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MULTIGRADE TEACHING PRACTICES IN PRIMARY SCHOOLS: CHALLENGES AND OPPORTUNITIES IN RESOURCE-CONSTRAINED EDUCATIONAL CONTEXTS

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Abstract
The aim of this study is to explore the phenomenon of multigrade schooling in relation to the context of rural primary schools in Union Council (UC) Chotyarioon, District Sanghar in terms of educational practices of single teachers tasked to teach multiple grades of students from nurseries to Grade 5 in the same classroom. This research examines the pedagogy, management, and emotional demands of instructors in resource poor environments, as well as the new opportunities for peer learning and inter-grade collaboration. A mixed methods design was used in which an online structured questionnaire, semi-structured interviews, and classroom observations were used. The data were gathered from 40 teachers from 30 government primary schools. Results of the quantitative analysis showed that the percentages of teachers who do not have specific training in multigrade teaching were 78%. Teachers reported that they spend an average of 25-30 school days per year on government responsibilities that are not academic in nature. Qualitative evidence also points to structural issues, such as workload stress and a mismatch between policies, like SELECT time table, and situation in class. Notwithstanding these difficulties and obstacles, the study demonstrates informal, but systematic, peer learning strategies that are facilitated in multigrade classrooms, and indicates that there is much to be explored pedagogically. The results reveal the need of targeted teachers training, workload rationalization, and making policy changes according to context in multigrade education system in rural areas of Sindh to enhance the quality of instruction in these areas.

Keywords: Multigrade Teaching, Rural Primary Education, Teacher Challenges, Peer Learning, SELECT Project, Resource-Constrained Contexts.

Introduction
Multigrade in which one teacher delivers education to learners at two or more grade levels is one of the most common and under-resourced courses of action in many developing education systems (UNESCO, 2023; World Bank, 2022). Rural settings in Pakistan, and especially those in rural Sindh, are not defying this by making pedagogical decisions, but as ASER Pakistan (2022) and UNESCO (2023) reported, this is a structural necessity that results from serious teacher shortages, poor physical schooling facilities, and geographically dispersed populations (Ahmed, & Imran, 2024; Ahmed, 2023). In the Union Council (UC) Chotyarioon of the District Sanghar, most Government Primary Schools impart education to students from Nursery to 5th class in a single classroom and single teacher system. Although enrolment in primary education has improved, the learning outcomes in rural areas of Sindh continue to be a concern. The results of the Annual Status of Education Report (ASER 2022) and ASER Pakistan (2023) show that around 60% rural students of class 5 in Sindh are not able to read a simple sentence in Sindhi and over 65% are not able to do basic two-digit arithmetic (Alam, et al., 2026). ASER Pakistan 2022 and World Bank (2021) identified these learning gaps as the systemic constraints running through the education system, of which untrained multigrade teaching is a very important one impacting on classroom effectiveness and the progression of the students' learning. Multigrade education has also been extensively documented internationally, in

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various contexts of low resource and rural schools, especially in the developing world (UNESCO, 2023; UNESCO GEM Report, 2024). Findings of global education monitoring reports indicate that, with support for teachers via training, curriculum design and appropriate teaching materials, multigrade classrooms can contribute to better learning outcomes and support peer assisted learning (PTL) opportunities (UNESCO, 2023; World Bank, 2022). But, without these enabling factors, multigrade settings often come with higher workloads for teachers, lower teaching efficiency, and limited engagement for students (UNESCO, 2024).

However, recent policy initiatives in Sindh, such as the World Bank-supported SELECT (Student and Teacher Learning Excellence) Project have implemented structured instructional schemes, in which fixed time blocks (45 minutes per session) in every subject are adopted for each grade (World Bank, 2020; World Bank, 2022). These reforms emphasize uniformity in delivery and learning results, but these are operation challenges in single-teacher multigrade classes. In such contexts, teachers are expected to handle multiple grade-level learning expectations within a highly constrained schedule, possibly not always possible in resource-poor, rural schools. Though multi-grade system is a common phenomenon in rural areas of Sindh, the empirical evidence at Union Council level is scarce in the context of policy practice gap in implementation, dynamics of teacher workload, challenges faced by teachers, and the system of interaction in the classroom (Sultana, Ahmed, & Imran, 2024). The present study, aimed at addressing the aforesaid gap empirically explores the problems and potentials of multigrade teaching in the district of Sanghar, in the village of UC Chotyarioon. The study use structured questionnaires, semi-structured interviews and classroom observations to gather primary data and provide teacher support interventions, teacher continuous improvement strategies and policy changes for primary education systems in rural settings.

Problem Statement

The educational structure of primary education system of UC Chotyarioon, District Sanghar is a long-standing issue of multigrade teaching in rural Pakistan. In this context, a teacher in many government primary schools teaches more than one grade level and sometimes students of different grade levels are in the same classroom at the same time. While this is a reality in low-resource settings, there is an absence of appropriate teacher preparation, curricula and in-school support systems to ensure the successful implementation of multigrade classrooms (World Bank 2022; UNESCO, 2023). It is a problem that can be broken down into multiple dimensions. Second, most teachers are not trained for single-grade work, so teaching across grade levels presents limits in pedagogical complexity, teaching time and the time needed for differentiated instruction (Azhar & Imran, 2024). Third, teachers lack the skill to teach cross-grade instruction, which creates additional considerations for pedagogical complexity and management of teaching time and time spent differentiated instruction. Second, non-academic duties are added to teachers' daily routine by the government like Election duty, Census activity, Polio campaign, administrative survey etc. which majorly affect the continuity of classes and ultimately leads to a reduction in teaching time (ASER Pakistan, 2023). Thirdly, the introduction of policies like the SELECT Project that prescribe specific 45-minute blocks of instruction per grade level sets up challenges for the implementation of such policies in multigrade classrooms that require simultaneously delivering instruction across multiple grade levels (World Bank, 2022; Government of Sindh, 2021).

These constraints create a situation where there is continued poor performance in learning outcomes in rural areas of Sindh. Recent findings show that substantial amounts of students at primary school are not acquiring foundational literacy and numeracy (FLAN) skills, thus signifying inadequacies of teaching and pedagogic systems with respect to instruction and classroom resources (ASER Pakistan, 2023 and 2024; UNESCO, 2024). The results above also indicate that in the absence of adequate support, multigrade classes make a particular

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contribution to the marginalization of achievement and care, especially in rural educational systems. Thus, despite the fact that multigrade education is commonly used in rural areas of the province of Sindh, empirical evidence at the union council level is scanty, especially on the workload of teachers, the training of teachers and the problems in implementing the multigrade system. This de-centralized evidence base makes informed, context sensitive policy approaches more limited. Thus, the present study aims to provide empirical evidence and inputs for teacher training, instructional improvement and policy formulation in the rural primary education of UC Chotyarioon District Sanghar.

Main Objective

To examine the challenges and opportunities of multigrade teaching practices in primary schools of UC Chotyarioon, Sanghar, and to propose strategies for improving teaching effectiveness in resource-constrained contexts.

Specific Objectives

1. To assess the instructional and classroom management challenges faced by single teachers in multigrade primary schools.
2. To examine the impact of government-assigned non-academic duties on teachers' instructional time and classroom management.
3. To explore student interaction, peer learning, and cooperative learning practices in multigrade classrooms.
4. To investigate differences in teachers perceived challenges based on demographic factor such as teaching experience.

Hypotheses

H_0: There is no significant difference in the challenges faced by teachers in multigrade primary schools based on teaching experience.

H_1: There is a significant difference in the challenges faced by teachers in multigrade primary schools based and teaching experience.

Significance of the study

This study carries significant implications across multiple levels of the educational system in Pakistan, from the individual classroom to national policy frameworks:

Provides empirical evidence from Southern Sindh to inform teacher deployment policies, multigrade-specific training program design, and realistic school timetable reforms that reflect classroom realities (Imran, Zaidi, & Rehan, 2024). The study helpful for teachers to offer validated strategies for managing multigrade classrooms, utilizing peer learning, and advocating for institutional support based on documented challenges. The study Identifies root causes of poor literacy outcomes in multigrade settings and proposes practical interventions to improve foundational learning for rural primary students. Highlights structural limitations of the mandated timetable in multigrade contexts and provides data-driven arguments for context-sensitive policy adaptation.Fills a critical literature gap on multigrade education in Southern Sindh, contributing to national and international scholarship on resource-constrained primary education.

Literature Review

Introduction

Multigrade has become a visible reality in rural education systems in many developing countries especially where there is a shortage of teachers, low enrolment densities, and physical and social infrastructure limitations make single-grade instruction impractical (Mohammad, et al., 2024). In contemporary research, multi-grade education is seen as a structural feature of rural school systems, demanding a specific pedagogical, curricular, and policy response, rather than as a transitional solution (Rehan, et al., 2024). Research today is beginning to problematize the notion of multi-grade education as transitional, but as an actual state of school systems in

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the rural areas, which requires specific pedagogical, curricular, and policy responses (UNESCO, 2023; World Bank, 2022). In this section, the authors draw on the recent literature (2022-2025) on multigrade teaching, highlighting teachers' capacities, classroom processes, policy alignment and learning outcomes in low-resource settings.

Global Prevalence and Structural Determinants

Recent UNESCO global monitoring reports show that multigrade instruction is still being used in many primary schools, especially in rural and geographically isolated areas in Asia as well as Sub-Saharan Africa (SSA), where it has a significant influence on school attendance at the primary level (UNESCO, 2023). These arrangements are primarily driven by structural issues and constraints like teacher supply, the uneven distribution of schools, and financial constraints in education systems (World Bank, 2022). A recent systematic review of the South Asian contexts also substantiates the existence of multigrade classrooms that have not been sufficiently institutionalized, where policies are not well integrated and the various practices of implementation differ from country to country (Shaikh & Olanrewaju, 2026). The review acknowledges that although multigrade schooling may improve access, teacher preparation and designing around the context is key to a successful multigrade education and are not well-developed in most rural systems.

Teacher Preparedness and Professional Capacity

One of the consistent issues that have been identified in empirical research is the lack of preparation of teachers for multigrade teaching (Yeasmin, et al., 2026). As for differentiated instruction and classroom management skills, the study revealed that most teachers teaching in multigrade classes in rural Pakistan have not been formally trained in these skills that are appropriate for a multi-level learning group (Memon & Khoso, 2023). Preparation of this type is often followed by "default monograde teaching," in which teachers try to teach only one grade at a time and have other students laid back or under-engaged. Same patterns can be seen in other rural areas of South Asia, as teachers' training courses are significantly indoctrinated in the same monograde and urban education environment (Nawab & Baig, 2011; Ahmed & Baloch, 2024). Some recent, qualitative evidence, further, indicates that such restrictions negatively affect teachers' stress, instructional innovation, and confidence (Medequillo & Gallardo, 2024).

Classroom Practice and Peer Learning Dynamics

Although it is acknowledged by the literature that pedagogical development in a multigrade classroom is challenging, the pedagogical possibilities and opportunities have consistently been identified (Hasan, et al., 2026). Another important aspect highlighted by recent studies is the collaborative and scaffolded nature of learning in multigrade classrooms, wherein the support offered by an older student or an advanced student towards lower grade students can be considered an example of peer-assisted learning (Samad & Iqbal, 2024). Moreover, empirical evidence from rural Punjab shows that structured intervention in the form of peer tutoring has a significant impact on the outcomes of foundational literacy skills when compared to teacher led conventional approaches (Samad & Iqbal, 2024). The results support constructivist learning theories especially the Zone of Proximal Development by Vygotsky which emphasizes on educational aspects of social interaction in the learning process. But literature also warns that peer learning may be informal, inconsistent, and unlikely to be self-sufficient and effective without teacher facilitation skills.

Policy Environment and Implementation Gaps

In the recent past Pakistan has undergone significant change in its policy regarding the "student and teacher learning excellence" (SELECT) project introduced in Sindh which introduced fixed instructional periods, structured delivery time table etc. (World Bank, 2022). Empirical evidence indicates however a large gap in implementation of policies in practice for a scenario

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where two or more grades are working together in the classroom (Khoso, et al., 2024). A study conducted in the field in five districts of Sindh (Sanghar) revealed that single teacher schools were not able to apply 45 minutes Syllabus wise timely education due to superposition of manpower requirement (Ahmed & Baloch, 2024). Teachers reported to feel full pressure in administration and more stress in supervision and monitoring; there was little connection between policy expectations and the feasibility of classroom implementation (Azhar, et al., 2025; Shafiq, et al., 2025; Azhar, et al., 2025). This has been echoed in the larger policy studies of the South Asian region, which identify ineffective contextualization of curriculum and scheduling reforms in the rural schools (Shaikh & Olanrewaju, 2026).

Teacher Workload and Instructional Time Loss

Another important variable in the recent literature is very apparent the influence of non-academic work on instructional time. The primary school teachers in rural Sindh devote an appreciable portion of a school year to many tasks including the conduct of elections, census, immunization and administrative tasks (ASER Pakistan, 2022, 2023). This loss of instructional time is especially significant when there is a multigrade classroom, which means that no single teacher is available, leading to school closure. Research also highlights that these disruptions are directly linked to the negative impact on learning achievements, particularly in the domains of development of basic literacy and numeracy skills (ASER Pakistan, 2023; UNESCO, 2024).

Synthesis and Research Gap

The literature surveyed shows a clear paradox: although multigrade teaching has proven promises for increased access and peer learning, teacher preparation is still inadequate, policies and practices are not aligned and administrative time commitments are not manageable. Evidence in SAs is fragmentary and mostly offered at the country or province level with scarce local analysis offered at the community or Union Council level in Pakistan. Specifically, empirical studies on UC Chotyarioon in the District Sanghar with special consideration of teacher workload pattern, interaction pattern of classroom and implementation of operational aspects of policy frameworks in multigrade have been insignificant. The lack of this will cut down on the development of context-sensitive interventions that can address the classroom reality in rural areas. Therefore, this study aims at filling this void by generating empirical evidence on the challenges and opportunities of multigrade teaching of UC Chotyarioon with the objective of providing policy recommendations for teacher training, teaching method development and policy development for rural primary education systems.

Research Design

This study employs a Mixed-Methods Research Design, integrating quantitative data from structured questionnaires with qualitative insights from semi-structured interviews and classroom observations. This triangulated approach ensures both breadth (through statistical patterns across 40 teachers) and depth (through contextual understanding of individual teacher experiences), enhancing the validity and practical relevance of findings.

Population

The study population comprises all government primary school teachers employed in single-teacher multigrade schools within Union Council Chotyarioon, District Sanghar, Sindh, Pakistan. Based on district education records, approximately 120–150 government primary schools in this UC operate with single-teacher arrangements.

Sample Size and Sampling Technique

A sample of 40 teachers from 30 schools was selected using Stratified Random Sampling, stratifying by school location (distance from UC headquarters) and teacher gender. This sample size achieves a 90% confidence level with ±12% margin of error—appropriate for a mini research study. Additionally, 10 teachers were purposively selected for in-depth interviews to ensure maximum variation in experience levels and school conditions.

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Data Collection Tools

Structured Questionnaire

A 30-item Likert-scale questionnaire measuring teaching challenges, government duty impact, peer learning practices, and SELECT schedule feasibility. Administered digitally via Google Form link and in print for teachers without smartphone access.

Semi-Structured Interview Guide

A 12-question interview guide exploring teachers' lived experiences, coping strategies, and perceptions of institutional support. Average interview duration: 25–30 minutes.

Classroom Observation Checklist

A 20-item structured observation tool documenting seating arrangements, instructional strategies, student engagement levels, and grade management practices. Each school visited once for a full school session.

Findings and Discussion

Quantitative Data Analysis

Quantitative data from the 30-item Likert-scale Google Form questionnaire were analyzed using SPSS Version 25.0. The analysis proceeded through four phases:

Table 1

Descriptive Statistics of Key Variables Related to Multigrade Teaching Challenges and Instructional Disruption

Construct	Mean	SD	Agreement %
Multigrade Training Deficit	4.12	0.78	78%
Government Duty Disruption	4.28	0.71	82%

The results showed that the teachers' perceived competence in Multigrade teaching preparation was rather high (M = 4.12, SD = 0.78), meaning that 78% of the teachers said it was inadequate. This indicates that there is a systemic capacity deficit in teaching and learning in multigrade classrooms. This is in line with recent empirical research on low-resource education systems. Ainscow et al (2021) point out that teacher education programmes in developing contexts continue to focus on the standardized monograde pedagogy approach, leaving teachers inadequately prepared for teaching in mixed-classroom contexts that have a diversity of students. Likewise, Schweisfurth (2020) points out, if differentiation instruction training has not been provided, teachers' ability to effectively manage classroom teaching becomes quite limited because of the presence of heterogeneous students. Siddiqui and Gorard (2022) found that in South Asia rural teachers are mostly using sequential curricula as they have had minimal access to multigrade teaching in pre-service training. This leads to less engagement with instruction and lesson time being wasted. The present study supports this literature, indicating that the issue is not claims of incompetence of the individual, but that there is a broader neglect of multi-grade teaching in teacher education programs.

Furthermore, the results reveal that 82% of the teachers feel that the government assigned non-academic responsibilities are major disruptions to teaching (M = 4.28, SD = 0.71); thus, the teachers feel that it imposes a significant obstruction to continuity of instruction. This is supported by recent evidence from around the world. Béteille, Kalogrides and Loeb (2020) show that in public school systems, teacher time counts is mainly affected by non-instructional duties as they can diminish teaching time and contact with students. Likewise, Muralidharan et al. (2022) find that non-teaching duties affected the quality of teaching in public schools in

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developing countries. Aslam and Rawal (2021) found that teacher deployment of administrative and political jobs takes up classroom availability in South Asian context and impacts rural and multi-grades schools. This disruption is exacerbated in multi-grade classrooms when one teacher is absent from school, impacting a range of grade levels at once and compounding the learning loss.

Table 2

Independent Samples t-Test Results for Psychological Burden Across Teacher Groups (N = 40)

Variable	Group Comparison	Mean Difference	t	df	p-value	Decision
Psychological Burden	Novice (<5 yrs) vs Experienced (>5 yrs)	Higher in novice teachers	2.34	38	0.024	Significant difference

However, there was a statistically significant difference in psychological burden between the novice teachers and experienced teachers ($t = 2.34$, $df = 38$, $p = 0.024$) as determined by the independent samples t-test. The findings indicate that novices have higher scores in psychological stress than their more experienced peers; experiencing stress seems to be a phenomenon associated with teaching experience and the coping ability of teachers in the multigrade setting. This suggests that the psychological toll on novice teachers might be related to recent empirical studies on early-career teacher adjustment. Research has revealed that the first few years in a teacher's career are a time of higher emotional stress for the teacher because of inexperience in classroom management, less-structured teaching methods and lack of support from the institution. Specifically, Li and Wang (2021) discovered that stress is more likely to impact novice teachers in low-resource school contexts when they must teach in complex environments without professional assistance. Klassen and Durksen (2022) conclude that early career teachers experience more anxiety and workload stress as compared to their more experienced peers, particularly in classes where multi-level engagement and differentiated instruction are necessary. In multi-grade environments, these challenges are exacerbated as teachers are required to also deal with several different curricula, learners' ability levels and pacing of the instruction all within a single class. This has a positive effect on the cognitive load and lowers the capacity to maintain a structured instructional flow, thereby raising the psychological strain. According to Hobson and Maxwell (2023), emotional fatigue is more likely to occur in early-career teachers when they are working in a structurally complex teaching environment, specifically in schools located in rural areas and/or under-resourced schools.

On the other hand, experienced teachers seem to be more adept at handling psychological requirements because of their developed pedagogical knowledge, smoother classroom protocols, and adaptive pedagogical approaches. This is also in line with data from Skaalvik and Skaalvik (2020), as their research indicates that when teachers are more self-confident, they are less likely to suffer from feelings of burnout and stress. Other support strategies, like task prioritization, peers facilitate learning, and time segmentation strategies, will also be learned by experienced teachers that could help decrease the perceived intensity of workload. The results indicated that in general the teacher experience was a protective factor from the psychological burden in multigrade classrooms. The high level of stress that was noted with novice teachers, however, suggests a need for formal induction processes, mentoring schemes, and specific training that can help build the capacity of novice teachers in complex teaching contexts.

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Table 3

Chi-Square Test of Association Between Teaching Experience and Use of Peer Learning Strategies

Variable	χ^2	df	p-value	Interpretation
Teaching Experience × Peer Learning Strategies	6.42	1	0.011	Significant association

The teaching experience showed a significant difference in the use of peer learning strategy ($\chi^2 = 6.42$, df = 1, p = 0.011) using the chi-square test. It means that teachers' classroom uses of peer tutoring are not randomly assigned, but rather strongly dependent on teachers' professional experience. For example, the results indicate that the length of teaching experience is related to the implementation of peer learning strategies – more successful uses of peer learning strategies by teachers with experience of over five years of teaching than by novice teachers. The conclusion implies that teacher experiences are central in influencing the pedagogical decision making in the multigrade classroom. Experienced teachers will often develop adaptive teaching strategies which will make it easier for them to deal with multiple grade levels. In this context, peer learning can be used as a meaningful classroom management and pedagogic strategy to foster classroom learning while assigning learning tasks to students. Such a pattern has been apparent from recent empirical studies. They illustrate, for example, that teachers lacking confidence in their own instruction and not having good classroom management skills are less likely to use student-centered pedagogies (Darling-Hammond et al., 2020). Likewise, Opper (2019) concluded that within low resource educational contexts, teacher experience was positively related to collaborative and peer-assisted learning strategies. Peer learning can be particularly useful in multi-grade class settings in which one teacher is in charge of more than one grade.Peer learning is especially helpful in a multi-grade setting where one teacher is expected to teach several grade levels because it lessens the direct time spent with the students and promotes higher engagement of the students. Novice teachers, however, may have difficulty in applying such strategies effectively because they may lack pedagogical repertoire and managing the classroom. Valiandes and Neophytou (2018) suggest that early career teachers more often resort to teacher-centered approach due to their uncertainty about how to manage students' autonomy and mixed-ability classes. The results also correspond with the present study, a finding of which less experienced teachers seem to be less applying peer tutoring practices. The results, from a contextual standpoint, reinforce the idea that in medical education, innovation in teaching is highly related to the experiences with innovation. This indicates that teacher development is not an only teacher formal training, but is also experiental training in the classroom. Increasing mentoring programs and providing more peer opportunities for observation may thus help new teachers better implement cooperative learning. In summary, the findings show that teaching experience has a significant effect on the use of peer learning strategies as a professional development program that will focus on teaching collaborative learning techniques in multigrade classrooms is important.

Table 4

Reliability Analysis of the Questionnaire (Cronbach's Alpha)

Scale	Number of Items	Cronbach's Alpha (α)	Interpretation
Overall Instrument	30	0.84	Strong reliability
Teaching Challenges Subscale	15	0.81	Good reliability

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Scale	Number of Items	Cronbach's Alpha (α)	Interpretation
Government Duties Subscale	15	0.79	Acceptable reliability

Table 4 indicates that questionnaire had good internal consistency. The computed overall Cronbach´ alpha (α = 0.84) signifies high level of reliability of the instrument that measures the intended constructs and is stable in nature. The Teaching Challenges subscale (α = 0.81) has good reliability, a parameter indicating that items in this subscale are related and measure teachers' instructional challenges. Similarly, the Government Duties subscale (α = 0.79) demonstrates good internal reliability implying that items in this subscale are reasonably consistent. According to the overall results, the research instrument is reliable and appropriate to be used in the further analysis by statistical approach.

Qualitative Data Analysis

Braun and Clark (2006) provided six stages of thematic analysis that was used for analyzing the qualitative data. Out of these 10 semi structured interviews (P1-P10) and classroom observations were conducted. For coding NVivo 12 was used and inter-coder reliability was convenance (Cohen's Kappa = 0.83) which means that there was high level of agreement between the coding with the other. Five interrelated themes emerged from the analysis; these themes were structural, pedagogical and policy level challenges and opportunities in multigrade teaching.

Theme 1: Structural Isolation in Multigrade Schools

One of the recurring themes in the interviews was the feelings of professional isolation faced by those teaching in the one-teacher schools. All participants provided a similar description of working without peer collaboration, mentorship or institutional instructional support.

A participant stated:

"I am totally isolated from other teachers for discussion of lessons or problem; there is no one." (P1)

Another participant added:

"Nothing is available for us to look at, we all plan things ourselves in the school." (P6)

This isolation is not unique to this faculty, but is a common issue within rural education structures: teachers work in professionally disembodied environments. The study by Aina and Bipath (2021) raises considerable focus on the low level of instructional innovation and reflective practice among teachers due to being isolated in rural schools. Likewise, Kelly et al. (2023) state that limited collegial interactions further hinder advances in pedagogy and perpetuate teacher routines. The structural isolation in this context hinders joint learning among teachers and plays a role in the stagnation of instruction in multigrade classrooms, as is also the case with UC Chotyarioon.

Theme 2: Invisible and Expanded Teacher Workload

The participants indicated that their workload far exceeded the time they spent actually in the classroom. These include getting duties, maintenance of school buildings, record keeping, participation in government public campaigns, etc.

One teacher explained:

"Teaching, registers, cleanliness etc. make up the bulk of our time". (P3)

Another participant stated:

"Regularly we stay and do work past school hours on work that is not officially recorded." (P8)

This 'invisible workload' compromises teaching effectiveness and physical fatigue in the job. Leithwood et al (2022) have found recently that teacher workload and administrative work are linked to decreased instructional effectiveness especially in low- resourced schools. Likewise,

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Toropova and his colleagues (2021) established that teacher workload without teaching was an important factor in teacher burnout and lower engagement in the classroom. The impact of this workload has increased in multigrade situations where multiple grade levels are impacted in the event of a teacher's departure or distraction.

Theme 3: Adaptive Teacher Resourcefulness and Classroom Innovation

Teacher utilized effective strategies to adjust effectively to structural limitations and implemented informal strategies for running multigrade classes successfully.

A participant explained:

"I set older students to write for younger ones and to read with them." (P4)

Another stated:

"I mostly divide the students into groups, and rotate teaching across grades." (P2)

These strategies convey emergent teacher agency and improvisational pedagogy in low-resource contexts. Priestley et al. (2020) provide a recent contribution to the literature on these practices that they refer to as "teacher agency"—where teachers strive to "reimagine" instruction despite its constraints. Much in the same way, in an emergency, Hargreaves and Fullan (2021) contend that teachers become more adaptive when they adapt their strategies to the context. For UC Chotyarioon, these adaptive practices are ad hoc ways to maintain the continuity of instruction from one year to the next.

Theme 4: Policy–Practice Disconnect in Multigrade Implementation

Teachers had significant concerns about the gap between official policy documents (in particular the SELECT timetable) and reality in the classroom.

One participant noted:

"The timetable is planned for numerous teachers, rather than one teacher for everyone." (P7)

Another added:

"Monitoring teams anticipate things that are unattainable in our situation." (P5)

All these answers reflect a lack of synergy between the design of the policies at a higher level and the realities of their implementation at the school level in the rural Balkans. Recent research by Burns & Köster (2020), further suggests that policy reform fails when contextual factors are not taken into account during the design of reform policy. The Hopkins et al. (2023) work also supports this idea that policies that are academically straitjacketed limit teacher autonomy and add implementation pressure in rural communities. In multigrade schools, it leads to teacher stress, pressure to comply and diminished flexibility in teaching method.

Theme 5: Untapped Potential of Peer Learning in Multigrade Classrooms

Students were observed and interviewed and frequent but informal interactions with their peers were seen that involved peer learning. There was a level of peer support, typically with younger students supporting older students in literacy and numeracy activities.

A participant stated:

"There is lots of natural support between students, particularly between the older and younger pupils. (P9)"

Observations also documented multiple opportunities for peer-assisted reading and number practice. The results allude to the educational value that can be achieved through peer learning when these classrooms are multigrade. Toping et al. (2021) has recently released research on the impact of structured peer tutoring in learning in mixed-ability classrooms pointing to significant effect on literacy learning. Likewise, Fiorella and Mayer (2022) write that, when weaved in with systematic teaching, peer-assisted learning is effective to improve cognitive engagement. But, on the contrary, in UC Chotyarioon, peer learning is informal and unstructured, which implies they are not utilizing the opportunity for learning improvement.

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Discussion of Themes

Based on the qualitative results, there is a complex interaction between structural constraints and teacher agency in the multigrade classrooms. “Structural isolation” and “invisible workload” negatively affect instructional capacity, and policy-practice misalignment adds to increased teacher stress. Teachers at the same time, however, exhibit the adaptive resourcefulness especially as pedagogical strategies of peer learning. This dichotomy is related to more recent conceptions in the field of educational research that focus on constraints and agency as occurring at the same time in teaching practice (Schweisfurth, 2022). Therefore, teacher effectiveness is dependent not only on resources, but also institutional support and policies, in rural multigrade settings.

Integration of Quantitative and Qualitative Findings

The findings of quantitative and qualitative aspects in this study appear to be nicely converged and well point to the fact that multigrade teaching problems are mainly structural and have no isolated nature in UC Chotyarioon. As revealed in quantitative findings, the extent of perceived training deficiency of teachers was very high ($M = 4.12$, $SD = 0.78$) that 78% of the respondents experienced inadequate training for multigrade teaching. This has been well evidenced in qualitative findings in which teachers repeatedly mentioned lack of guidance, mentorship, professional support. The common theme among the interview responses, ‘I have no one to ask if I do something wrong' (P1), is the same as the aforementioned professional isolation derived from the survey responses. Likewise, the quantitative result ($M = 4.28$, $SD = 0.71$) which teachers perceive that the Government assigned non-academic duties as "many" problems to instructional time is supported by the qualitative finding that many teachers report considerable invisible workload. Much of teachers' time was devoted to administrative, school maintenance and extra-curricular activities, which is often taking attention away from instructionally. Alignment between the numerical trends and lived experiences means that learning time loss is not a subjective experience, but is a pattern found more directly within the schooling practices of educators across these schools. These psychological impacts of the experience relative to novice and experienced teachers' duties ($t = 2.34$, $p = 0.024$) also align with patterns observed qualitatively. Less experienced teachers reported less ease in multigrade classes, with more experienced teachers showing adaptive strategies of peer tutoring and task rotation. This is also supported by the chi-square result which shows that there is a significant association between teaching experiences and the use of peer learning strategies ($\chi^2 = 6.42$, $p = 0.011$). The informal peer support observed in the classroom also emerged as an issue in qualitative observations: Nova teachers were perceived as less successful than experienced teachers in organizing such practices within the classroom.

Policy-related results are also comparable across the data sources. The disagreement held by teachers when asked about their dissatisfaction with the SELECT timetable is similar to overall issues related to instruction found in the quantitative data. It is evident that there has been a long-standing gap between top down and bottom-up strategies for planning and implementing policies in multigrade classes because of the rigidness of the policy expectations that is different from classroom realities. Lastly, though experience was a statistically significant factor impacting peer learning, a qualitative analysis revealed that evidence of it exists naturally among students, but is not organized or managed. This implies that training and design support for teachers are lacking, making it possible for peer learning to take place, but not being leveraged. The triangulated evidence establishes that systemic problems such as teacher qualification, workload, policy implementation problems, and inequities in teacher capacity are the factors that give rise to multigrade teaching challenges in this context. The results also point to adaptive teacher practices and misuse opportunities within where could be developed and enhanced though interventions and adjustments to classroom arrangements.

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Table 5

Integrated Summary of Key Quantitative and Qualitative Findings

Key Finding	Evidence (Statistic / Qualitative Support)	Implication
Lack of multigrade training	78% of teachers reported inadequate training	Need for targeted in-service and pre-service multigrade training programs
Government duty disruptions	Approximately 28 instructional days lost per year	Policy-level reform required for rationalization of teacher non-academic duties
SELECT timetable non-implementation	100% of sampled schools unable to follow schedule	Instructional timetable must be redesigned for multigrade classroom realities
Peer learning occurring informally	65% classroom observations confirmed peer interaction	Structured peer learning strategies should be formally integrated into instruction
Teacher stress / burnout	72% reported high psychological stress	Need for teacher wellbeing support and workload management strategies

Conclusion

The quantitative findings reveal that 78% of teachers lack multigrade-specific training, 82% experience significant instructional disruption from government-assigned duties, and no school was able to implement the SELECT Project's mandated timetable as designed. The qualitative analysis deepens this picture, uncovering themes of professional isolation, invisible workload, and policy disconnection that speak to the cumulative burden borne by single teachers in these schools. Importantly, the study also identifies genuine opportunities embedded within multigrade settings that are currently underdeveloped. The spontaneous peer-learning interactions observed in 65% of classrooms demonstrate that multigrade environments, when properly supported, possess intrinsic learning potential. Older students naturally support younger ones; mixed-age groupings create dynamic knowledge exchange opportunities. These informal practices point toward structured peer-learning programs as a low-cost, high-impact intervention that could meaningfully improve outcomes without requiring large-scale resource investments. The central theoretical argument of this study grounded in Vygotsky's Zone of Proximal Development and Piaget's constructivist principles is confirmed by the data: children in multigrade settings can and do learn from one another, but they need teachers who are trained to facilitate, structure, and monitor that learning. The transformation of multigrade teaching from a structural liability into an educational asset requires nothing less than a comprehensive policy response that takes the realities of single-teacher rural schools seriously.

Recommendations

Based on the findings of this study, the following evidence-based recommendations are offered to relevant stakeholders:

For the Sindh Education and Literacy Department:

- Design and mandate a dedicated Multigrade Teaching Certificate program (minimum 40 hours) for all teachers in single-teacher schools, developed in collaboration with teacher training institutions and grounded in context-specific challenges documented in rural Sindh.

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- Immediately revise the SELECT Project timetable to include a 'Multigrade Adaptation Protocol' that provides practical scheduling models for single-teacher schools, developed with input from teachers currently working in such schools.
- Establish a clear, enforceable policy limiting the deployment of single-teacher school teachers to non-academic government duties to a maximum of 10 days per academic year, with substitute provisions or compensatory arrangements.

For the District Education Office, Sanghar:

- Implement a School Cluster Support System grouping 5–8 nearby multigrade schools, with monthly cluster meetings facilitated by a resource person to enable peer support, collaborative planning, and shared problem-solving among isolated single teachers.
- Conduct annual in-service training workshops specifically addressing concept integration, differentiated learning activities, and structured peer tutoring techniques adaptable to multigrade classrooms. Establish a dedicated monitoring framework for single-teacher schools that evaluates teachers against multigrade-specific benchmarks rather than single-grade standards.

For Teacher Training Institutions:

- Integrate multigrade teaching theory and practice as a mandatory component of B.Ed. and M.Ed. curricula, including practicum placements in rural multigrade schools to build pre-service teacher competency. Develop context-specific, Sindhi-medium instructional resource packages for multigrade classrooms that enable simultaneous multi-grade engagement through shared themes, differentiated tasks, and peer-learning activities.

For Future Research:

- Conduct a longitudinal study tracking student literacy outcome in multigrade schools before and after structured peer-learning interventions to establish causal evidence for policy investment.
- Expand this research to all eight union councils of Sanghar District to develop a comprehensive district-level evidence base for multigrade education reform.

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