

Multigrade Schools' Management Practices and Academic Performance of Learners in Mathematics, Science, and Reading in a Resource-Constrained Rural Multigrade Environment.

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Abstract

This study determined the Multigrade Schools Management (MSM) practices and Students' Academic Performance (SAP) of learners in Mathematics, Science, and Reading (MSR) employing an embedded mixed method. Primary quantitative and qualitative data were gathered from twenty-four (24) multigrade schools. The respondents were forty-eight multigrade teachers and teachers-in-charge, while key informants through the Focus Group discussion were twelve (12) multigrade teachers and various stakeholders. The study was conducted in the Philippines on October 2024 to March 2025 in the five Districts in the School Division of the province of Antique. Average mean was used to describe the classroom practices; Pearson *R* correlation was used to determine the significant relationship between variables. The multigrade teachers taught lessons based on the Department of Education's curriculum competencies, used integrated curriculums, and contextualized lessons. They promoted collaboration and positive behavior that created the best possible atmosphere for learning. However, these do not have much influence on the academic performance of pupils in Mathematics, Science, and Reading. Only Satisfactory (80-84) and Fairly Satisfactory (75-79) ratings dominated the academic performance of pupils. The resource allocation in multigrade schools was construed to be relatively adequate due to augmentation and creativity of teachers. Learning Materials (LM), Technical Equipment (TE), Infrastructure Support (IS), and internet connectivity need to addressed with urgency. Multigrade teachers had trouble in designing multiple lesson plans for multigrade levels. It is recommended that multigrade teachers should undergo special training in designing differentiated instruction. It is further recommended that parents and other stakeholders should be actively involved in the education of their children.

Keywords: Multigrade school, management practices, student motivation and engagement, academic performance

Introduction

Multigrade classrooms still exist in developing countries like the Philippines where pupils of different ages and grade levels are taught together in one classroom by one teacher. The most recent expansion of multigrade schooling resulted from the stimulus of the United Nations Millennium Development Goals (UNMDG's, 2015). Multigrade instruction was rooted in government schools in North America and Europe in the nineteenth century, this mode of instruction has been adopted and commonly practiced in the Asia-Pacific, Africa and Latin America. In Southeast Asia, multigrade schools were established in response to international commitments to Exploratory Factor Analysis (EFA), to the Millennium Development Goals, and to the Convention on the Rights of the Child (SEAMEO Innotech, 2020).

The Philippines in its efforts to provide quality education implemented quality learning principles to achieve the second goal of universal primary education through establishing multigrade schools in rural and remote areas. This is despite that multigrade teachers are not specifically trained for the different demands of multigrade classes. In the Philippines, 12,225 pupils or comprising 36% of public elementary schools are multigrade in nature. Vietnam has 8,404 multigrade classes or 3.1% of classes in 49 provinces, Indonesia has 66% of schools in remote areas is multigrade in nature due to lack of teachers.

Management in multigrade classrooms includes variety of skills and techniques to prevent disruptive behaviors and create high-performing learning environment. Classrooms are organized, safe, and conducive to learning (Llego, 2022) create an environment where students can focus on academics. DepEd Memorandum CI-2022-00 337, series of 2022, instructed Regional Directors to conduct Multigrade Data Survey Philippine Education (MPPE) to update Bureau of Learning Delivery (BLD) on MPPE strategic plan for the next six (6) years (2023-2028) in order to harmonize their targets and implementation strategies with the Basic Education Development Plan (BEDP) 2030. It is in this context that the researcher is motivated to study multigrade schools' practices and students' academic performance to address the challenges faced by a multigrade schools.

The Framework

The study was anchored on the theories of Burrhus Frederic Skinner Operant Conditioning Theory (1938) as articulated by Mcleod *et al.* (2024). William Glasser Choice Theory (1998), and Alfie Kohn Student Directed Learning Theory (2006) as further stipulated by Emmanuel (2017). These theories help teachers define classroom management strategies and approaches best in interacting with pupils.

Skinner's Operant Conditioning Theory has been integrated both in classroom management and instructional development. Application of this theory to programmed instruction, may result to 1) Practice should occur in a question-answer format that exposes students to information, 2) The learner should respond immediately to each feedback; 3) Good performance should be paired with secondary reinforcers like praise and good grades; and 4) Teachers should try to arrange questions from difficult to easy so the response to create positive enforcement.

William Glasser's Choice Theory (1998), as articulated by Cao, (2022) Generally adheres that behavior is chosen, and one is driven by genetics to satisfy five (5) basic needs: survival, love and belonging, power, freedom, and fun. The most important need is love and belonging because connectedness with others is required as a basis in satisfying needs of students.

Alfie Kohn's Student Directed Learning Theory, (2024) explains the use of external factors as motivation, Ideal classroom emphasizes curiosity and cooperation above all, and that the students' curiosity should determine what is taught. Standards should be to the minimal and yet critical. A strict curriculum and homework are counterintuitive to student needs Kohn also argues., Kohn believes that most teachers rely

too heavily on extrinsic than intrinsic factors. He suggests teachers keep cooperation in mind because when curiosity is nurtured, rewards and punishments are not necessary.

Multigrade is a one-size classroom with diverse learners and different abilities, skills, and needs handled by one teacher. Instructional methods adjust to individual needs of the learners. Multigrade teachers also ask the full support of the parents to follow-up the learning performance of children, especially in their homework for the effective delivery of early childhood education, so their participation in many school programs is highly encouraged.

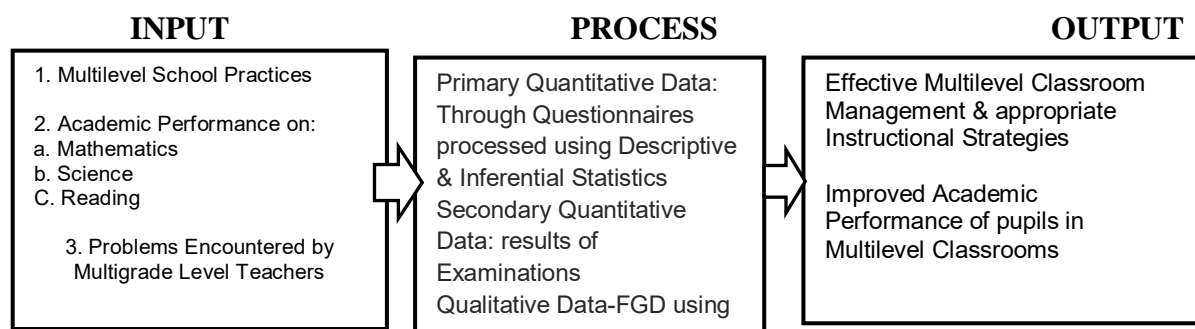


Figure 1. Paradigm of the Study.

Figure 1. Research Framework

The study revolved on classroom management strategies that may influence pupils' academic performance in the rural multigrade schools. The ability of teachers to manage a classroom and deliver lessons with two or more grade levels may depend on professional training, including the number of years of teaching experience. Pupils display different behaviors thereby teachers may choose strategies that can create a classroom environment that is a need-satisfying. Teachers need resources required for learning to choose and provide classroom activities that can actively engage students in the teaching-learning process.

The study desire to improve the students' academic performance (SAP) in a multigrade school as output: Contextualized Instruction Model through Strategies and Practices, Classroom and Learning- Classroom Environment, management strategies and Classroom Behavior Management; Resource Allocation- Infrastructure, School Equipment and School Supplies; Collaboration with Stakeholders- Parents Teachers Association, Barangay Officials and Civic Organizations; Professional Development- In-service Training and Learning Action Cell. Students' academic performance in multigrade schools is hoped to improve when the teachers handling multigrade levels have programs on professional development, attended in-service training purposely for multigrade instruction to equip them with knowledge and skills in handling classes with different grade levels, ages, and learning space.

Materials and Methods

Research Design. This study employed an embedded mixed method of research that involved collecting both quantitative and qualitative data simultaneously. A descriptive method in determining the level of multigrade schools' practices, academic performance of the students, and the challenges encountered by school heads and teachers in multigrade schools.

Respondents of the Study. The respondents of this study were forty-eight (48) multigrade teachers from 24 schools and twelve (12) key informants which consisted of three (3) multigrade teachers, three (3)

school heads; three (3) presidents of Parent and Teachers Association (PTA) of multigrade elementary schools, three (3) barangay officials from the barangays where the study was conducted.

Research Instrument and Validation. Questionnaire utilized to gather quantitative data and interview guides for qualitative data based on the prescribed Most Essential Learning Competencies of the Department of Education (DepEd-MELC) translated into the native dialect (*kinaray-a*). The instrument underwent validation processes. Four (4) teacher-experts with doctorate degree and pilot-testing using Cronbach-Alpha for content and external validation respectively.

Data Gathering Procedure. The researcher personally administered the questionnaires to the respondents for quantitative data, while interview with participants was facilitated by a third party. The filled-out questionnaires were retrieved after three (3) working days and reviewed to ensure validity of responses and saturation of data.

Data Analysis. The quantitative data were processed through Statistical Package for Social Sciences (SPSS) software specifically Frequency, Average Mean and Pearson *R* co-efficient analysis, while qualitative data obtained through the Focused Group Discussions (FGD) underwent conceptual in-dept analysis.

Ethical Considerations. Data Privacy Act of 2012 of the Republic of the Philippines was strictly observed. Every respondent and co-participant were given choices to accept or refuse to participate in the study.

Results and Discussions

1. Multigrade Schools Management Practices

Classroom teaching and learning. The classroom practices highly practiced based on the Department of Education Most Essential Learning Competencies, (DepEd MELC) performance standards. These are manifested through lessons based from District's curriculum competencies performance standards, integrated lessons to accommodate individual interests and assist hard-up learners by re-teaching and remedial classes. Quarterly assessment, performance tasks and test results are utilized as a basis for improving the teaching learning processes through contextualized the lesson that relate their teaching to students' real-life situations Llego (2022). A Grade VI teacher shared that: *Ginaplano ko ang akon leksiyon para matatapan ang mga kinalain-lain nga kinahanglanon kang mga bata. Iba kananda may mga mahina mag-aram, igsaktuhan lang, kag iba madasig sa pag-aram. Base sa andang abilidad*, (Translation: I plan my lesson to cater to the different needs of the children. Some of them are slow learners, average, and fast learners. The activity given to them should be matched based on their abilities)

Classroom Environment. These are practices in building positive relationships with students in the classroom: Keeping the classroom neat and clean; fair, consistent and respectful classroom discipline for supportive classroom environment. A Grade VI multigrade teacher shared that: *matuod gid nga panghangkat kanakon sa pagtatap kang mga estudyante nga may kinalain-lain nga mga abilidad, ginagihan kang pamilya, kag kinahanglanon sa pagtuon. Dugang pa, ang problema nga tama gid ka limitado ang amon mga resources*. (Translation: it is really a challenge for me to handle diverse learners with different levels, abilities, family backgrounds and learning needs in one c;assroom. Much more, our school has very limited resources.)

Classroom behavior management. Multigrade teachers promoted positive behavior in the classroom by

monitoring students' behavior, provided pupils with the best possible atmosphere for learning; d. Respectful classroom relationship among pupils; e. Impose discipline and cooperation. Teachers expressed difficulties in delivering disciplined multigrade instruction. However, they also experience fulfillment in teaching multigrade classes as earlier articulated by Daga, (2021).

2. Resource Allocation.

Resources on instructional Materials and School Supplies were generally adequate on less expensive facilities and instructional materials like teachers' tables, chalkboards, bond papers, paper clips among others. Many of these materials were obtained through donations and some are personally provided by teachers. (Şahin *et al.*, 2022). However, adequate in gymnasium, library, internet access and computers were practically non-existent. earlier confirmed that most multigrade schools located in far-flung countryside areas are often given a low priority due handling costs. These facilities like gymnasium, library book holdings are compounded due limited space.

Financial Incentives. Financial Incentives ranked last in the satisfactory level among multigrade level classrooms participants specifically the hazard pay for teachers. Pressing problems in most of the teachers are limited resources specifically in the form of hazardous pay in the far-lung areas and in resource-deprived school districts despite the DepEd policies that are supported by legislation. Other than the schools lack of books, computers and internet connection access to the internet posed urgent challenge among internet-aided daily lessons.

Collaboration with their immediate stakeholders. There is an open channel of consultative area for collaboration with community members. This was best displayed in developing and implementing regular monitoring, evaluation, and reporting processes. through exchange of ideas on the values and environment that are protective of children. The spirit of voluntarism in form *bridaga-eskwela* (School Brigade) to maintain cleanliness garnered high attendance in PTA Meetings where problems and other needs for teaching and learning are discussed. PTA President, expressed his views and emphasized that: *Gina encourage kag ga coordinate ako sa mga parents para mag intra sa tanan nga aktibidades. kag gabulig man ako sa iba nga mga maestra nga magpatawag ka PTA Meeting, para maistoryahan ang problema kag kakulangan ka amon eskwelahan para sa kaaraydan kang eskwelahan kag mga estudyante*". (Translation: As their PTA President, I encourage and coordinate with other parents to participate in all school activities. Volunteering every clean-up activities and help teachers to call for a PTA Meeting for the good of our school, discuss the problems and deficiency in the school for the sake of the school and students).

3. Academic performance of students on Mathematics, Science and Reading English.

There was Satisfactory ratings (80-84) grades in Reading and Mathematics and Fairly Satisfactory ratings (75-79) in Science. Only 12.5% obtained satisfactory and 87.4% obtained satisfactory ratings respectively. Grade Six level have passing grades but this was below the bar of performance envisioned by school administrators. Although students appeared academically capable of finishing the elementary level. It was noted that most of the Grade VI pupils generally have lower grades in science.

4. The challenges and problems encountered by teachers in Multigrade schools.

The most prevailing problems encountered by teachers in multigrade schools was on designing multiple lesson plans in one setup to address the different grade levels' needs and academic abilities within a single classroom. The lack of resources to create appropriate strategies for various instructional materials compounded these problems. Due to the complexities of learning processes in the multigrade classrooms teachers have to design their own lesson plan and activities based on the content of the curriculum. These

sentiments, Digalea *et al.*, (2022) are very perceivable among stakeholders in multigrade classes that are mostly in isolated rural areas Handling multigrade classroom may have to effectively manage common themes from one subject suitable for all the grades levels and critically select co-curricular activities linked to the curriculum.

5. Resource allocation.

There exist a statistically strong significant relationship between the multigrade resource allocation (RA) and students' academic performance (SAP) in Mathematics, Science, and Reading. Allocation of resources for infrastructure, school equipment, school supplies and financial incentives have affected the academic performance of students in multigrade schools.

6. Significant relationship between the Multigrade schools' practices.

Teaching and learning practices (TL) has weak relationships, they appeared not to affect Student Academic Performance (SAP) of students. However, Classroom Behavior Management (CBM) through the Pearson correlation coefficients analysis bestowed a strong relationship between Science and Reading English, unlike Mathematics, which does not affected after all. Further, collaboration with immediate stakeholders does not have statistically significant relationship with students' academic performance in Mathematics, Science, and Reading English.

Conclusions

1. Multigrade teachers design their teaching practices according to the competency standards set by Department of Education. They frequently used integrated lessons to accommodate multidisciplinary individual needs and interests of students.
2. Multigrade teachers are very resourceful and creative in augmenting the DepEd-supplied instructional materials. There is however a growing dissatisfaction among them especially the policy-backed up hazard pay for teachers.
3. Multigrade teachers are laudable enough to create a positive, supportive and respectful classroom environment by building positive relationships with students and keeping the classroom with the best possible atmosphere for contextualized learning.
4. There is an open and strong collaboration between the school and the community that paved the way for holistic growth of the learners within the ambience of community and promotes motivation and engagement in school activities.
5. Multigrade schools' practices do not have influence on academic performance of student on Mathematics, Science and Reading English. Lack of teaching and learning resources, especially laboratories, library book holdings, computers and internet connectivity contributed much to lower academic performance.

Recommendations

1. Multigrade teachers, despite dedicated professionals need to be trained to improve their skills in preparation of lessons plans and activities to deal with various learning styles, capacities and multi-age learners.
2. Legislated policies for financial hazard pay for dedicated multigrade teachers in remote areas must be revisited in its actual implementation.
3. Collaboration between multigrade schools and immediate stakeholders may be expanded to include strong emphasis on the partnerships between the school and the parents in the education of the children.

4. Infrastructures, especially Laboratories, library and technological support like computers and internet access must be prioritized and address with urgent attention.

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