

## Implementing Multigrade and Team-Teaching Approaches to Enhance Holistic Development for Slow Learners in Inclusive Classroom Settings

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### Abstract

The purpose of this action research is to better understand how multigrade and team-teaching methods affect slow learners' learning outcomes in inclusive classroom settings. Slow learners often face unique challenges in traditional classroom settings which allow students to receive the learning in passive form. It doesn't handle specific needs of slow learners. The study focuses on how more individualized and encouraging learning environments can be created through collaborative teaching strategies to meet the various needs of slow learners. The research investigates the efficacy of multigrade teaching in which students from grade levels (4-7) are taught together and team teaching in which several educators work together in promoting academic advancement and engagement among slow learners. Assessments of students' performance over a predetermined period of time, teacher and student feedback, and classroom observations are all included in the data collection process. Findings suggest that these approaches are also helpful are enhancing learning outcomes. The results are intended to give educators useful guidance on how to modify their pedagogical approaches in future.

**Keywords:** *Multigrade Teaching, Team Teaching, Slow Learners, Inclusive Education, Collaborative Teaching*

### 1. Introduction

In the past decades, the practice of including children with impairments in mainstream classrooms has become more prevalent worldwide. Laws and policies in numerous industrialized countries prioritize inclusive education, advocating for equal learning opportunities for every child (UNESCO, 2023). All students, regardless of their diverse needs and backgrounds, are entitled to receive the same quality of education (Witrias, Nugrahayati & Mustadi, 2019).

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Additionally, many developing nations have adopted policies promoting the core principles of inclusive education to support learners with specialized needs (Kuyini & Desai, 2007; WuTien, Ashman & Yong-Wook, 2008). Research indicates that slow learners are often identified in inclusive classrooms, but teachers may lack effective strategies to support them adequately. In the context of our education system, there is a pressing need for reforms and innovative practices to address the needs of all learners. Improving education quality requires significant effort to ensure students are well-prepared for the challenges of a rapidly evolving world.

When exploring the dimensions of learning it entails a transformative process, whether it involves a shift in perspective, the development of a new skill, or a deeper understanding of scientific principles (Cherry, 2022). Since children learn at different rates, it is crucial for teachers to recognize and adapt to these differences. While instruction is external to the student, learning is a natural, intrinsic process (Spelke & Kinzler, 2009). In the present context where education faces numerous challenges and educators seldom diagnosed special needs, in that context to deal with an inclusive classroom is really a challenge. This study aims to explore how multigrade teaching affects slow learners and how this approach could assist both students and school administrations, especially those unable to hire specialized educators due to budget constraints.

Different instructional models have been developed, with multigrade teaching—a model where students of different grade levels are taught together—being particularly effective in addressing the varied needs of learners. Research has shown that multigrade teaching can significantly enhance learning outcomes (Mulryan-Kyne, 2007; Brown, 2010). In Pakistan, limited educational resources often disadvantage slower learners, which can lead to higher dropout rates (Soofi & Akhtar, 2015). Studies report that there exists much research gap in the Pakistani context for inclusive set specifically for slow learners (Malik, 2010; Rashid & Naureen, 2013). To cater to the challenges the study proposes two teaching models: Multigrade Teaching and Team-Teaching Model. Previous studies support team teaching and multigrade in many situations impacting positively towards students' outcomes (Dennin & Lasagabaster, 2022; Erden 2020) which aims to ask following research questions: Do team teaching and multigrade teaching affect students' learning in an inclusive set up? And do they exert a profound effect on social development on slow learners?

### **1.1 Objectives of the Study**

The objectives of the study included to:

1. assess the effects of team teaching and multigrade teaching on students' academic performance of slow learners in inclusive setup.

2. evaluate the effect of these teaching models on social development of slow learners.

### 1.2 Research Questions

Research questions developed for the study were:

- Q.1 Does team teaching and multigrade teaching produce positive impacts on slow learner's academic performance?
- Q.2 How do these models influence the social development of slow learners?

### 1.3 Hypothesis of Study

The hypothesis developed is

- H<sub>01</sub>: Use of multigrade and team-teaching approach significantly produces positive impacts on students' academic performance of slow learners.

### 1.4 Significance of Study

The study was conducted in an inclusive school in Karachi in which team teaching and multigrade teaching model was applied on Grade 4-7 students to find out its efficacy students' academic performances and development of social skills. The study is significant as it highlights the specific models that are practiced in schools and proved to be beneficial to teach slow learners. There needs to be specific professional development programs that can help the teachers to cope with different style of students. With this action research teachers themselves practiced the model, plan execute, reflect and finally replan to propose the best practical method of multigrade teaching to deal with slow learners.

## 2. Literature Review

Effective teaching strategies play a crucial role in education, particularly in fostering inclusive practices and enhancing students' academic achievement and overall learning experiences. Inclusive education provides broader social benefits beyond academic success. By promoting an inclusive culture from an early age, schools help build social cohesion and prepare children to thrive in diverse communities and industries (Rapp & Corral-Granados, 2024). Research shows that inclusive classrooms help students with disabilities, particularly slow learners, feel more integrated and aware of their environment by promoting positive peer relationships, reducing stigma, and enhancing self-esteem (Sharma, Loreman, & Forlin, 2011). Co-teaching or team teaching is a method whereby at least two educators work together to plan, deliver, and then assess the instruction of a class of students. This literature review discusses the purpose, benefits, and implementation of team teaching in various educational settings. Moreover, team teaching provides a preparation period to the teachers meant for rehearsals where they can review the content in detail, evaluate and improve the learning activities

designed by them to yield better quality instruction that enables students to have a deep understanding of the subject under study (Plank, 2023).

The cooperative character of team teaching further makes it easier for students to acquire critical 21st-century abilities, which vary from problem-solving and communication to cultural competency. While working jointly on solving issues within the neighborhood, teachers approach children with diverse ethnic backgrounds using their best possible skills. Saldivar (2015) found that team teaching can enhance students' acquisition of essential skills for the 21st century, including problem-solving, communication, and cultural competency. Teachers who work together to address local issues can serve as an inspiration for their students to embrace inclusivity and work together, enabling them to become effective public administrators and policymakers. Saldivar (2015) and Johnston et al. (2011) have shown that group instruction can be a good tool for post-secondary professional development.

Diverse expertise and multiple ideas from multiple angles lead to enhanced critical thinking. An enhancement in attitudes to the practice of teaching within an inclusive classroom is also linked to teacher efficacy. In one of the preliminary rigorous studies found that teaching efficacy was found to be one of the strongest predictors of their attitudes towards inclusion (Brussino, 2020). Team teaching within an inclusive classroom caters to the diverse needs of students with disabilities

Researchers found that teachers who felt low about their abilities exhibited symptoms of anxiety and rejected the proposition of having students with special needs in their classes. Winter (2006) also investigated the attitudes towards the inclusion of pupils with disabilities by 139 teachers from 17 elementary schools, and furthers the effects of the school organization, as well as the educational climate and teachers' sense of self-efficacy. It was noted that several conditions should be in place if teamwork is to occur effectively, and team learning has been the most commonly suggested precondition of effective teamwork (Dochy et al., 2014; West, 2004).

Another study identified three key skill sets that teachers need for effective teaching in inclusive classrooms. These include the ability to manage the classroom environment and student behavior—such as designing a classroom setup that minimizes behavioral issues—and mastery of content and pedagogy. This involves understanding students' characteristics, selecting appropriate instructional goals, adapting lessons to meet individual needs, and employing cooperative learning strategies (Specht & Thomson, 2022; Nougaret et al., 2005; Winter, 2006).

Multigrade teaching refers to the practice of instructing students from two or more different grade levels within the same classroom, a method commonly employed in both developed and developing countries (Mulryan-Kyne, 2007). Unlike the traditional structure where students of a single grade level are grouped together, multigrade classrooms consist of students from varying grades. In many educational systems, grade levels correspond to specific age groups, where students of similar ages are placed in the same grade (Little, 2001). However, this age-grade alignment may not always apply, especially in systems that utilize practices like grade acceleration or retention.

The use of multigrade teaching typically arises for three main reasons (Berry, 2000). First, it is common in small, rural schools situated in isolated or sparsely populated areas. These schools often serve communities with a limited number of students and may employ only one, two, or three teachers, who are responsible for teaching across multiple grade levels (Naparana & Alinsug, 2021). In such schools, often termed "multigrade schools," educators manage multiple grades in one classroom setting. In developing countries, multigrade schools are seen as a means to increase access to primary education, especially for girls, by bringing schooling closer to local communities.

In addition to rural settings, multigrade teaching is sometimes used in large urban and suburban schools (Hargreaves, 2001). This approach helps address variations in student enrollment. For instance, a school might combine two grades to balance class sizes. In regions where teacher absenteeism is common, schools may merge grades to ensure that students continue receiving instruction despite teacher shortages (Reyes & Ching, 2024). Although this issue is underexplored in the literature, it is believed to be prevalent in parts of Africa and the Caribbean.

Beyond being a practical solution, multigrade teaching is also viewed as a deliberate educational strategy in some contexts. In developed countries, for example, it is part of a broader multi-age learning approach (Khazaei et al., 2016). Proponents argue that mixed-age classrooms foster better collaboration among students and support the development of social skills. While these potential benefits are less discussed in literature related to developing nations, some researchers suggest that multigrade teaching could offer an efficient, cost-effective way to deliver quality education in remote areas (Naparana & Alinsug, 2021).

Because of their small size and proximity to communities, multigrade schools are often a more economical option for delivering education (Maynopas & Escote, 2024). They provide communities with access to the full primary school curriculum. In Vietnam, for example, multigrade schools have been used

to extend educational opportunities to mountainous regions that previously had limited access to schooling (UNESCO, 2023). In Zambia, multigrade schools are seen as a solution for enhancing existing primary schools in remote areas that previously only offered partial educational cycles (Qayoom et al., 2024).

Both the general social collaboration theory and Vygotsky's theory of social development provide theoretical underpinnings for team teaching and multigrade as a collaborative educational technique. These frameworks offer fundamental ideas that are highly compatible with team teaching's objectives and techniques, especially in inclusive learning environments. Social connection is essential for cognitive growth, according to research by pioneering psychologist Lev Vygotsky. ZPD, or the Zone of Proximal Development, is a key idea in his theory. It describes the range of tasks that a learner may complete with the help of more experienced individuals (Vygotsky & Vygotsky 2021). Vygotsky believed that learning happens through social interactions and group projects with classmates and teachers who act as scaffolds, offering learners short-term assistance to help them complete tasks that are above their current capacity.

Using scaffolding in team teaching and multigrade teaching, teachers work together to provide scaffolding that is specific to each student's requirements. Teachers can adjust lessons to fit the vast range of learning abilities present in the classroom by collaborating to provide varying degrees of assistance and direction. The implementation of a communal method guarantees that every student is provided with suitable levels of challenge and assistance, thereby promoting their cognitive development. The benefits of cooperative learning environments, where students actively connect with others to construct knowledge collaboratively are highlighted by social collaboration theory, which builds on Vygotsky's concepts (Dillenbourg, 1999). According to this hypothesis, when people work together to complete tasks, exchange ideas, clarify concepts, and solve problems as a group, learning is improved. Through encouraging cooperative interactions between students, team teaching facilitates peer learning. Students gain collaboration, idea sharing, and support for one another's learning through cooperative activities and group projects led by several teachers. A sense of community and respect for one another is fostered in this collaborative learning environment.

In summary, this literature review has examined the dynamic interplay between team teaching and inclusive education, highlighting their combined ability to improve educational results for all students, including those with a range of learning challenges. Several important themes have emerged from a thorough analysis of the literature. First and foremost, team teaching creates cooperative settings that support efficient teaching methods and the exchange of

varied viewpoints among teachers. By attending to each student's unique learning needs, this collaborative method not only enhances teaching strategies but also promotes students' holistic development. Second, Vygotsky's socio-cultural theory and social collaboration theory, two key theoretical pillars of team teaching, emphasize the value of peer interaction and shared learning experiences in classroom environments. These theories offer a theoretical framework consistent with the collaborative teaching approach, highlighting the importance of social contact for cognitive growth and academic success. Finally, while there are certain difficulties in implementing team teaching in inclusive classrooms, such as in terms of teacher training and resource allocation, the advantages in terms of enhanced student engagement, academic success, and social inclusion greatly exceed these difficulties.

In the future, studies should focus on creative approaches and effective team-teaching techniques that may successfully meet the varied requirements of students in inclusive environments. Furthermore, longitudinal research is required to evaluate the long-term effects of team teaching on students' academic paths and outcomes in life. Teachers and educators may establish inclusive learning environments that empower all students by utilizing the synergies between inclusive education ideas and collaborative teaching practices (Msimanga, 2020). The implementation of team teaching in inclusive classrooms can be further optimized by addressing these limitations through rigorous research approaches and continuous professional development. This will support fair access to high-quality education for all students. Based on the empirical studies and theoretical frameworks, the study is hypothesized to assess the effect of multigrade and team teaching on academic learning of the students. This framework offers a fair assessment, recognizing the practical difficulties as well as the possible advantages of team teaching in inclusive educational settings.

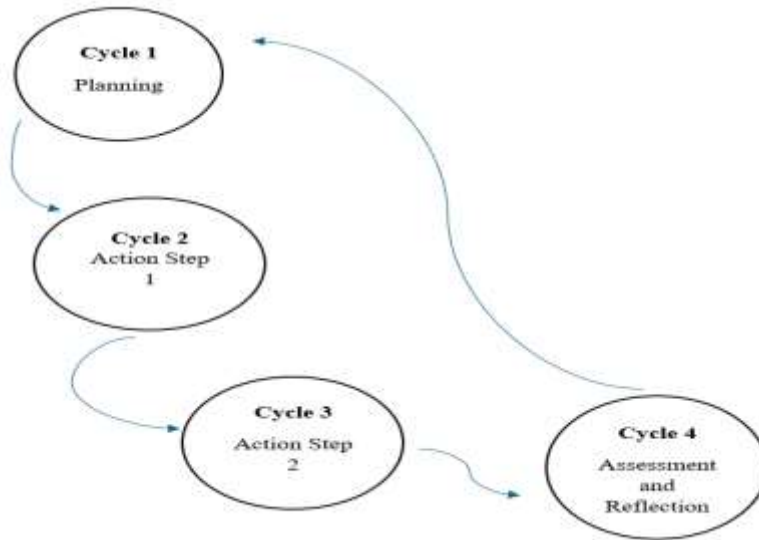
### **3. Research Methodology**

#### **3.1 Research Design**

The study employs Action Research as the primary aim is to improve the learning and social developmental abilities of the students. The primary steps of action research are to find out the solutions of existing problems, which started with planning, action and reflecting on the results in interrelated cycles that are value-driven (Clark et al., 2020). Action research is aimed at producing information that can be implemented immediately to improve practice in certain social situations (Cornish et al., 2023). The philosophy underpinning action research can be understood by using a pragmatic perspective (Lufungulo et al., 2021). The study is conducted in cycles for five months during which two strategies were applied together.



Figure 1  
*Steps of the Action Research of the Study*



During the first cycle of planning, researcher planned for the strategies that could be executed in the action plan. During the next cycles researcher executed the strategies, assessed and reflected on the action plan.

### **3.2 Sample and Sampling Technique**

The study was conducted in an inclusive school that caters different needs students. Purposive sampling was used for the selection of school as for selection, school needs to be inclusive and willingness of school head to apply the strategies to find out its efficacy on slow learners. Therefore, for the study one inclusive school from district central, Karachi was selected.

### **3.3 Instrumentation**

Researcher used multiple tools for this study. For the execution of the plan, researcher developed lesson plans on team teaching and multigrade teaching. Researcher utilized participant observations and observed students change in behavior in classrooms during and after the strategies. As this is action research researcher maintains reflective journal for daily writing of reflection on each cycle. The research also utilizes students' scores of pre and posttest to assess the efficacy of the two teaching models.

### **3.4 Strategies Applied**

Students were first prepared for multigrade teaching in which grades 4-5 and grade 6-7 were sectioned together. Researcher started the cycle with an



assessment in order to have an idea about the learning levels. This assessment was named as pretest scores after the researcher developed two multigrade sections utilizing first direct instruction method and then students were grouped together on basis of their mixed grades. Students were grouped together and were taught different subjects English and Social Studies. They were assessed on both criteria formatively and summative. Formative in form of oral questions and answers and summative in form of one written test. The cycle went on for a month and students were assessed after a month on their bimonthly scores. Based on the results received researcher reflected and used team teaching model in same multigrade class levels in order to strengthen their learning. Two teachers have collectively planned a topic of English to the students. This cycle also lasts for a month and students were again assessed on their second bimonthly scores, this second bimonthly scores were named as post test scores and the analysis has been done by comparison of these two scores of pre and posttest, both of which are of equal marks of 50.

**Cycle 1:** Researcher first established clear objectives to develop the skills of learning and social development in slow learners using multigrade teaching.

**Team Formation:** While carrying out teaching and learning activities in the inclusive classroom, a team of teachers was involved this included general teachers and special teachers. Then did the baseline assessment named as Pre-Test that allowed the identification of students in need of further assistance to improve their academic skills. Due to the purpose of reaching various learning styles and the requirements of learning, there researcher used a combination of direct instructions with group working.

**Cycle 2:** Researcher puts action into plans and ensures that techniques suit the needs of each grade (while the IV should use a simple method, the VII should use a more advanced method). For example, a topic was given on creative writing involving students to write on a particular topic within the given time. And for grade VII they were asked to prepare and present a speech on 23<sup>rd</sup> of March. Researcher provided support and helped the pupils to recall the processes of their development and studying. As written in reflection journal of the researcher;

*“I helped the students of Grade 4 to enhance their writing skills by integrating the Social studies Topic, 'the water cycle' with an English lesson and writing an essay on it. It was very challenging for multigrade teaching but after the class by observing students learning I felt so happy....”*

**Cycle 3:** Reflection and students' assessment after second cycle has led the researcher to induce now team teaching. The researcher planned with her team mate to plan for this cycle. Two teachers (researchers) contributed and collaborated together and planned to teach the two classes with team teaching.

Two days a week, one class for two periods and two days a week for another class again for two consecutive periods. They taught three subjects: Math, English and Integrated Science which contains some common topics of Social Studies and Science. After completion of one and half month results were assessed which were named posttest.

**Cycle 4:** Researcher carefully analyzed the data which were gathered from students' scores as well as the observation in the class. After analyzing the researcher reflected on this study, research, collaborate, discuss with co-teacher and school head and find out how other practical strategies that could be implemented to make the action cycles more productive. The reflection was coupled with observation and interviews with team members which lasted for a month.

#### 4. Data Analysis and Interpretation

Data collected at the end were analyzed quantitatively and qualitatively to find out the results and improvement of multigrade and team-teaching model in classrooms. The data analysis and conclusions based on the participants' pretest and posttest and observations conducted by researcher to find out the improvement in social development skills. Finding out whether participant performance differs significantly before and after the intervention is the main goal. Descriptive statistics, correlations, paired samples t-tests, and statistics on paired samples were all included in the analysis.

Table 1

##### *Descriptive Statistics*

Total (N=49)	Minimum (scores)	Maximum (scores)	Mean (scores)	S.D (scores)
pretest	33.00	89.00	62.00	12.15
posttest	56.00	99.00	78.91	9.63

Table 1 demonstrates the descriptive statistics of the students and their scores they obtained during pre and posttest. As the study is done in an inclusive set up which comprises of a smaller number of students in each class. The school selected was of co-education therefore both Male [23] and Female [26] students were there in four grades from Grade IV till Grade VII. The statistics indicated the minimum scoring was 33 and highest of 89 out of total of 100 scores for pretest scores which was conducted before the strategy of multigrade and team teaching applied and the scores was improved for posttest sores having minimum value of 89 and maximum value of 99.

Table 2  
*Paired Samples Statistics*

N= 49		Mean	Std. Deviation	Std. Error Mean
Pair 1	pretest	62.00	12.15	1.73
	posttest	78.91	9.63	1.37

Table 2 shows descriptive statistics of paret sample t tests. Analysis further clarify the comparison between pretest and posttest scores depicting the Mean [62] of pretest and postttest scores [78] and a SD (standard deviation) of pretest [12.1] with posttest scores [9.63].

Table 3  
*Paired Samples Test*

Pair 1 pretest - posttest	Paired Differences				t	df	Sig. *(2tailed)
	Mean	S.D	Std. Error Mean	95% Confidence Interval of the Difference			
	16.91	11.25	1.60	Lower 20.15      Upper 13.68	10.51	48	.000

Table 3 depicts the significance level and testing of hypothesis [ $* p < 0.05$  is significant]. The 95% confidence level reports that true mean difference between pre and posttest occurs from -20.15 till -13.6815. P value is significant depicting there exist a significant difference between the two scores thus supporting the hypothesis (there exists a significant difference between the pretest and post test scores before and after the application of multigrade and team-teaching model)

The results proved that the integration of blended mode of multigrade teaching with team teaching proved to be effective for inclusive set up. An indication of consistency in performance is the moderately positive correlation found between pretest and posttest scores, which implies that participants who did well on the pretest also tended to do well on the posttest. All individuals benefited from the intervention, though, as seen by the considerable improvement in mean scores.

It is evident from the data analysis's descriptive statistics, paired samples statistics, correlations, and other findings that the participants' performance clearly improved following the intervention that supports the literature (Fatima et al., 2024, Plank: 2023). These outcomes attest to the intervention's success in raising participants' levels of knowledge and proficiency. Subsequent investigations may go deeper into the particular elements that are fostering this progress and investigate ways to optimize them in subsequent interventions.

Table 4  
*Data from Observation*

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Active Participation	Participates in discussions, group activities, or tasks (raises hand, contributes ideas)
Interest and Enthusiasm	Shows curiosity, asks questions, or expresses excitement for learning
Interaction Quality	Engages in positive, neutral, or negative interactions with peers
Social Skill Level	They all developed their social skills
Engagement Level	Their engagement level rises from 1-4 point

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#### **4.1 Social Development Skills**

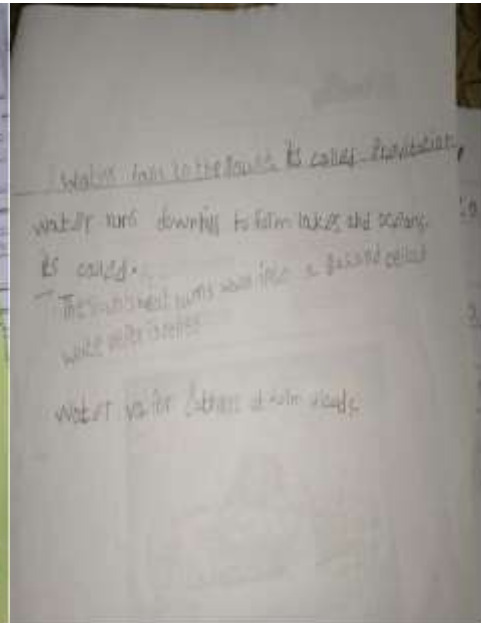
In order to measure and analyze social development skills researcher used observations to find out whether the teaching models have helped the students to improve their social skills in addition to strengthening their intellectual abilities. Previous research indicates that slow learners often struggle in these areas, exhibiting shyness, low self-esteem, reduced confidence, and difficulties in collaboration and communication (Chauhan, 2011; Karimi et al., 2017). However, when multigrade teaching was implemented, it proved beneficial for their social and emotional growth.

The researcher noted that slow learners in Grade 6 took on leadership roles, mentoring younger students, and began communicating more openly, assisting peers, gaining confidence in presentations, asking questions, and actively participating in discussions. Additionally, their handwriting improved, and they approached tasks with greater creativity and enthusiasm. The image below shows an activity by a Grade 4 student, who, despite previously being unable to write a sentence, has now written a full paragraph independently, thanks to this approach of being collaborative with each other that significantly improved their learning.

Figure 2  
*Model Activity Sheet 1  
(For secondary grades)*



Figure 3  
*Model Activity Sheet 2  
(For elementary grades)*



These sample activity sheets show that students' work greatly been improved, and they have learned to write by their own. The students previously faced difficulties in asking questions, interacting with their peers and understanding the concepts, now are able to work independently with improved skills. These models have helped them to develop their self-esteem and confidence through which they will be able to develop a social circle and learn more.

### 5. Discussion and Conclusion

The purpose of the research was to evaluate how well team teaching and multigrade teaching works in an inclusive school environment in Karachi to improve slow learner's academic abilities and social development from Grades 4 through 7. Students' cognitive abilities, writing skills, comprehension, and capacity to respond effectively showed significant improvement when multigrade and team-teaching methods were implemented. In a multigrade classroom, where students of different age groups and grade levels learn together, learners benefit from peer interactions, collaborative learning, and differentiated instruction

tailored to various learning needs. This environment helps students reinforce their knowledge through peer teaching and develop higher-order thinking skills by engaging with diverse perspectives.

Team teaching, on the other hand, allows multiple educators to collaborate in planning, delivering, and assessing lessons. This approach enables teachers to leverage their individual strengths and provide more personalized attention to students. The variety in instructional methods helps clarify complex concepts, fosters better comprehension, and allows students to experience multiple teaching styles. Together, these methods create dynamic, interactive learning environments that promote critical thinking, enhance communication skills, and encourage active participation, leading to improved academic performance and deeper understanding of the material.

Several important conclusions can be made in light of the study's observations and findings. Students' intellectual abilities and interpersonal skills significantly improved when teaching with these two models in an inclusive classroom. Both of them improved students' academic performance, as evidenced by an increase in mean scores from 62.00 to 78.92 in the pretest-post-posttest study. Students' levels of engagement and involvement increased as a result of team teaching. The model of team teaching and multigame teaching when applied offered an encouraging classroom climate that was more participatory and inclusive by providing a nurturing learning environment that addressed the various needs of children (Plank, 2023; Naparan & Alinsug, 2021). As the research and participants highlight, learning in groups can benefit students' learning outcomes particularly when provided within an inclusive setting. The standard gains in reading and writing abilities are evidence that team teaching does a good job if done with quality for the learning needs of children possessing different developmental disabilities. Despite the positive findings, several obstacles remained including a small sample size, short duration of intervention and challenges associated with instructor variability as well as resources. These variables might have affected the depth and generalizability of any findings. Students have also developed good interpersonal skills, working and collaborating in group, sharing with others portraying the social development of slow learners which was possible only by inculcating these innovative practices (Karimi et al., 2017). The study depicted that team teaching and multigrade teaching are helpful in the academic and social development of a child.

## 6. Recommendations

Following actions are suggested in light of the study's conclusions:

1. Two or more schools may be selected to analyze the generalized effects of the study.
2. The cycles continued only for 5 months; more prolonged effects could be seen if it is continued at least for one academic session
3. Specific trainings are required for team teaching and multigrade teaching.
4. Reassess the models to identify the gaps like any misalignment or lack of coordination.
5. Apply the models in subject specific areas in which students faces major difficulties.

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