical requirements (Sig= 0.33) and purpose (Sig= 0.37) were all greater than (>) 0.05 alpha level of significance. The results indicate that there was no significant difference in the extent of implementation of radio-based instruction when grouped according to sex profile variable. Therefore, the null hypothesis is accepted. The results indicated that sex has no relation or effect on the implementation of RBI.

The distance education system combines radio broadcasts with active learning and interactive teaching practices. Interactive radio-based Instruction builds on local resources and knowledge, using radio partners with schools in regions that have shortages of qualified teachers, school infrastructure, and learning materials (Hundred, 2021).

4.2 Age Profile Variable

The test of significant difference in the extent of implementation of Radio-Based Instruction when grouped according to Age Profile Variable is shown in Table 4.

Table 4. Test of Significant Difference on Extent of Implementation of Radio-Based Instruction among Learners When Grouped According to Age Profile Variable

Source of Variations		df	F	Sig.	Decisions/ Interpretation
Teacher Capacity	Between Groups	8	0.54	0.82	Accept Ho Not Significant
	Within Groups	120			
	Total	128			
Learning Environment	Between Groups	8	0.63	0.75	Accept Ho Not Significant
	Within Groups	120			
	Total	128			
Technical Requirements	Between Groups	8	0.48	0.87	Accept Ho Not Significant
	Within Groups	120			
	Total	128			
Purpose	Between Groups	8	0.71	0.69	Accept Ho Not Significant
	Within Groups	120			
	Total	128			

The computed significance value (Sig.) of teacher capacity (Sig= 0.82), learning environment (Sig= 0.75), technical requirements (Sig= 0.87) and purpose (Sig= 0.67) were all greater than (>) 0.05 alpha level of significance. The results indicate that there was no significant difference on the extent of implementation of radio-based instruction when grouped according to age profile variable. Therefore, the null hypothesis is accepted. The results indicated that age has no relation or effect on the implementation of RBI. Ibrahim and Mishra (2016) attempt to locate an appropriate mechanism and targeted use of the college radio in contributing to the learning outcomes and educational experience of the students. The study finds considerable scope for radio-based learning at Sur College of Applied Sciences across a range of uses and gratification indicators consistent with the primary objectives of the college. The study discusses the theoretical and practical implications of the findings and the pedagogical significance of the college radio as an alternative.

4.3 Civil Status Profile Variable

The test of significant difference in the extent of implementation of Radio-Based Instruction when grouped according to the Civil Status Profile Variable is shown in Table 5.

The computed significance value (Sig.) of teacher capacity (Sig= 0.23), learning environment (Sig= 0.50), technical requirements (Sig= 0.23) and purpose (Sig= 0.48) were all greater than (>) 0.05 alpha level of significance. The results indicate that there was no significant difference in

the extent of implementation of radio-based instruction when grouped according to the civil status profile variable. Therefore, the null hypothesis is accepted.

Table 5. Test of Significant Difference on Extent of Implementation of Radio-Based Instruction among Learners When Grouped According to Civil Status Profile Variable

Source of Variations		df	F	Sig.	Decisions/ Interpretation
Teacher Capacity	Between Groups	2	1.47	0.23	Accept Ho Not Significant
	Within Groups	126			
	Total	128			
Learning Environment	Between Groups	2	0.69	0.50	Accept Ho Not Significant
	Within Groups	126			
	Total	128			
Technical Requirements	Between Groups	2	1.47	0.23	Accept Ho Not Significant
	Within Groups	126			
	Total	128			
Purpose	Between Groups	2	0.74	0.48	Accept Ho Not Significant
	Within Groups	126			
	Total	128			

The results indicated that regardless of the respondents' marital status, it has no effect on the implementation of the RBI. Acido, Muega, and Oyzon (2013) presented that RBI program can produce significant educational results and can make a significant difference in family literacy skills and practices if its design, topic plotting, and content are carefully planned and utilized along the lines of literacy support for parents of young learners. Also, a radio-based literacy program is best used with other media of communication and with a strong support component in which learners and their parents engage in a person-to-person mode of communication with literacy experts and teachers.

4.4 Highest Educational Profile Variable

The test of significant difference in the extent of implementation of Radio-Based Instruction when grouped according to the Highest Educational Attainment Profile Variable is shown in Table 6.

The computed significance value (Sig.) of technical requirements (Sig= 0.03) is less than (<) 0.05 alpha level of significance. The results indicate that there was a significant difference in the extent of implementation of radio-based instruction when grouped according to the highest educational attainment profile variable. Therefore, the null hypothesis is rejected. The result indicates that the educational background of the respondents is more knowledgeable on the technical aspects of the RBI. Teacher experience and teacher education level have been viewed as two characteristics that are related to teacher quality. They may also be viewed as important criteria in selecting teachers, serving as proxy variables for skill level or expertise (Zhang, 2008).

Table 6. Test of Significant Difference on Extent of Implementation of Radio-Based Instruction among Learners When Grouped According to Highest Educational Attainment Profile Variable

Source of Variations		df	F	Sig.	Decisions/ Interpretation
Teacher Capacity	Between Groups	3	0.78	0.51	Accept Ho Not Significant
	Within Groups	125			
	Total	128			
Learning Environment	Between Groups	3	0.78	0.51	Accept Ho Not Significant
	Within Groups	125			
	Total	128			
Technical Requirements	Between Groups	3	3.15	0.03	Reject Ho Significant
	Within Groups	125			
	Total	128			
Purpose	Between Groups	3	1.74	0.16	Accept Ho Not Significant
	Within Groups	125			
	Total	128			

The computed significance value (Sig.) of teacher capacity (Sig= 0.51), learning environment (Sig= 0.51), and purpose (Sig= 0.16) were all greater than (>) 0.05 alpha level of significance. The results indicate that there was no significant difference in the extent of implementation of radio-based instruction when grouped according to the highest educational attainment profile variable. Therefore, the null hypothesis is accepted.

4.5 Position Profile Variable

The test of significant difference in the extent of implementation of Radio-Based Instruction when grouped according to the Position Profile Variable is shown in Table 7.

The computed significance value (Sig.) of teacher capacity (Sig= 0.66), learning environment (Sig= 0.92), technical requirements (Sig= 0.91) and purpose (Sig= 0.58) were all greater than (>) 0.05 alpha level of significance. The results indicate that there was no significant difference on the extent of implementation of radio-based instruction when grouped according to position profile variable. Therefore, the null hypothesis is accepted.

The results indicated that the academic rank of the teacher has no effect on the RBI implementation. A good and effective radio-based literacy program serves as an impetus for teacher education institutions to find innovative ways to help empower impoverished communities and families, as they work to support their children in carrying out academic tasks and roles (Acido, Muega, & Oyzon, 2013).

Table 7. Test of Significant Difference on Extent of Implementation of Radio-Based Instruction among Learners When Grouped According to Position Profile Variable

Source of Variations		df	F	Sig.	Decisions/ Interpretation
Teacher Capacity	Between Groups	10	0.77	0.66	Accept Ho Not Significant
	Within Groups	118			
	Total	128			
Learning Environment	Between Groups	10	0.45	0.92	Accept Ho Not Significant
	Within Groups	118			
	Total	128			
Technical Requirements	Between Groups	10	0.47	0.91	Accept Ho Not Significant
	Within Groups	118			
	Total	128			
Purpose	Between Groups	10	0.85	0.58	Accept Ho Not Significant
	Within Groups	118			
	Total	128			

5. Test of Significant Difference on Challenges in the Implementation of Radio-Based Instruction When Grouped According to Profile Variable

5.1 Sex Profile Variable

The test of significant differences in challenges in the implementation of Radio-Based Instruction, when grouped according to the Sex Profile Variable, is shown in Table 8.

The computed significance value (Sig.) of learning engagement (Sig= 0.02), and competence in radio-based instruction (Sig= 0.02) were all less than (<) 0.05 alpha level of significance. The results indicate that there was a significant difference in the challenges in the implementation of radio-based instruction when grouped according to sex profile variable. Therefore, the null hypothesis is rejected. The results indicated the sex profile of the teachers has effects on the curriculum of the RBI implementation. Acido, Muega, and Oyzon (2013) presented that RBI program can produce significant educational results and can make a significant difference in family literacy skills and practices if its design, topic plotting, and content are carefully planned and utilized along the lines of literacy support for parents of young learners.

The computed significance value (Sig.) of learning engagement (Sig= 0.08), and competence in radio-based instruction (Sig= 0.12) are all greater than (>) 0.05 alpha level of significance. The results indicate that there was no significant difference in the challenges in the implementation of radio-based instruction when grouped according to sex profile variable. Therefore, the null hypothesis is accepted. The result indicated that regardless of the sex of the teachers will not affect the learning engagement and competence in radio-based instruction. During the discussion, the teachers encouraged the learners to participate actively in the class. The teachers give time the learners to ask questions, make clarifications and give their point of view on the lessons. With regards to the competence of radio-based instruction, teachers are able to adapt on what are the new innovations that may be utilized in teaching. Classroom participation is a feature of many course designs. It can result in insightful comments and interesting connections being made by students and can foster a high level of energy and enthusiasm in the classroom learning environment (University of Waterloo, 2020).

Table 8. Test of Significant Difference on Challenges in the Implementation of Radio-Based Instruction among Learners When Grouped According to Sex Profile Variable

Source of Variations		df	F	Sig.	Decisions/ Interpretation
Content and Pedagogy	Between Groups	1	6.04	0.02	Reject Ho Significant
	Within Groups	127			
	Total	128			
Learning Focus	Between Groups	1	5.34	0.02	Reject Ho Significant
	Within Groups	127			
	Total	128			
Learning Engagement	Between Groups	1	3.13	0.08	Accept Ho Not Significant
	Within Groups	127			
	Total	128			
Competence in Radio-Based Instruction	Between Groups	1	2.46	0.12	Accept Ho Not Significant
	Within Groups	127			
	Total	128			

5.2 Age Profile Variable

The test of significant differences in challenges in the implementation of Radio-Based Instruction when grouped according to Age Profile Variable is shown in Table 9.

Table 9. Test of Significant Difference on Challenges in the Implementation of Radio-Based Instruction among Learners When Grouped According to Age Profile Variable

Source of Variations		df	F	Sig.	Decisions/ Interpretation
Content and Pedagogy	Between Groups	8	1.04	0.41	Accept Ho Not Significant
	Within Groups	120			
	Total	128			
Learning Focus	Between Groups	8	1.62	0.13	Accept Ho Not Significant
	Within Groups	120			
	Total	128			
Learning Engagement	Between Groups	8	0.81	0.60	Accept Ho Not Significant
	Within Groups	120			
	Total	128			
Competence in Radio-Based Instruction	Between Groups	8	1.27	0.26	Accept Ho Not Significant
	Within Groups	120			
	Total	128			

The computed significance value (Sig.) of content and pedagogy (Sig= 0.41), learning focus (Sig= 0.13), learning engagement (Sig= 0.60), and competence in radio-based instruction (Sig= 0.26) are all greater than (>) 0.05 alpha level of significance. The results indicated that there was no significant difference in the challenges in the implementation of radio-based instruction when grouped according to age profile variables. Therefore, the null hypothesis is accepted. The results indicated that age has nothing to do with the challenges in RBI implementation. Kurrien (2008), in her study, stated the critical features of radio instruction initiatives such as The teacher remaining central to the teaching-learning process and the radio/video/computer programs only supporting her.

The programs are so designed that they encourage 'interactivity' and 'inclusion' in the classroom. In the study on the age of the teacher was not taken as an important attribute by the students. 44 % (33) of the students preferred young and 43% (32) preferred older teachers while 13% of them did not have a specific age preference. This data for preference of age by students was not statistically significant. (P value > 0.05) Bodhe et al., also had similar findings (Bodhe et al., 2015).

5.3 Civil Status Profile Variable

The test of significant differences in challenges in the implementation of Radio-Based Instruction when grouped according to the Civil Statue Profile Variable is shown in Table 10.

Table 10. Test of Significant Difference on Challenges in the Implementation of Radio-Based Instruction among Learners When Grouped According to Civil Status Profile Variable

Source of Variations		df	F	Sig.	Decisions/ Interpretation
Content and Pedagogy	Between Groups	2	0.14	0.87	Accept Ho Not Significant
	Within Groups	126			
	Total	128			
Learning Focus	Between Groups	2	0.32	0.72	Accept Ho Not Significant
	Within Groups	126			
	Total	128			
Learning Engagement	Between Groups	2	0.35	0.70	Accept Ho Not Significant
	Within Groups	126			
	Total	128			
Competence in Radio-Based Instruction	Between Groups	2	1.04	0.35	Accept Ho Not Significant
	Within Groups	126			
	Total	128			

The computed significance value (Sig.) of content and pedagogy (Sig= 0.87), learning focus (Sig= 0.72), learning engagement (Sig= 0.70), and competence in radio-based instruction (Sig= 0.35) were all greater than (>) 0.05 alpha level of significance. The results indicate that there was no significant difference on the challenges in the implementation of radio-based instruction when grouped according to the civil status profile variable. Therefore, the null hypothesis is accepted. The results indicated that civil status has nothing to do with the challenges in RBI implementation.

Even the teachers have responsibilities on their families, they make sure that they perform their duties and responsibilities in teaching Atadoga and Onaolapo (2008) stated that instructional strategies adopted by teachers at all levels of education in imparting knowledge and skills to the learners were determined by teachers' abilities, topic to be taught, learners age, available resources, and available space.

5.4 Highest Educational Attainment Profile Variable

The test of significant differences on challenges in the implementation of Radio-Based Instruction when grouped according to the Highest Educational Attainment Profile Variable is shown in Table 11.

The computed significance value (Sig.) of learning engagement (Sig= 0.03) is less than (<) 0.05 alpha level of significance. The results indicate that there was a significant difference on the challenges in the implementation of radio-based instruction when grouped according to the highest educational attainment profile variable. Therefore, the null hypothesis is rejected. The result indicated that educational background affects learning engagement. Interactive lessons should include prompts for facilitators. The support of a facilitator is key to ensuring student engagement with radio broadcasts (Plan International, 2016).

Table 11. Test of Significant Difference on Challenges in the Implementation of Radio-Based Instruction among Learners When Grouped According to Highest Educational Attainment Profile Variable

Source of Variations		df	F	Sig.	Decisions/ Interpretation
Content and Pedagogy	Between Groups	3	2.18	0.09	Accept Ho Not Significant
	Within Groups	125			
	Total	128			
Learning Focus	Between Groups	3	2.12	0.10	Accept Ho Not Significant
	Within Groups	125			
	Total	128			
Learning Engagement	Between Groups	3	3.07	0.03	Reject Ho Significant
	Within Groups	125			
	Total	128			
Competence in Radio-Based Instruction	Between Groups	3	1.02	0.38	Accept Ho Not Significant
	Within Groups	125			
	Total	128			

The computed significance value (Sig.) of learning engagement (Sig= 0.03) is less than (<) 0.05 alpha level of significance. The results indicate that there was a significant difference in the challenges in the implementation of radio-based instruction when grouped according to the highest educational attainment profile variable. Therefore, the null hypothesis is rejected. The result indicated that educational background affects learning engagement. Interactive lessons should include prompts for facilitators. The support of a facilitator is key to ensuring student engagement with radio broadcasts (Plan International, 2016).

The computed significance value (Sig.) of content and pedagogy (Sig= 0.09), learning focus (Sig= 0.10), and competence in radio-based instruction (Sig= 0.38) were all greater than (>) 0.05 alpha level of significance. The results indicate that there was no significant difference in the challenges in the implementation of radio-based instruction when grouped according to the highest educational attainment profile variable. Therefore, the null hypothesis is accepted. The result indicated that the educational background has no significant effect on the learning focus and their competence in radio-based instruction. (Collie, Martin & Granziera, 2020) Revealed in their study that there are new teaching methodologies introduced to the teachers on instruction and they were able to grasp and apply for their learners. Adaptability is something teachers require on a regular basis and likely plays an important role in helping them to navigate the demands of their work.

5.5 Position Profile Variable

The test of significant differences in challenges in the implementation of Radio-Based Instruction when grouped according to the Position Profile Variable is shown in Table 12.

The computed significance value (Sig.) of content and pedagogy (Sig= 0.86), learning focus (Sig= 0.86), learning engagement (Sig= 0.40), and competence in radio-based instruction (Sig= 0.50) were all greater than (>) 0.05 alpha level of significance. The results indicate that there was no significant difference in the challenges in the implementation of radio-based instruction when grouped according to position profile variable.

Table 12. Test of Significant Difference on Challenges in the Implementation of Radio-Based Instruction among Learners When Grouped According to Position Profile Variable

Source of Variations		df	F	Sig.	Decisions/ Interpretation
Content and Pedagogy	Between Groups	10	0.54	0.86	Accept Ho Not Significant
	Within Groups	118			
	Total	128			
Learning Focus	Between Groups	10	0.54	0.86	Accept Ho Not Significant
	Within Groups	118			
	Total	128			
Learning Engagement	Between Groups	10	1.06	0.40	Accept Ho Not Significant
	Within Groups	118			
	Total	128			
Competence in Radio-Based Instruction	Between Groups	10	0.94	0.50	Accept Ho Not Significant
	Within Groups	118			
	Total	128			

Therefore, the null hypothesis is accepted. The result indicated that the respondents' position does not affect the challenges of the implementation of RBI. The teachers gave importance to innovating and teaching the learners on the new teaching strategies to provide the required learning competencies. Mwara (2011), in her study, revealed that radios are lacking in secondary schools. Most Principals (88.9%) give no administrative support to the radio teaching program leading to a lack of awareness by teachers (64%) of the program and non-incorporation of the programmes in the regular school time table by 100 % of all the schools.

6. Test of Significant Relationship Between Extent of Implementation and Challenges of Radio-Based Instruction among Learners

The test of the significant relationship between the extent of implementation and challenges of Radio-Based Instruction is shown in Table 13.

The computed Pearson r value of 0.754** denotes a high relationship between the extent of practices and challenges encountered in the modular distance learning of the respondents. The computed P-value 0.000 is less than (<) 0.05 level of significance, therefore the null hypothesis is rejected. This indicates that the challenges experienced by the respondents directly affect the implementation of radio-based instruction. When problems or issues arise in the implementation of radio-based instruction, the quality of education for the learners is greatly affected.

Table 13. Test of Significant Relationship Between Extent of Implementation and Challenges of Radio-Based Instruction among Learners

Source of Correlations		Implementation	Challenges	Decisions/ Interpretation
Implementation	Pearson Correlation	1	0.754**	High Relationship Reject Ho Significant
	Sig. (2-tailed)		0.000	
	N	129	129	

Challenges	Pearson Correlation	0.754**	1
	Sig. (2-tailed)	0.000	
	N	129	129

** Correlation is significant at the 0.01 level (2-tailed).

The results also suggested that the more challenges encountered by the teachers, the radio-based instruction implementation will not succeed. Lemma (2014) suggests that the implementation of instructional radio broadcasts indicated that the majority of teachers and students have positive attitudes toward the broadcast. In contrast, the program content and presentation are not acceptable by the teachers and students. With this regard, the basic hindrance to effective implementation of instructional radio broadcasts in particular to civics and ethical education originates from an inadequate supply of input materials, poor functioning, unsuitability of instructional curricula lessons with the existing curriculum, inability to take into account the diversify learners, lack to give emphasis on positive ethical values of the learners etc. suggest the prevalence of constraints on successful implementation of instructional radio broadcasts at sample schools.

7. Training Program. The training program was developed based on the findings of the study.

CONCLUSIONS AND RECOMMENDATIONS

Based on the significant findings of the study, the researcher concludes that the majority of the respondents are females, generally in their middle adulthood, with an average age of 37, who are married and hold the position of Teacher 1. The respondents strongly agree that there is an implementation of radio-based instruction (RBI) among learners and acknowledge the challenges associated with it. A significant difference exists in the extent of RBI implementation regarding technical requirements when grouped according to the highest educational attainment. Similarly, there is a significant difference in the challenges encountered in the implementation of RBI, particularly in content, pedagogy, and learning focus, when respondents are grouped by sex, and in learning engagement when grouped by highest educational attainment. However, there is a negligible relationship between the extent of RBI implementation and the challenges encountered in its delivery among secondary schools in Masinloc District. Based on these findings, a training program is developed to enhance the implementation of RBI.

In light of these conclusions, the researcher recommends that school heads conduct familiarization sessions and provide the necessary tools for the implementation of RBI. Respondents use USB OTG devices to facilitate student learning through RBI. Additionally, school heads seek experts to ensure proper maintenance of battery-operated AM/FM transistor radios and other radio broadcast modes to optimize RBI delivery. Teachers encourage learners to actively participate by asking questions and seeking clarifications during discussions. Lastly, educators implement the proposed training programs to further improve the effectiveness of RBI in Zone 1.

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battery-operated AM/FM transistor radios and other radio broadcast modes for optimal RBI delivery. Teachers motivate learners to engage actively by asking questions and seeking clarifications during discussions. Finally, educators implement the proposed training programs to further enhance the effectiveness of RBI in Zone 1.

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