

Teachers' Challenges and Practices in Handling Multigrade Classes: A Systematic Review

Lumen Cristy Booc Recla^{1*} • Joel Dalmao Potane²

^{1&2} Graduate School, Capitol University, Cagayan de Oro City, Philippines.

*Corresponding author. Email: 2079439@g.cu.edu.ph

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Abstract

In multigrade classrooms, teachers encounter a multitude of challenges as they strive to deliver effective instruction and meet the diverse learning needs of students across different grade levels. The complexities of managing such heterogeneous groups require teachers to employ innovative teaching strategies to ensure all students receive quality education. This study systematically reviewed teachers' challenges and practices in handling multigrade classes. Ten (10) out of 800 studies were chosen based on inclusion and exclusion criteria. The quality of the selected articles was assessed using the Critical Appraisal Skills Programme and arranged using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses diagram and Zotero software to identify and merge duplicate studies. The synthesised data were analysed using Clark and Braun's six-step thematic analysis and resulted in eight (8) themes, namely: (1) difficulty in managing the class, (2) lesson planning and individualised instruction, (3) time constraints and workload, (4) inadequate training and support, (5) insufficient resources and physical facilities, (6) differentiated instruction, (7) peer tutoring and collaborative activity, and (8) modular learning and technology integration. In conclusion, addressing the challenges faced by teachers in multigrade classrooms requires a comprehensive approach that includes improving infrastructure, providing specialised training, adapting the curriculum, and fostering collaboration among stakeholders.

Keywords: systematic review, multigrade classes, multigrade class, teachers' challenges, teachers' practices, teachers' strategies

1. Introduction

This study delved into the long-established practice of multigrade education, which has been crucial in addressing educational challenges, particularly in impoverished and remote areas. Multigrade classrooms, in which students of different ages learn together, offer a unique learning environment that fosters collaboration and community. However, teaching in such settings is demanding, requiring teachers to manage multiple grade levels simultaneously and adapt their strategies to diverse student needs. In this study, a systematic review is employed to identify, evaluate, and summarise the findings of all relevant individual studies within the context of multigrade classes. This study focused on examining the practices and strategies used in teaching, as well as the challenges faced by teachers in multigrade classrooms. While many studies have individually explored the challenges, difficulties, and experiences of multigrade teachers, as well as pedagogical practices and strategies employed in the classroom setting, there is a gap in discussion surrounding the strategies and practices to address the difficulties and challenges faced by

teachers. On the other hand, these studies gave greater emphasis to the strategies used in the teaching-learning process, the practices in handling multiple classes, and the obstacles confronted by teachers. However, there is a gap in addressing these challenges and utilising these strategies and practices to solve the relevant problems.

Additionally, the study aimed to fill current gaps in methodology. Previous studies were focused on qualitative and quantitative components employing various research designs. However, this study took a different approach: synthesising what has been done, generating greater meaning and insights, and recommending options and alternatives for decision- and policy-makers to further enhance the practices and strategies in multigrade teaching. The study aimed to explore the challenges faced by multigrade teachers and their teaching practices. It follows the mandate of Republic Act 9155, which emphasises quality education accessibility in the Philippines, and employs a systematic approach, including a systematic analysis of existing research. This research sought to provide valuable insights into the experiences, strengths, and challenges of multigrade teachers, informing policymakers, administrators, and educators of the unique demands of multigrade classrooms. The study also aimed to identify research gaps and inconsistencies, guide future directions, and develop targeted professional development programmes for multigrade teachers. This can ultimately contribute to the field of education by enhancing understanding of effective teaching and learning practices in multigrade settings.

2. Literature Review

Multigrade schools and multigrade instruction are neither new educational innovations nor recent experiments introduced by education experts. Both have been adopted for over a century due to geographical and economic necessity for many countries in the developing world. The multigrade approach has become imperative, particularly in poor, rural, and remote locations, as part of broader efforts to widen access to quality education for all. Within this context, this study aimed to answer the following questions: What are the challenges encountered by multi-grade teachers? What are the teaching practices/strategies of multi-grade teachers?

Thus, following the Republic Act 9155 of 2001 and pursuant to the provisions of the Constitution of the Philippines that the State shall protect and promote the rights of all citizens to quality education at all levels and take appropriate steps to make education accessible to all, it is a declared policy of the Department of Education (formerly DECS) to build schools in school-less barangays (i.e., villages, districts, or wards) where enrolment and population growth trends warrant the establishment of new schools as well as the organisation of multigrade classes to offer the complete six (6) grade levels to children in remotely located barangays (DO 96, s. 1997).

Multigrade classes offer a unique learning experience in which students of different ages learn together, thus fostering a sense of community and collaboration (Mathot, 2001). Teaching multigrade classes is tedious, challenging, and necessitates multitasking and a lot of time (Kalender & Erdem, 2021). It is a class in which two or more grade levels are combined into one class session with one teacher attempting to complete several tasks at once. In this respect, multi-tasking is considered a method for multigrade teachers to achieve several goals in a shorter amount of time during class. Attending to multiple grade levels in one class requires multiple preparations in presenting lessons, as well as in designing appropriate activities to meet different students' needs (Kaisa et al., 2015). Furthermore, in a multigrade class, the forms of combinations of classes handled by the teacher have a big impact on how the lesson is relayed to diverse learners from different grade levels, in comparison to the experience of teachers who only cater to one grade (or monograde) level since these teachers use differentiated instructions in delivering the lesson to the class (Sitabkhan, 2022). As stated in Republic Act 9155, some common forms of combination of classes are kindergarten, grades 1 and 2, grades 3 and 4, grades 5 and 6, grades 1, 2, and 3, and grades 4, 5, and 6. Some combinations are composed of two to three grade levels depending upon the number of pupils, resources, and teachers (DO 96, s. 1997). The teachers' competencies and effectiveness in teaching in these work environments have led to diverse teaching performances in these multigrade classes (Mortazavizadeh et al., 2017).

Characterised by the simultaneous presence of students from different grade levels, multigrade classrooms pose unique challenges for teachers. These classrooms require educators to adapt their teaching approaches, instructional strategies, and classroom management techniques to accommodate the students' diverse learning needs at various developmental stages (Erden, 2020). As the educational landscape continues to evolve, it is crucial to understand the experiences, perspectives, and voices of teachers who work in multigrade settings. This systematic review aimed to provide a comprehensive overview of the teachers' voice in handling such multigrade classrooms. By synthesising and analysing existing research, we seek to gain insight into the various factors that influence teachers' practices, their perceived strengths and challenges, as well as the strategies they employ to promote effective learning outcomes in this complex educational environment.

To conduct this study, a systematic approach that involves the identification, evaluation, and synthesis of relevant primary research studies was employed. By utilising a systematic review methodology, the work will be beyond mere aggregation of findings and instead, generate new interpretations and understandings that emerge from the collective body of literature on this topic. The significance of this study lies in its potential to inform educational policymakers, school administrators, and teachers themselves of the unique demands and opportunities present in multigrade classrooms. By amplifying the teachers' voices and exploring their perspectives, we can gain valuable insight into the practices that support successful teaching and learning in these settings. Moreover, this study would help identify gaps and inconsistencies in the current literature, thereby guiding future research directions and informing the development of targeted professional development programmes for teachers working in multigrade classrooms. Ultimately, the findings of this study would contribute to the growing body of knowledge on multigrade education, shed light on effective pedagogical practices, and facilitate evidence-based decision-making in educational policy and practice.

This study aims to explore the teachers' voice in handling multigrade classrooms by synthesising existing research. Through this comprehensive analysis, valuable insight into the experiences, challenges, strategies, and perceptions of teachers in multigrade settings can be uncovered. These can contribute to the field of education by promoting a deeper understanding of effective teaching and learning practices in the specific context of multigrade education.

3. Methodology

A systematic review was conducted to synthesise data concerning the teachers' voice in handling multigrade classes. The design followed Sandelowski and Barroso's approach (2007), which was utilised in the study of Cana et al. (2023) on the experiences of persons with disabilities for disaster preparedness. This design involved three steps: (1) selecting a published paper with citations to include, (2) quality review and data extraction, and (3) summarising and synthesising.

3.1. Search Strategy

A list of papers published with citations concerning teachers' voices or perceptions in handling multigrade classes were generated through the Publish or Perish software via Scopus, Google Scholar, ERIC, and ScienceDirect. All studies published with citations between 2017 and 2023 that were related to this study were reviewed. Publish or Perish employed terms such as "multigrade class", "challenges in multigrade", "teaching strategies in multigrade", and "teaching practices in multigrade". After obtaining the data from Publish or Perish, the PRISMA2020 tool was utilised to present the flow diagram of the screening process to avoid duplication. The Zotero software was used to identify and merge the same studies. Screening the remaining research involved utilising the CASP checklist or the Critical Appraisal Skills Programme.

3.2. Selection/Inclusion Criteria

The studies included in this analysis were chosen and checked based on the following criteria: articles and journals, research studies that must be published, written in English, have citations, published between 2017 and 2023, not focus on special education, involve teachers as respondents, undergo intensive

screening, answer the statement of the problem, and fit the CASP checklist or the Critical Appraisal Skills Programme.

3.3. Data Analysis

Cana et al. (2023) used a thematic analysis to compare and contrast studies in accordance with the protocol developed by Clark and Braun (2017), which was also used in analysing and examining data gathered concerning teachers' voices in handling multigrade classes. This was revised using the six-step method of thematic analysis, which comprised: (1) learning from the studies or research articles that highlighted the emerging themes, (2) delivering codes by social event information normal to each code, (3) collecting pertinent data for each theme in order to identify themes, (4) constructing a thematic map for reviewing themes, (5) categorising and explaining themes in a manner that clearly identifies the emerging themes, and finally, (6) fostering the report by discussing the review's examination and suggestions.

4. Findings

The final collection of ten (10) papers identified involved research studies conducted in Asia (6), Africa (3), and Europe (1).

4.1. Search Results

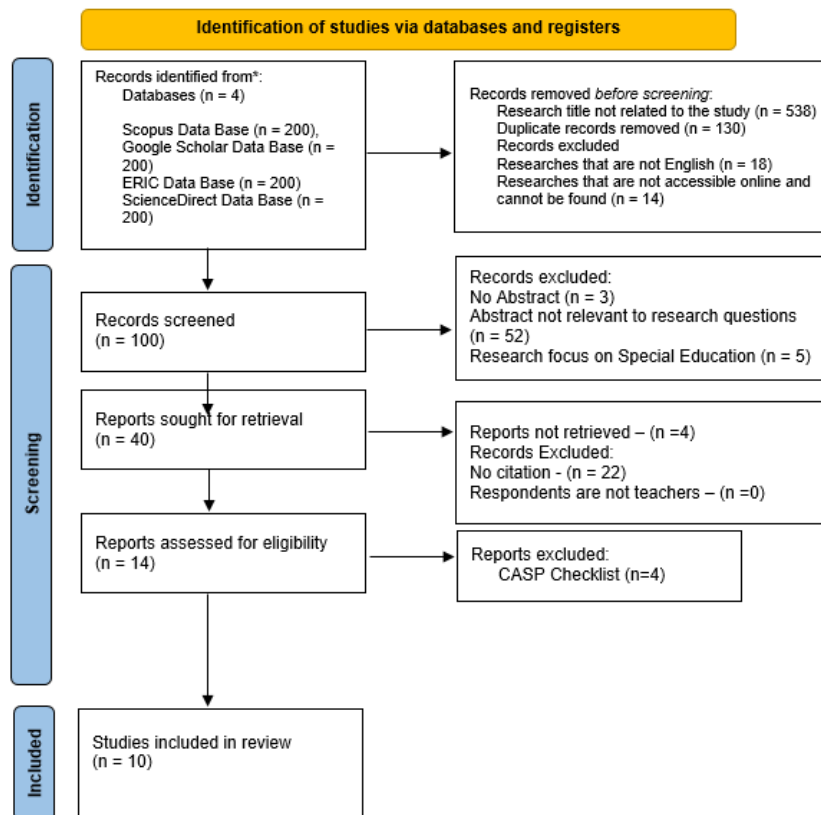


Figure 1. Results of the search conducted in selecting papers for inclusion in the systematic review.

Using the PRISMA Flow tool, three (3) stages were involved in selecting research papers, which are: (1) identification, (2) screening, and (3) inclusion.

At the identification stage, in total eight hundred (800) studies were selected, specifically, two hundred (200) studies in Scopus, two hundred (200) studies in Google Scholar, two hundred (200) studies in ERIC, and two hundred (200) studies in ScienceDirect, as part of the initial screening process using Publish or Perish. The following were eliminated: five hundred thirty-eight (538) because their titles were not related to the study, one hundred thirty (130) were identified as duplications by Zotero, eighteen (18) because they were not written in English, and fourteen (14) due to unavailability of sources, leaving a total of one hundred (100). At the second sub-stage, three (3) papers were removed because they had no abstract, as well as fifty-two (52) studies because their abstracts were not relevant to the research questions, and five (5) because the studies focused on special education, which was not part of the researcher's inclusion criteria. This sub-stage yielded forty (40) studies in total. Four (4) studies were removed due to the unavailability of full papers, and twenty-two (22) did not have citations, leaving a remainder of fourteen (14) studies. At the last sub-stage, four (4) studies were omitted because they did not match the criteria using the CASP checklist, resulting in a final tally of ten (10) studies.

The concluding set of 10 studies comprised seven (7) journal articles, two (2) conference papers, and one (1) thesis. The research studies were conducted in Asia (6), Africa (3), and Europe (1). Data were collected and analysed using the thematic analysis.

The ten (10) studies produced eight (8) themes within two (2) categories, i.e., challenges encountered by multigrade teachers, and teaching practices/strategies used by multigrade teachers.

4.2. Discussion

4.2.1. Challenges Encountered by Multigrade Teachers

i. Theme 1: Difficulty in Managing the Class

Managing diverse learners in one classroom at the same time is a challenge unique to multigrade teachers, not experienced by teachers who handle regular monograde classes. Managing the teaching-learning process in multigrade classrooms requires space management, time management, classroom control, and student engagement during group activities (Naparani et al., 2021; Mpahla et al., 2021). More so, teachers often struggle to provide individualised attention, including the need to cater to students' different learning abilities specific to their learning needs, all while ensuring a positive and inclusive classroom environment that requires them to put in extra effort due to the diverse needs and abilities of students across multiple grade levels (Mnyandu, 2020; Bongala et al., 2020; Engin, 2018; Mortazaviz et al., 2017). Additionally, according to Okamoto et al. (2020), some multigrade classes are large, with teachers handling more than forty-five (45) learners at one time. This would entail some difficulty in managing diverse learners. Moreover, dealing with different grade levels in one classroom at the same time, involving one schedule managed by one facilitating teacher is certainly tough work.

Indeed, managing a multigrade class is very challenging. The teacher has to tailor-fit classroom engagement to effectively address the diverse needs and abilities of students across multiple grade levels. This is supported in the study conducted by Kalender and Erdem (2021) on the challenges faced by teachers in a multigrade classroom, in which such teachers have a responsibility beyond the traditional demands of a single-grade classroom. They have to skilfully navigate the diverse needs, abilities, and developmental stages of students across multiple grade levels, ensuring that each student receives appropriate attention and support. As a result, many teachers consider this to be a tiring and demanding responsibility, and expressed that it entailed unfavourable experiences leading to a decline in their motivation.

ii. Theme 2: Lesson Planning and Individualised Instruction

Lesson planning is one of the first things to do before delivering lessons to learners. However, lesson planning in multigrade classes requires more time because teachers must create multiple lesson plans in one setup to address the different grade levels' needs and abilities, as well as prepare various instructional materials to cater to the students' diverse learning styles (Borja et al., 2020; Okamoto et al., 2020). Unlike

monograde lesson plans, teachers in a multigrade setting often face difficulty in planning because there are no ready-made lesson plans available for multigrade teaching. Although lesson examples are often available, they neither sufficiently cover all the competencies, nor do they fulfil curricular requirements as they have to follow guidelines designed for monograde classes (Mnyandu, 2020; Naparan et al., 2021). More so, the individualisation of instruction was strenuous (Engin, 2018; Mortazaviz et al., 2017). Lesson planning and individualisation have become a problem in preparing and conducting assessment in multigrade classrooms due to the need for levelled and individualised assessment tools (Naparan et al., 2021; Mortazaviz et al., 2017).

Additionally, teachers must put in extra effort in crafting lesson plans, as they have to prepare several at the same time depending on the number of grade levels that must be handled. This was substantiated by Shareefa's (2020) research on the implementation of differentiated instruction in multigrade classes, which highlighted positive academic outcomes for students. However, Shareefa's study also underscored the need for teachers to be highly competitive and invest additional time in handling increased workloads, including conducting assessment for students. Thus, teachers need to engage in thorough curricular analysis and adaptation to provide activities that are aligned to learning standards that apply in a monograde class.

iii. Theme 3: Time Constraints and Workload

When teachers lack time to prepare their lessons, they may fail to complete their annual submissions of teaching plans (Naparan et al., 2021; Mnyandu, 2020). Further, they may encounter difficulties in allocating time effectively to address each competency due to the need to cover multiple grade-level curricula in a single class (Engin, 2018; Borja et al., 2020). Multigrade teachers' tasks do not only involve teaching in the classroom; they must also submit reports, perform administrative duties, manage paperwork and other responsibilities. Thus, submitting reports and other documents becomes an additional burden to multigrade teachers due to their lack of Internet access, and limited technical assistance and time. This results in a heavy workload, including teaching multiple grades and subjects across different phases simultaneously (Msimanga, 2020; Engin, 2018; Naparan et al., 2021).

Undoubtedly, teachers grapple with the challenges of instructing students, devising lesson plans, and submitting documents. This was substantiated by Ntombela's (2021) study on managing difficulties associated with multigrade classes, which revealed how the teachers' workload could adversely affect curriculum delivery. In the study, it was observed that teachers lacked support in terms of providing a curriculum tailored for multigrade classes, leading to a need to adapt based on the various grade levels they handle. Moreover, teachers shoulder not only the responsibility of teaching, but also a myriad of other roles, which add to their burden. Having to perform these numerous tasks, teachers find it challenging to fulfil all their responsibilities simultaneously. The preparation of lessons, creation of activities, and completion of paperwork demand a substantial amount of time, leaving teachers struggling to manage their tasks effectively.

iv. Theme 4: Inadequate Training and Support

Training is crucial for teachers to execute lessons in an efficient and effective manner, as well as important to help teachers gain knowledge and skills needed to meet relevant standards and learner needs. However, multigrade teachers are often not equipped with the skills and knowledge in handling students in different grade levels simultaneously in one class (Msimanga, 2020). There is a lack of specific teacher training or professional development opportunities specially tailored to the unique needs and challenges of multigrade classes. Thus, teachers are not prepared to teach and assess student learning in multiple grade levels in one session (Bongala et al., 2020; Borja et al., 2020; Engin, 2018; Mpahla et al., 2021; Naparan et al., 2021). Multigrade teachers also struggle with getting the support of parents in monitoring their children's learning performance at home, as some parents lack the necessary knowledge or time to monitor their children's school tasks (Naparan et al., 2021). As well, the multigrade system also suffers from lack of support from district officials of the Department of Education (Bongala et al., 2020; Mpahla et al., 2021). Moreover, multigrade teachers have expressed their discomfort over being compared to

monograde teachers. The same expectations for both multigrade and monograde teaching disregard the unique challenges faced in multigrade classrooms (Msimanga, 2020).

Handling multigrade classes is vastly different to monograde classes. Teacher training in handling multigrade classes prior to conducting class is essential to mitigate stress. This has been confirmed in the study conducted by Cahapay and Rotas (2020) on workload stress of multigrade teachers. Their study concluded that multigrade teachers often exhibit a moderate level of workload stress if they are trained, given seminars related to handling behavioural problems, can select appropriate teaching methods, learning activities, and instructional materials in teaching multigrade classes. It is unreasonable to expect a teacher with expertise in managing a monograde class to perform similarly in a multigrade class. The same is true for teachers with prior experience managing a single grade level; even teachers with no prior experience find it challenging. Teachers feel pressured because they lack confidence and are unprepared with what to do.

v. Theme 5: Insufficient Resources and Physical Facilities

Multigrade teachers often have to prepare their own instructional materials due to a lack of resources and the absence of ready-made lesson plans and contextualised resource materials, which makes teaching more difficult and challenging (Naparar et al., 2021). Limitations such as poor Internet access, teaching post and teaching-learning resources and materials, curricular materials, physical facilities, classroom space, and equipment hinder the effectiveness of video lessons and quality learning, and the teachers generally struggle to make the instructional materials interesting and relevant for all learners (Naparar et al., 2021; Okamoto et al., 2020; Mortazaviz et al., 2017; Borja et al., 2020; Mnyandu, 2020; Bongala et al., 2020; Chan et al., 2021). Additionally, some teachers have to reproduce self-study materials for students using their own money since the budget allotted to multigrade class is often insufficient. Also, the curricula and textbooks used in multigrade classrooms are adopted directly from those designed for monograde classrooms. This requires teachers to craft and modify lessons and assessment to suit multigrade learners (Msimanga, 2020; Borja et al., 2020). In addition, there is inequitable allocation of human resources for multigrade classes. Subject advisors or learning facilitators who are expected to support multigrade teachers often lack understanding and skills in multigrade education (Msimanga, 2020). Furthermore, according to Okamoto et al. (2020) multigrade teachers have to manage with a single green board for two (or several) grade levels due to limited physical set-up of multigrade classrooms.

Clearly, teachers not only struggle with crafting lessons and activities, but also with the materials needed to aid the teaching-learning process. This aligns with Daga's (2021) study, which emphasised that the lack of readily available lesson plans and context-specific resource materials significantly heightens the challenges and difficulties faced by multigrade teachers. Furthermore, Daga highlighted the necessity to tailor instructional materials to address the diverse learning needs of all students. However, a scarcity of such resources exacerbates the situation. This implies that a lack of resources compounds the challenges faced by the teachers. No matter how ideal prepared activities are, when there is nothing to represent, student learning may not be realised. Moreover, Kalender and Erdem (2021) found in their study that physical facilities provided by schools for multigrade classes are often inadequate in terms of infrastructure, physical amenities, and technological equipment. Similar to what is required in monograde classes, it is noteworthy that physical facilities are equally crucial for students to attain an environment deemed conducive for learning.

4.2.2. Teaching Practices/Strategies

i. Theme 6: Differentiated Instruction

Multigrade teachers employ differentiated teaching strategies to address the diverse learning requirements, needs, abilities, and skills of students at different grade levels (Mnyandu, 2020; Mpahla et al., 2021; Msimanga, 2020). Differentiated activities based on learners' different learning styles are used to cater to the unique setup of their class (Okamoto et al., 2020). Individualised instruction has also been utilised to organise activities according to the capabilities and skills of the pupils (Mortazaviz et al., 2017). In addition, the "jump-jump" strategy (i.e., teaching students of one grade while other students work

independently) has also been identified as part of the rubrics in differentiated teaching (Bongala et al., 2020).

Hence, differentiated and individualised strategies are commonly employed in multigrade classes. This approach provides a unique way to cater to the students' individual needs and abilities while also facilitating simultaneous activities. Given the students' varying academic levels and learning preferences, this allows them to engage with the content at their own pace and in a manner that aligns with their own learning styles. The efficacy of this approach has been supported by Shareefa's (2020) study on differentiated instruction in multigrade classes, which indicates benefits such as academic enhancement and positive psychological changes. However, challenges in implementing this teaching-learning strategy have also been identified, including lack of competency in delivering the strategy and time constraints due to the teachers' heavy workload. Perhaps, as noted by Watts-Taffe et al. (2012) and cited in Naparan and Alinsug (2021), differentiated instruction is well-suited for a multigrade setting. This implies that its successful implementation requires a competent teacher with ample time for effective preparation.

ii. Theme 7: Peer Tutoring and Collaborative Activity

Group work and peer tutoring are an empirical strategy in the teaching-learning process in a multigrade classroom. Given that students are placed in one classroom involving multiple grade levels in one session, simultaneous group activities are often conducted to meet diverse needs, including such activities as group discussion, brainstorming, experimental methods, project-based learning, roleplay, and problem-solving (Mnyandu, 2020; Mortazaviz et al., 2017). Specifically, peer tutoring takes place during some of the group activities. This can provide peer support, while at the same time train students to become co-opting learner leaders (Engin, 2018; Mnyandu, 2020). One-on-one and group remedial reading sessions have also been found practical (Okamoto et al., 2020).

Alternatively, peer tutoring and group work can also address the diverse needs of students while easing the tasks of teachers in such a way that teachers act only as facilitators who monitor the students' engagement with one another. This was observed in the study of Ruoyao (2023) on peer tutoring, which showed peer instruction provides opportunities for tutees. This is also supported by Naparan and Alinsug (2021) who concluded that collaborative activities provide better opportunities for learning. Basically, this approached empowers students to take an active role in their own learning and creates an inclusive classroom environment in which students support and learn from each other.

iii. Theme 8: Modular Learning and Technology Integration

In provinces where teachers face arduous journeys to reach schools in remote locations and mountainous terrain, remote teaching has been adopted. This involves teachers utilising various resources such as video lessons, textbooks, and supplementary materials to improve student understanding of lessons (Chan et al., 2021; Borja et al., 2020). With the advent of new technology, multigrade classrooms can adapt the modular learning mode integrated with technology, involving in their teaching practices such approaches as video lessons. This means that multigrade learners with suitable smartphones can access these materials, as well as undergo activities and assessments given through worksheets (Borja et al., 2020; Naparan et al., 2021).

Moreover, even before the Covid-19 pandemic, modular learning and technology integration were already in practice in multigrade classes, especially in hinterlands where teachers had to cross rivers and climb mountains in order to reach their schools. This was described in the study by Novianti et al. (2022) on the implementation of the multigrade policy in Probolinggo Regency, a province in East Java, Indonesia, which concluded that the schools there were difficult to access geographically, leading to teacher absences. Furthermore, long distances, challenging locations, and adverse weather conditions were identified as factors contributing to the challenges faced by multigrade teachers. Consequently, lessons are planned on a weekly basis, and in certain circumstances, such as adverse weather or unsafe travel conditions, teachers struggle to reach their schools physically. During such situations, students are supplied with modules or educational materials, allowing them to independently complete their studies at home. Therefore, the adoption of modular learning in multigrade classes serves as evidence of the

determination and commitment exhibited by both educators and students to guarantee access to high-quality education despite geographical challenges. On the other hand, technology integration, such as video lessons, can be beneficial for facilitating independent learning in multigrade classes. Students have the option to replay videos if they are confused or when they struggle to grasp certain concepts. This notion aligns with the findings of the study conducted by Insorio et al. (2023) on the use of video lessons as supplementary learning materials for struggling students in online distance learning. The study concluded that teacher-made video lessons contributed to an improvement in students' academic performance in mathematics. However, the students expressed a preference for more illustrative examples and explanations, along with the use of the local language to enhance their understanding of the content.

5. Conclusion

In multigrade classrooms, teachers face numerous challenges due to limited infrastructure, resources, and training, as well as the absence of tailored curricula and instructional materials. The lack of proper facilities and teaching materials hampers lesson delivery and student engagement. Poor Internet access further limits the effectiveness of technology-based teaching methods. Teachers also lack access to specialised training programmes and face heavy workloads, including the preparation of multiple lesson plans and individualised instruction. The absence of ready-made lesson plans and assessment tools makes planning and individualisation difficult. Lack of support from parents and district officials further adds to the workload and affects student monitoring. To address these issues, governments and education authorities could improve physical facilities, provide necessary resources and equipment, ensure reliable Internet access, and allocate sufficient classroom space. Training programmes specifically designed for multigrade teachers could be developed, focusing on the effective management of diverse learners. Support systems such as mentorship programmes and regular monitoring can provide guidance. The curriculum could be adapted and instructional materials contextualised specifically for multigrade classrooms. Ready-made lesson plans and assessment tools specific to multigrade teaching could also be provided. Collaboration among multigrade teachers, parents, and education authorities is crucial, with parents actively engaged and supported, and education authorities providing necessary resources and guidance. Sharing best practices and establishing networks for multigrade teachers to collaborate and learn from one another is also important. Finally, in the Philippines, the government and education authorities may need to revisit the curriculum to better align with the learning competencies and standards required for multigrade classes.

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Annex A

Table 1: A summary and characteristics of the final 10 studies used in the systematic review.

No.	Author	Year	Setting	Design	Publication Type	Challenges encountered by multigrade teachers	Teaching practices/strategies used by multigrade teachers
1.	Mnyandu, N.	2020	South Africa	Qualitative	Thesis	<ul style="list-style-type: none"> ● Lack of consistency can make it difficult for teachers to establish effective teaching strategies. ● Managing a multigrade classroom, including the need to cater to different learning needs and abilities of students in different grades. ● Presenting content as they have to follow guidelines designed for mono-grade classes. ● Struggling to fulfil curriculum requirements. ● Teachers face time constraints, which can result in the non-completion of their annual teaching plans. ● Limited teaching posts and insufficient teaching and learning resources. 	<ul style="list-style-type: none"> ● Whole class teaching as a strategy. ● Group work and differentiated instruction. ● Peer tutoring. ● Co-opting learner leaders. ● Formative and summative assessments.

2.	Bongala, J. V., Bobis, V. B., Castillo, J. P. R., & Marasigan, A.C.	2020	Philippines	Qualitative	Journal Article	<ul style="list-style-type: none"> ● Difficulty in determining the appropriate language or medium of instruction when teaching students at different grade levels. ● Problems with lesson planning. The need to plan lessons that are suitable for students at different grade levels. ● The struggle to provide individualised attention and address the specific learning needs of each student. ● Lack of appropriate learning resources and materials that are specifically designed for multigrade classrooms. ● Lack of specific training or preparation for teaching in multigrade settings. ● Lack of support for the multigrade system. 	<ul style="list-style-type: none"> ● Teaching one topic to all grades and at varying levels of difficulty using differentiated activities. ● “Jump-jump” strategy/teach one grade while others work independently. ● Peer teaching or tutoring.
3.	Borja, J. M. D., Sigua, E. M., & Marasigan, A. C.	2020	Philippines	Qualitative	Journal Article	<ul style="list-style-type: none"> ● Preparing lesson plans that cater to the different grade levels ● Preparing a variety of instructional materials to address the different needs and abilities of students at various grade levels. ● Teachers often need to reproduce self-study materials for their students, which can be costly. ● Curriculum materials that are not suitable for multigrade classes. ● Difficulty in allocating sufficient time for each competency due to the need to cover multiple grade levels in a single class. ● Limited resources and materials. ● Difficulty in traveling to remote areas due to lack of transportation options. ● Lack of support or professional development opportunities specifically tailored to their unique needs and challenges. 	<ul style="list-style-type: none"> ● Utilized tasks involving traditional tools like paper and pen, such as worksheets.

4.	Engin, G.	2018	Turkey, Rotterdam, Netherlands	Qualitative	Journal Article	<ul style="list-style-type: none"> ● Multigrade teaching requires teachers to put in extra effort due to the diverse needs and abilities of students across multiple grade levels. ● Teachers face high expectations from students, parents, and education authorities to meet the learning outcomes for each grade level. ● Managing time effectively becomes challenging when teachers have to cover multiple grade-level curricula and provide individualised instruction. ● Unsupported and lacking assistance in multigrade classes. ● Additional responsibilities beyond teaching, such as administrative tasks, paperwork, and managing classroom logistics. ● Lack of specific training and preparation for teaching in multigrade classes. ● Inadequate physical facilities and resources, such as limited classroom space, lack of materials, or equipment. ● Diverse language backgrounds resulting in language barriers. 	<ul style="list-style-type: none"> ● Dividing the lesson into time periods. ● Joining the groups while teaching. ● Enrichening the daily activities. ● Providing peer support.
5.	Mortazavi zadeh, S. H., Nili, M. R., Isfahani, A. R. N., & Hassani, M.	2017	Iran	Qualitative	Journal Article	<ul style="list-style-type: none"> ● Differentiation of the instruction. ● Limited learning materials and resources. ● Grouping students appropriately for activities varying grade levels and abilities ● Balancing instructional time, activities, and assessments. ● Providing individualised attention and support to students across multiple grade levels. ● Managing diverse student needs, behaviour expectations, and instructional materials, all while ensuring a positive and inclusive classroom climate. 	<ul style="list-style-type: none"> ● Teaching methods include peer tutoring, individualised instruction, questions and answers, group discussion, brainstorming, experimental methods, project-based learning, roleplay, and problem-solving.

6.	Mpahla, N. E., & Makena, B.	2021	South Africa	Qualitative	Conference paper	<ul style="list-style-type: none"> ● Lack of any professional development programmes specifically designed for multigrade teaching. ● Lack of assistance or support from district officials or the Department of Education. ● Classroom control and time management. 	<ul style="list-style-type: none"> ● Preparation of a lesson plan for two and three different grades in the same classroom. ● Differentiation of instruction as a group according to each level.
7.	Msimanga, M. R.	2020	South Africa	Qualitative	Journal Article	<ul style="list-style-type: none"> ● A heavy workload due to teaching multiple grades and subjects across different phases simultaneously. ● Teachers often lack training and support specific to multigrade teaching. ● Unfair allocation of human resources in multigrade classrooms. ● Subject advisors or learning facilitators who are supposed to support teachers in multigrade practices often lack understanding and skills in multigrade education. ● The curriculum and textbooks used in multigrade classrooms are designed for monograde classrooms. ● Comparing multigrade teachers to monograde teachers and having the same expectations disregards the unique challenges faced by multigrade classrooms. 	<ul style="list-style-type: none"> ● Employing differentiated teaching strategies to address the diverse learning requirements of students at different grade levels.

8.	Okamoto, Y., & Potane, J.	2020	Philippines	Qualitative	Conference paper	<ul style="list-style-type: none"> • Limited resources in the physical set-up of multigrade classrooms, e.g., teachers have to manage with a single green board shared by two grade levels. • Multigrade classrooms often have large class sizes, with teachers handling more than 45 learners, indicating difficulty in managing diverse learners. • Lacking essential equipment such as movable boards, flipboards, magnetic boards, and presentation boards. • Preparing lesson plans and instructional materials, particularly when handling multiple grade levels. • Requiring more time to analyse the progress of individual learners due to the higher number of students in multigrade classrooms. 	<ul style="list-style-type: none"> • Peer tutoring. • School-based learning action cell. • Differentiated activities based on the different learning styles of the learners one-on-one and group remedial reading sessions conduct of action research to solve classroom-based problems.
9.	Chan, J. R., Marasigan, A. C., & Santander, N. T.	2021	Philippines	Qualitative	Journal Article	<ul style="list-style-type: none"> • Reaching their schools due to the mountainous terrain and challenging routes. • Limited Internet access hindering the effectiveness of learning materials such as video lessons, etc. • Discrepancy in the module content and difficulty in distributing modules due to road inaccessibility. • Inadequate learning materials. 	<ul style="list-style-type: none"> • Introducing a modular learning mode. • Maximising the use of modules, online video lessons, textbooks and other reading materials to supplement the understanding of lessons.
10.	Naparan, G. B., & Alinsug, V. G.	2021	Philippines	Qualitative	Journal Article	<ul style="list-style-type: none"> • Managing a classroom with students of different grade levels and abilities. • Maintaining discipline, engaging all students, and meeting individual needs. 	<ul style="list-style-type: none"> • Collaborative learning. • Differentiative instruction. • Independent learning. • Technology integration.