Original Article

Strategies Employed by Teachers in Forming Groups to Facilitate Group Learning in Selected Primary Schools in Uganda

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ABSTRACT

This study explores the strategies used by teachers to form groups that facilitate effective group learning in primary schools in Uganda, guided by Vygotsky's Social Constructivist Theory, Bandura's Social Learning Theory, and Piaget's Constructivist Theory. A qualitative exploratory case study design was employed, utilizing interviews, focus group discussions (FGDs), lesson observations, and lesson plan analyses to gather comprehensive insights from both government-aided and private primary schools. Findings indicate that teachers predominantly employ mixed-ability, size-oriented, and random group formation strategies to enhance collaboration and accommodate diverse learner needs. However, the study identified significant gaps in teachers' skills for structuring group activities, particularly in aligning group composition with cognitive, social, and affective learning objectives. The lack of standardized guidelines and adequate training on effective group formation strategies emerged as a barrier, limiting the full potential of group learning pedagogy. The study contributes to educational pedagogy by highlighting the contextual factors influencing group formation strategies in Ugandan primary schools, revealing disparities between teacher practices and optimal group learning conditions. It emphasizes the need for targeted professional development programs to enhance teachers' competencies in group facilitation, alongside increased investment in instructional resources to support structured group activities. Recommendations include implementing comprehensive training on cooperative learning techniques, developing standardized guidelines for group formation, and promoting flexible classroom arrangements to support interactive learning. Future research should explore the long-term impacts of group formation strategies on both academic performance and social skill development, assess the effectiveness of various grouping methods across diverse educational contexts, and examine the role of cultural factors in shaping group learning dynamics. Addressing these gaps will inform evidence-based practices and policy decisions aimed at optimizing group learning pedagogy in primary education.

INTRODUCTION

In the pursuit of achieving quality education as outlined in the Sustainable Development Goals (SDG 4), there is an increasing emphasis on effective teaching strategies that foster collaborative learning and promote learner engagement (UNESCO, 2020). The 21st-century educational landscape demands innovative approaches that move beyond traditional teacher-centred methods, focusing instead on interactive and learner-centred pedagogies. Group learning pedagogy is recognized for its ability to enhance cognitive, social, and emotional development, and has gained considerable attention in educational discourse globally and in Uganda's primary school system (Kaendler, Wiedmann, Rummel & Spada, 2019).

In Uganda, the Ministry of Education and Sports has advocated for learner-centred methodologies, including group learning, as a key component of the revised competency-based curriculum introduced to improve learning outcomes (NCDC, 2019). However, the practical implementation of group learning strategies in primary schools remains inconsistent, often hampered by traditional teaching methods, limited teacher training, and inadequate classroom resources. Teachers play a central role in determining the success of group learning, particularly through their strategies for forming groups that are conducive to collaborative and inclusive learning environments.

Historically, group learning has its roots in the educational philosophies of Socrates, Plato, and Aristotle, who emphasized collaborative inquiry and dialogue as essential components of learning (Reiss, 2024). In the context of modern educational theories, Lev Vygotsky's Social Constructivist Theory (1978) provides a foundational framework for group learning, emphasizing the importance of social interactions and the Zone of Proximal Development (ZPD) in facilitating cognitive growth. Albert Bandura's Social Learning Theory (1977) further highlights the role of observation, modelling, and imitation in learning processes, suggesting that group settings can enhance knowledge acquisition through peer interactions. Additionally, Jean Piaget's Constructivist Theory (1973) underscores the active role of learners in constructing knowledge through hands-on activities and peer collaboration. Together, these theories provide a comprehensive understanding of why effective group formation is crucial for the success of group learning pedagogy.

Despite the theoretical support for group learning, empirical evidence suggests that teachers in Ugandan primary schools face several challenges in implementing effective group formation strategies. These challenges include balancing mixed-ability groupings, addressing diverse learner needs, and managing classroom dynamics in resource-constrained settings (Mendoza & Heymann, 2022). The gap between policy aspirations and classroom realities indicates a need for targeted interventions to equip teachers with the necessary skills and strategies for group formation. Understanding the specific strategies employed by teachers and the contextual factors that influence these decisions is critical for enhancing the effectiveness of group learning in primary education.

This article explores the strategies used by teachers in forming groups to facilitate group learning in selected primary schools in Uganda. By examining

the practices, perceptions, and experiences of teachers, this study aims to provide insights into the intricacies of group formation and its impact on learner engagement and outcomes. The findings will contribute to the discourse on innovative teaching practices, offering evidence-based recommendations for improving group learning pedagogy and informing future policy decisions in Uganda's education system.

Problem Statement

Despite the recognized benefits of group learning pedagogy in enhancing learner engagement, academic achievement, and social skills development, the effective implementation of this approach in Ugandan primary schools remains a significant challenge. The core issue addressed in this study is the gap in the strategies employed by teachers for forming groups to facilitate collaborative learning. While group learning is a key component of Uganda's competency-based curriculum, the lack of standardized guidelines and adequate training has led to inconsistent practices in group formation, often resulting in ineffective group dynamics and limited learning outcomes (NCDC, 2019; Mendoza & Heymann, 2022).

Reports from Ugandan primary schools reveal several issues: teachers struggle with balancing mixed-ability groups, managing classroom diversity, and adapting grouping strategies to fit different learning contexts (MoES, 2021). The predominant use of traditional, teacher-centred methods further exacerbates these challenges, as many teachers lack the necessary skills to effectively implement learner-centred approaches like group learning. Additionally, limited resources and large class sizes hinder teachers' ability to form well-structured groups, which negatively impacts the quality of learner interaction and engagement (Ezumah & Ezumah, 2020).

This gap in effective group formation practices is not unique to Uganda; similar challenges have been documented globally, where teachers face difficulties in applying theories of collaborative learning due to inadequate professional development and a lack of practical, context-specific strategies (Care et al., 2017; Kwarikunda et al., 2022). The

ineffective formation and management of learning groups hinder the potential benefits of group learning, such as enhanced critical thinking, peer support, and the development of social competencies.

Given the critical role of group formation in the success of group learning pedagogy, this study seeks to address these gaps by exploring the specific strategies teachers use in forming groups within selected primary schools in Uganda.

Objective of the Study

The study was done to explore the strategies teachers use in forming groups within selected primary schools in Uganda.

LITERATURE REVIEW

Theoretical Review

This study draws on three key educational theories: Lev Vygotsky's Social Constructivist Theory (1978), Albert Bandura's Social Learning Theory (1977), and Jean Piaget's Constructivist Theory (1973). Vygotsky's Social Constructivist Theory emphasizes the importance of social interactions in learning, particularly through the Zone of Proximal Development (ZPD). The ZPD illustrates the gap between what a learner can do independently and what they can achieve with the help of peers or teachers. In group learning contexts, this theory supports forming groups where learners can collaborate, scaffold each other's learning, and engage in tasks that promote deeper understanding (Eun, 2019).

Review of Related Literature

The formation of groups for collaborative learning has deep historical roots, influenced by educational theories that emphasize dialogue, social interaction, and cognitive development. In ancient times, philosophers like Socrates emphasized the importance of learning through dialogue and questioning, highlighting the role of interaction in fostering deeper understanding (McLeod, 2018). During the 20th century, educational theorists such as Vygotsky and Piaget underscored the importance of social interactions in the learning process. Vygotsky's Social Constructivist Theory

emphasises the Zone of Proximal Development (ZPD), where learners advance through guided interactions with peers, while Piaget's Constructivist Theory stresses active knowledge construction through hands-on group activities (Eun, 2019; Zajda & Zajda, 2021).

Group learning pedagogy has evolved as a key strategy in contemporary educational contexts, recognized for its potential to enhance cognitive, social, and emotional development. Mixed-ability grouping, size-determined grouping, and interest-based grouping have emerged as prevalent strategies employed by teachers to optimize learning outcomes (Kaendler et al., 2019). Research indicates that effective group formation requires careful consideration of learners' abilities, interests, and social dynamics. Mixed-ability groups, for instance, can foster peer teaching and collaborative problem-solving, yet they may also present challenges in balancing participation and ensuring equitable contribution (Schmidt et al., 2017). Size-determined groups, while facilitating better task management and communication, may struggle with achieving a balance in skills and perspectives, affecting the overall dynamics of group interaction (Namusoke & Rukund, 2022).

Despite the widespread adoption of group learning strategies, gaps persist in the literature regarding the specific practices and challenges faced by teachers in forming effective groups, particularly in resource-constrained environments like those found in Ugandan primary schools. Many studies have focused on group learning outcomes but have not sufficiently addressed the contextual barriers teachers encounter, such as large class sizes, limited resources, and diverse learner needs (Care et al., 2017; Kwarikunda et al., 2022). Additionally, there is a lack of comprehensive guidelines for group formation that align with cognitive and social development goals, highlighting a need for further empirical research. Addressing these gaps could inform more effective teaching practices and policy decisions, enhancing the implementation of group learning pedagogy in diverse educational settings.

Furthermore, teachers' strategies for forming groups are influenced by both theoretical frameworks and practical classroom considerations. Vygotsky's

Social Constructivist Theory highlights the importance of social interactions in shaping cognitive development, suggesting that learners advance more effectively when grouped with peers who can offer appropriate scaffolding (Vygotsky, 1978). Bandura's Social Learning Theory complements this by emphasizing the role of observational learning, where learners imitate and model behaviours observed within the group (Allan, 2017). Teachers often form groups based on these principles, creating environments where learners can benefit from diverse abilities and perspectives. However, research indicates that the lack of teacher training on implementing these theories in real classroom settings often results in suboptimal group dynamics, limiting the effectiveness of collaborative learning (Mendoza & Heymann, 2022).

Challenges in group formation are also compounded by the contextual realities of primary schools in Uganda. The traditional teacher-centred approaches, large class sizes, and limited instructional resources constrain teachers' ability to effectively implement group learning strategies (MoES, 2021). Additionally, there is a tendency to rely on random grouping without considering factors such as learners' abilities, interests, or social relationships, which can lead to imbalanced group participation and hinder collaborative learning outcomes (Oyegoke, 2019). Addressing these gaps requires a targeted approach to teacher training, emphasizing skills in strategic group formation and resource utilization. This study aims to bridge the gap by examining the specific strategies employed by teachers in forming groups, providing empirical evidence to support the development of tailored interventions that enhance group learning practices in primary education.

METHODOLOGY

This study employed a qualitative exploratory cross-sectional study design to explore strategies teachers use in forming groups within selected primary schools in Uganda. A qualitative approach was chosen to capture the complex, nuanced perceptions of teachers of their group formation strategies. Grounded in a constructivist paradigm, this methodology emphasized understanding teachers' lived perceptions through direct engagement and

detailed observations (Creswell, 2014). Data collection was conducted using a combination of semi-structured interviews, lesson observations, and lesson plan analyses, allowing for a comprehensive and in-depth exploration of the research objective.

Participants were purposively selected from both government-aided and private primary schools in Mityana District to ensure diversity in teaching experience, gender, and institutional context. The sample included eight teachers (four from each school type), chosen for their active engagement in group learning pedagogy, thereby providing firsthand insights into effective strategies and classroom practices. To capture learner perspectives, Primary 5 (P5) learners were selected for four focus group discussions (FGDs), with 8–10 learners per group. FGD participants were chosen based on their participation in group learning activities, ensuring the representation of varying academic abilities and social dynamics. This dual-layered sampling approach targeting both teachers and learners enriched the study's depth by triangulating adult pedagogical strategies with children's experiential accounts. To uphold methodological consistency, data collection instruments (interview guides, observation checklists, and lesson plan analysis templates) were reviewed by educational experts for content validity and pilot-tested in a comparable primary school setting. Pilot testing of these instruments in a separate primary school context helped refine their reliability and suitability for the study.

The collected data were analyzed using thematic analysis, an approach that enables the identification and interpretation of recurring patterns and themes within qualitative data (Braun & Clarke, 2006). Interview transcripts and classroom observations were carefully coded, and emerging themes related to group formation strategies were identified. Lesson plan analyses provided additional insights into the planning and execution of group activities by teachers. Ethical considerations were rigorously observed throughout the research process, including obtaining informed consent from participants, maintaining confidentiality, and ensuring voluntary participation. These steps ensured the study's credibility and upheld the ethical standards required for educational research.

RESULTS AND DISCUSSION

Demographic Information

The study achieved a 100% response rate, engaging eight teachers from two selected primary schools in Mityana District: one government-aided primary school (PS1) and one private primary school (PS2). The sample was evenly distributed, with four teachers from each school, including five males and three females, ensuring a balanced gender representation. The inclusion of both government-aided and private schools provided a broader range of teaching practices and perspectives, reflecting variations in school resources, instructional approaches, and administrative support. This diversity enriched the data, allowing for a comprehensive analysis of the group formation strategies employed in different educational settings.

The teachers' qualifications and experience varied, enhancing the depth of the findings. Most participants held a Diploma in Primary Education, while others had a Grade III Teaching Certificate. Experience levels ranged from as little as two years to as much as 27 years, with longer teaching tenures observed in the government-aided school. For instance, PS1 included a male teacher with 27 years of experience, while the private school had younger, less experienced teachers with two to five years of teaching experience. The study also analyzed 32 lesson plans across four core subjects: Mathematics, English, Social Studies, and Science. This analysis provided further insights into how teachers incorporated group formation strategies into their instructional planning. The diverse demographic profile of the participants, combined with the high response rate and varied teaching contexts, strengthens the reliability of the study findings. It offers a robust basis for discussing the effectiveness and challenges of implementing group learning strategies in Ugandan primary schools.

Table 1: Demographics of Teachers

	Category	Subject	Sex	Experience	Highest qualification
Government-aided Primary School (PS1)					
PS1T1	Teacher	Eng.	F	15 years	Diploma in Primary Education
PS1T2	Teacher	Math	M	27 years	Diploma in Primary Education
PS1T3	Teacher	SCI	F	3 years	Grade III Certificate
PS1T4	Teacher	SST	M	6 years	Grade III Certificate
Private Primary School (PS2)					
PS2 T1	Teacher	Eng.	M	5 years	Diploma in Primary Education
PS2T2	Teacher	SST	M	5 years	Grade III Certificate
PS2T3	Teacher	SCI	F	2 years	Grade III Certificate
PS2T4	Teacher	Math	M	2 years	Diploma in Primary Education

STRATEGIES TEACHERS USE IN FORMING GROUPS

The study aimed to explore the strategies used by teachers in forming groups to facilitate effective group learning in selected primary schools. Data collected through classroom observations, interviews, focus group discussions, and lesson plan analyses revealed a variety of group formation strategies employed by teachers. The primary strategies identified included random group formation, mixed-ability grouping, same-ability grouping, size-determined group formation, temporary group formation, special needs-support grouping, and the use of grouping cards.

The study revealed six key group formation strategies employed by teachers in Ugandan primary schools. From FGDs and interviews, teachers frequently utilized a *random group formation strategy* for quick, dynamic activities like impromptu discussions, while the *same-ability grouping formation strategy* was favoured for targeted remedial sessions, particularly in Math and English. Lesson plans showed intentional integration of these strategies, such as same-ability groups for picture-reading tasks in English and random groups for sentence reconstruction. Observations confirmed their implementation, with teachers like PS1T1 using random groups for collaborative English tasks and PS2T1 forming same-ability Math groups for focused skill-building. *Mixed-ability group formation strategy* emerged as another prominent strategy, with teachers deliberately pairing high- and low-achieving learners to foster peer mentoring. Lesson plans in SST and Science highlighted mixed-ability groups for topics like climate and poultry, while classroom observations demonstrated their effectiveness in promoting inclusive problem-solving.

Further analysis of lesson plans and observations underscored the pragmatic use of a *size-oriented group formation strategy*, where teachers formed small groups (6–8 learners) to optimize limited resources, such as textbooks. FGDs revealed that this strategy also minimized distractions, as noted by teachers in Science. *Temporary group formation strategy* was another adaptive strategy, with teachers in Science restructuring groups weekly or for specific tasks, as reflected in lesson plans on mountain formation and poultry field visits. Observations captured their dynamic use. Notably, the *special needs-support group formation strategy* was consistently applied across subjects, as seen in lesson plans for SST and English, where teachers integrated learners with disabilities into all groups. Observations, such as in the Science class, showed peers assisting visually impaired learners, aligning with FGD insights on fostering inclusivity.

Finally, the *grouping cards formation strategy* stood out for its versatility, as teachers, for example in Math used colour-, number-, or letter-coded cards to form random, size-oriented, or mixed-ability groups. Lesson plans detailed their use for tasks like Math problem-solving, while observations demonstrated their efficiency in streamlining group transitions. FGDs highlighted their role in equitable resource distribution, such as in Math groups aligned with textbook availability. Together, these findings from FGDs, lesson plans, and observations illustrate a deliberate yet context-dependent application of group formation strategies, with variations tied to

class size, resources, and learner needs. While some strategies (e.g., random, mixed-ability) were widespread, others (e.g., size-oriented) were underutilized, pointing to opportunities for targeted teacher training and policy support.

Additionally, the data reveals that all the teachers in both schools mentioned that they used the grouping card technique in all six group formation strategies. The teachers used this technique as a means for attaining the kind of group compositions they wanted under the different learning contexts. The technique facilitated the processes of group composition, equal representation, and size determination for both in-class learning activities and remedial sessions after the lesson. In so doing, it also promoted; equitable access to learning materials, optimization of collaborative learning opportunities, and inclusivity in the different groups they formed.

DISCUSSION

The findings of this study highlight a range of strategies employed by teachers in forming groups to facilitate effective group learning in selected primary schools in Uganda. The six primary grouping strategies, random group formation, mixed-ability grouping, same-ability grouping, size-determined group formation, temporary groups, and special needs-support grouping reflect a nuanced approach to facilitating group learning. Each strategy revealed distinct intentions like fostering active participation, enhancing inclusivity, ensuring targeted instruction, and optimizing learner engagement across subjects such as Mathematics, English, Social Studies (SST), and Science.

The qualitative findings revealed profound tensions between pedagogical intentions and classroom realities in Uganda's primary schools. Random group formation strategy's widespread adoption in government schools emerges as a pragmatic response to the overcrowded classrooms documented in MoES (2021) reports, where teachers described using spontaneous groupings as a survival mechanism rather than a deliberate pedagogical choice. This aligns with Kwarikunda et al.'s (2022) observations about resource-driven adaptations, yet creates a paradox: while the strategy enables basic collaborative structures, classroom observations showed it often fails to achieve the intentional peer learning dynamics Allan (2017) identifies as crucial for meaningful social constructivism. The stark contrast between government and private school implementation patterns suggests an institutionalization of this compromise, where systemic constraints override theoretical ideals. Meanwhile, the same-ability group formation strategy presents a different complexity. Its strong association with Mathematics instruction supports Schmidt et al.'s (2017) argument about hierarchical subjects benefiting from targeted skill grouping, with teachers describing how this approach helps them "rescue" struggling learners through focused remediation. However, the emergent gender dimension - where male teachers disproportionately employed this strategy - introduces questions about cultural perceptions of academic intervention that Namusoke & Rukund (2022) hint at but do not fully explore in their Ugandan classroom studies. Teacher interviews revealed unexamined assumptions about "natural" mathematical abilities that may unconsciously influence grouping decisions, suggesting these strategies serve not just pedagogical but also cultural functions in Uganda's educational landscape. Both approaches ultimately demonstrate how teachers navigate the dialectic between Vygotsky's (1978) ideal learning communities and the daily realities of under-resourced classrooms, creating hybrid practices that merit deeper ethnographic exploration.

The qualitative data reveals how Uganda's educational context shapes the implementation and effectiveness of these two distinct grouping approaches. Mixed-ability grouping's conditional success in private schools presents a compelling case of what Kaendler et al. (2019) term "competency-mediated implementation," where teacher skill levels determine pedagogical outcomes. The observed "scaffolding threshold" phenomenon, particularly evident in PS2T4's mathematics class, embodies Eun's (2019) conceptualization of the Zone of Proximal Development in practice, demonstrating how teachers with adequate training and smaller classes can create dynamic peer-learning ecosystems. However, interview data revealed this strategy's fragility - teachers described struggling to

maintain the delicate balance between peer support and dependency, suggesting that without the sustained professional development Kaendler et al. (2019) recommend, and even well-intentioned mixed-ability implementations risk devolving into informal tracking systems.

Conversely, size-oriented grouping emerged as an unintentional innovation born of necessity, exemplifying what Zajda & Zajda (2021) characterize as "pragmatic constructivism" in low-resource settings. While teachers initially adopted this strategy to manage textbook shortages and spatial constraints, classroom observations serendipitously revealed how these resource-driven groupings created ideal conditions for the collaborative skill development Care et al. (2017) advocate. The strategy's inconsistent adoption patterns, however, point to a critical missed opportunity - teacher interviews suggested most educators viewed group sizing as merely logistical rather than pedagogical, unaware of its potential to foster 21st-century skills. This knowledge gap aligns with MoES's (2021) identification of systemic training deficiencies in collaborative learning methodologies. The strategy's most successful implementations occurred when teachers combined intentional group sizing with structured tasks, creating what might be termed "constructive necessity" - where material constraints inadvertently led to pedagogically sound practices.

The qualitative findings reveal nuanced tensions between pedagogical innovation and implementation challenges in Uganda's primary classrooms. Temporary group formation's fluid structure aligns with Braun & Clarke's (2006) dynamic systems approach, as teachers described using short-term groupings to foster adaptability and task-specific collaboration. However, observations revealed an unintended consequence: the emergence of friendship cliques that occasionally undermined peer learning. This suggests that while the strategy's flexibility supports Allan's (2017) vision of organic social learning, it requires structured facilitation to prevent exclusionary dynamics—a refinement teacher acknowledged needing more training to address.

Special needs-support grouping powerfully embodied Vygotsky's (1978) principles of social inclusion, with observations showing how peer-assisted learning benefited both disabled and non-disabled learners. Yet its reliance on individual teacher initiative—rather than institutionalized support—echoes Mendoza & Heymann's (2022) concerns about sustainability in under-resourced settings. Teachers expressed frustration over the lack of systemic training or materials to guide inclusive grouping, forcing them to improvise solutions. This ad hoc implementation, while commendable, risks inconsistency, particularly in schools with high teacher turnover or limited special education expertise.

Finally, grouping cards emerged as a versatile "meta-strategy," bridging theoretical ideals and classroom pragmatism. Their structured yet flexible design resonates with Creswell's (2014) mixed-methods philosophy, enabling teachers to seamlessly shift between random, ability-based, and needs-sensitive groupings. This low-tech innovation directly answers McLeod's (2018) call for psychologically informed yet accessible classroom tools, proving particularly effective in resource-constrained environments. However, its success depended heavily on teacher creativity—some educators used cards merely for logistical grouping, while others leveraged them for deeper pedagogical aims like differentiated instruction. This variation underscores the need for targeted professional development to maximize the tool's potential.

Together, these strategies highlight a broader theme: Ugandan teachers are adept at *adaptive innovation*, blending theory with contextual necessity. Yet without systemic support—such as formal training on group dynamics or inclusive practices—these approaches remain vulnerable to inconsistency, reinforcing Mendoza & Heymann's (2022) call for structural investments in teacher capacity-building.

Another notable dimension of the findings is the variation in the prevalence of the strategies. Strategies such as the size-determined, temporary, and special needs-support grouping strategies, emerged as more frequently mentioned and more practical among teachers. Conversely, strategies like random group formation, same-ability group

formation, size-determined group formation, temporary group formation, special needs-support group formation strategy and mixed-ability group formation, while theoretically rich in promoting social constructivism (Vygotsky, 1978) and peer-assisted learning (Johnson & Johnson, 2018), were reportedly unevenly used for group formation in the four subjects and among the female and male teachers. This discrepancy suggested that factors such as class size, resource availability, and the complexity of subject matter influence the teachers' choice of grouping strategies. For instance, size-determined grouping strategy was favoured in settings where ensuring equitable resource distribution was paramount, whereas same-ability and mixed-ability formations were more selectively applied when addressing varying academic needs or fostering inclusivity. Such adaptive choices align with research emphasizing that effective group learning strategies must be context-sensitive, responsive to classroom dynamics, and considerate of resource constraints (Baines et al., 2022; Tomlinson, 2018).

The variety of reasons teachers provided for employing distinct group formation strategies reflects the intricate balancing act required to address learners' academic and social diversity. By choosing strategies to enhance tailored instruction and targeted support, teachers sought to meet the individual learning needs within their classrooms, aligning with differentiation principles that emphasize adapting instruction to varying readiness levels and interests (Tomlinson, 2018). Moreover, fostering peer-supported learning among learners with diverse academic and social abilities resonates with Vygotsky's (1978) perspective that collective knowledge construction and scaffolded interactions within groups enable learners to reach higher levels of understanding. Ensuring balanced participation and supporting "time takers" with assistance from more proficient classmates aligns with cooperative learning frameworks that underscore the importance of structured roles and mutual accountability to promote active engagement (Johnson & Johnson, 2018). Similarly, creating inclusive, supportive environments that accommodate learners with special needs echoes research by Namukwaya et al. (2020), highlighting that deliberate group composition can facilitate not only cognitive development but also empathy, social cohesion, and greater equity in the classroom.

Critically, these strategies were not applied together but emerged as adaptive responses to specific classroom contexts, including limited resources, the presence of learners with special needs, and the nature of the group tasks at hand. In schools facing resource constraints, teachers' selection of group formation strategies was driven by the necessity to optimize available materials and ensure that all learners could fully participate in hands-on activities—particularly in resource-intensive subjects like Science and social studies (Casserly et al., 2019). Additionally, varying academic abilities and large groups that required breaking down into manageable units further shaped teachers' decisions, reflecting the flexible use of grouping techniques that prioritize interaction quality and learner engagement (Baines et al., 2022). The application of these strategies in dynamic, context-dependent ways underscores that successful group learning experiences are grounded in teachers' situational judgments and adaptive practices, informed by ongoing reflections on learners' evolving needs, classroom conditions, and resource availability.

The teachers' unanimous adoption of the grouping card technique underscores its efficacy and versatility as a foundational tool to achieve desired group compositions under varying instructional and contextual demands. By assigning learners to groups based on simple, readily distinguishable attributes such as colours, letters, or numbers, teachers streamlined the process of assembling groups that align with their pedagogical objectives—be it forming same-ability clusters for targeted instruction or creating temporary, mixed-ability groups to tackle specific tasks. Consistent with Olaniyan and Adepoju's (2019) findings, this approach ensured fairness and transparency in group formation, mitigating potential biases while simplifying the complexities of balancing academic abilities, personalities, and resource availability.

Beyond simply facilitating equitable group formation, the grouping card technique also contributed to optimizing learning opportunities and inclusive participation. Teachers noted that this

method allowed them to quickly establish groups with equal representation, enabling more efficient use of available materials and promoting balanced peer interactions. Such conditions resonate with Mergiwati et al. (2024), who found that structured and easily adaptable grouping strategies enhance learners' collaborative engagement, broaden their social networks, and ultimately improve the quality of peer-assisted learning. By consistently employing the grouping card technique across various group formation strategies, teachers effectively created an adaptable framework that accommodated both the evolving needs of their learners and ensured that all learners regardless of background or ability benefited from meaningful, group learning experiences.

THEORETICAL IMPLICATIONS

The findings of this study offer significant contributions to educational theory by contextualizing group learning frameworks within Uganda's resource-constrained primary schools. The data reveals how teachers adapt Vygotsky's (1978) social constructivist principles to their realities, creating what might be termed "survival scaffolding" - where the ideal conditions for peer learning are compromised by overcrowded classrooms and material shortages. The stark contrast between mixed-ability grouping's success in well-resourced private schools versus its near absence in government schools supports Kaendler et al.'s (2019) argument about the critical role of teacher competencies and classroom conditions in implementing theoretical models. Furthermore, the gendered implementation of same-ability grouping in Mathematics suggests that cultural factors may unconsciously shape pedagogical decisions, adding a new dimension to Allan's (2017) social learning theory. These findings collectively argue for a more nuanced understanding of group learning theories that account for contextual constraints in resource-constrained countries.

PRACTICAL APPLICATIONS

The study's findings suggest several concrete applications for improving group learning practices in similar educational contexts. The demonstrated effectiveness of grouping cards as a low-cost, flexible tool points to their potential for wider adoption, particularly when combined with targeted teacher training on their pedagogical uses beyond simple classroom management. The special needs support strategy, while currently dependent on individual teacher initiative, provides a model for developing more systematic inclusive education approaches that could be scaled with proper institutional support. The unexpected benefits observed in size-oriented grouping - where resource constraints inadvertently created ideal conditions for collaborative skill development - suggest that teacher training programs should help educators recognize and intentionally harness such pedagogical opportunities. These practical applications highlight the need for professional development that moves beyond theoretical ideals to address the real-world challenges teachers face in Ugandan classrooms.

LIMITATIONS OF THE STUDY

While this research provides valuable insights into group formation strategies in Ugandan primary schools, several limitations must be acknowledged to contextualize the findings. The study's focus on selected schools within Mityana District, while offering rich qualitative data, may limit the transferability of results to other regions with different socioeconomic or educational conditions. As Kwarikunda et al. (2022) have noted in similar contexts, localized studies risk overlooking regional variations in resource allocation and teaching practices that could significantly influence group learning implementation. Future research should expand the geographical scope to assess whether these findings hold across Uganda's diverse educational landscape.

The reliance on self-reported data from teachers and learners, though triangulated with observations, remains susceptible to social desirability bias, particularly regarding sensitive topics like inclusive practices. While Braun and Clarke's (2006) thematic analysis helped mitigate some subjectivity, the study lacked quantitative measures to validate reported behaviours against actual classroom practices. Incorporating tools like standardized observation protocols or learning outcome metrics, as suggested by Care et al. (2017), could strengthen future investigations of group learning efficacy.

The qualitative design, while ideal for exploring pedagogical perceptions, cannot establish causal relationships between specific grouping strategies and academic outcomes. For instance, while teachers reported benefits of mixed-ability grouping, the absence of pre/post-assessment data makes it impossible to determine its actual impact on learning gains—a limitation also identified in Schmidt et al.'s (2017) work on collaborative learning. A mixed-methods approach would better quantify these relationships while preserving the nuanced understandings captured in this study.

Most critically, the cross-sectional nature of the research provides only a snapshot of group learning practices, leaving unanswered questions about their long-term effects. As Mendoza and Heymann (2022) emphasize in their analysis of educational interventions, longitudinal studies are essential to assess whether observed benefits (e.g., peer scaffolding in special needs-support groups) translate into sustained academic or social development. Tracking learner outcomes over multiple years could reveal whether teachers' adaptive strategies actually bridge the gap between Vygotsky's (1978) ideals and classroom realities over time.

RECOMMENDATIONS

To address the challenges identified in this study, teacher education programs should prioritize context-sensitive professional development that equips educators with practical strategies for diverse classroom realities. Government school teachers, who often face overcrowded classrooms, require targeted training in effective random and size-oriented grouping techniques, along with methods to adapt grouping cards for large-class settings. Private school teachers, benefiting from smaller class sizes, would benefit from advanced training in mixed-ability group facilitation and scaffolding techniques aligned with Vygotsky's principles. Such differentiated training should be complemented by systemic support for inclusive practices, including standardized guidelines from the Ministry of Education for special needs-support grouping and locally adaptable tools to ensure all learners can participate meaningfully in group work.

Technology integration should be approached with careful consideration of local feasibility, focusing on low-cost, sustainable solutions that enhance rather than replace existing effective practices. SMS-based group coordination and simple digital tools could supplement proven methods like grouping cards, but their implementation must be piloted and adapted to schools' infrastructure realities. Simultaneously, schools should establish practice-based professional learning communities where teachers can engage in peer observation, share successful adaptations, and mentor colleagues in group facilitation techniques. These collaborative structures would help institutionalize the innovative approaches that emerged in the study while addressing the current reliance on individual teacher initiative.

Finally, research-informed policy development is essential to bridge the gap between theory and practice. The National Curriculum Development Centre should commission mixed-methods studies to evaluate the impact of different grouping strategies on learning outcomes, including longitudinal research to assess long-term effects. Policy guidelines should be regularly updated based on emerging classroom evidence, with a focus on resource-smart implementation that maximizes learning within existing constraints. By combining differentiated teacher training, systemic support for inclusion, feasible technology integration, professional collaboration, and evidence-based policy, Uganda can realize the full potential of group learning pedagogy across its diverse educational contexts. This comprehensive approach would address both the immediate challenges identified in the study and the broader need for sustainable improvements in collaborative learning practices.

CONCLUSION

This study provides a comprehensive exploration of the strategies employed by teachers in forming groups to facilitate effective group learning in primary schools in Uganda. The findings demonstrate that a variety of group formation strategies—such as mixed-ability grouping, same-ability grouping, size-determined grouping, and special needs-support grouping—are employed by teachers to meet diverse learner needs and enhance group learning experiences. However, the study also

identified significant gaps in teacher training and resource availability, which limit the consistent application of these strategies. Addressing these gaps through targeted professional development and support can enhance the implementation of group learning pedagogy, ultimately improving learner engagement and learning outcomes.

The results have important implications for policymakers, educational administrators, and teacher education institutions. The evidence highlights the need for integrating structured professional development programs focused on effective group formation strategies into teacher training curricula. Policymakers should consider revising educational guidelines to include clear, standardized frameworks for group learning that account for diverse classroom contexts and learner needs. Educational administrators are encouraged to invest in resources and support systems, including classroom materials and technology, to facilitate more effective group formation and management. Enhancing teachers' capabilities in group learning pedagogy will not only improve classroom interactions but also contribute to achieving broader educational goals, such as improved learner engagement and academic performance.

While this study offers valuable insights into the strategies used by teachers for group formation, further research is needed to explore the long-term impact of these strategies on academic achievement and social skill development among primary school learners. Future studies could employ a longitudinal design to track changes in learner outcomes over time, providing more robust evidence of the effectiveness of various grouping methods. Additionally, quantitative research could help measure the direct impact of specific group formation strategies on learning outcomes, while cross-cultural studies may offer insights into how different educational contexts influence the implementation of group learning pedagogy. Addressing these areas in future research would provide a deeper understanding of how to optimize group learning practices and support educational advancement in diverse settings.

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