Collaborative Learning: Perceptions of Teacher Educators

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Abstract

This study focused on collaborative learning (CL) techniques and whether and how teacher educators implement them in their teaching practices. Their general perception of the effectiveness of CL techniques, how they choose a particular technique over another, and the challenges in implementing these techniques are discussed. A questionnaire with mixed items was developed and utilized for data collection and responses from 28 teacher educators were computed using a simple percentage method for closed items and content analysis in the case of open-ended items. The study identified significant challenges in implementing collaborative learning (CL) in teacher training. This study shed light on the present practices of CL in teacher education programs and how teacher educators' pedagogical orientation towards CL techniques is important so that our pre-service teachers can learn these from their teachers and can implement these techniques effectively in their future classes.

Keywords: *Collaborative Learning (CL), Collaborative Learning Techniques, Teacher Educators, Pre-service Teacher Education, CL and NEP (2020), CL and NCFTE (2009)*

Concept of collaborative learning

In the evolving landscape of education, the call for collaborative learning has grown increasingly resonant. This pedagogical approach, emphasizing shared learning experiences, teamwork, and collective problem-solving, is not a recent phenomenon. Its roots run deep, echoing in ancient practices like the Indian Gurukul system (around 1500-500 BCE), where disciples lived and learned together, embodying collaboration and cooperation. Similarly, in Western educational thought, the seeds of CL were sown in the mid-20th century, influenced by burgeoning theories of personality development, group dynamics, and social cognitive mechanisms. Luminaries like Dewey, with his advocacy for social learning, Lewin's social interdependence theory (Lewin, 1945, p. 18), Piaget's emphasis on social interaction for intellectual development (Piaget, 2001, p. 98-99), and Vygotsky's view of learning as a socially mediated process (Vygotsky, 1978, p. 101-102) laid the groundwork for CL's emergence. By the late 1980s, CL had evolved further, embracing technology with the advent of Computer-Supported Collaborative Learning, thereby expanding its reach and applications.

Despite its long history, CL is characterized by diverse interpretations and implementations. While some scholars define it narrowly as learning in pairs or small groups, others adopt a broader perspective, encompassing larger communities (Dillenbourg, 1999; Johnson & Johnson, 2002). This definitional variance poses a challenge, particularly in fostering positive group dynamics, a crucial element for effective CL regardless of group size (Davidson, 2012, p. 16). Effective CL hinges on well-managed group interactions where each member actively contributes to

and benefits from the collective learning process.

Further complicating the conceptual landscape is the relationship between collaborative and cooperative learning. These terms are often used interchangeably, sometimes positioned as two ends of a spectrum, with cooperative learning representing a more structured approach and collaborative learning a less structured one. However, some scholars argue for a clear distinction between the two, with cooperative learning grounded in the authority of individualism and competitiveness, while collaborative learning draws upon the authority of shared wisdom (Bruffee, 1995, p. 92). Despite these nuances, it's important to recognize that cooperative and collaborative learning share more commonalities than differences. Both emphasize peer interaction and active engagement with intellectual challenges, contrasting sharply with traditional teacher-centered lectures. Furthermore, both are inherently student-centered and rooted in shared theoretical assumptions: learning as an active, social, and constructive process; the importance of learner diversity; the significance of rich learning contexts; and the recognition of the emotional and personal dimensions of learning (Cole & Vygotsky, 1978, p. 20–22; Dillenbourg, 1999; Faroun, 2020).

Interestingly, in the realm of computer-supported learning environments, the distinction between collaborative and cooperative learning appears to blur. This convergence highlights the adaptable nature of collaborative learning, making it suitable for diverse educational settings and learner needs. Smith and MacGregor (1992, p. 14-25) capture this essence, emphasizing the infinite possibilities of CL and urging educators to embrace continuous innovation in its implementation. They offer a range of techniques, including problem-based learning, cooperative activities, and learning communities (Smith and MacGregor, 1992, p. 16), showcasing the versatility of this pedagogical approach.

Policy context

The National Education Policy (NEP) 2020 advocates for interactive classroom sessions with collaborative and exploratory activities to enhance critical skills among learners (NEP, 2020, p. 13). It encourages collaboration among parents, teachers, and stakeholders to improve the school environment, giving teachers more autonomy to select instructional methods that cater to diverse student needs (NEP, 2020, p. 21). Furthermore, the NEP 2020 envisions the use of collaborative learning techniques in B.Ed. programs to better prepare future teachers (NEP, 2020, p. 23).

Similarly, the National Curriculum Framework for Teacher Education (NCFTE) 2009 highlights the necessity for teachers to work collaboratively, promoting self-criticism and reflective practices among prospective teachers (NCFTE, 2009, p. 24). It recommends providing ample opportunities for teacher trainees to engage with learners and work in groups, fostering the development of collaborative skills (NCFTE, 2009, p. 54).

Despite these policy recommendations, there is a gap between the intended collaborative learning practices and their implementation in teacher education programs, particularly in regions like Himachal Pradesh. This study aims to explore the perspectives of teacher educators at distance education institutes regarding collaborative learning. It seeks to identify the barriers to effective implementation and propose strategies to enhance the practice of CL in teacher education.

Review of existing literature

The review of existing literature validates the importance of studying teacher educators' attitudes toward collaborative learning techniques. Research by Umbach and Wawrzynski (2005) supports the idea that active and cooperative teaching techniques lead to heightened student engagement and improved learning outcomes. Educators increasingly favour

collaborative learning methods due to their efficacy in fostering active participation and enhancing student retention (Lau, 2003). However, studies also highlight challenges in implementing these techniques. Ruys et al. (2010) found that teacher educators rarely use collaborative learning techniques, and Thanh (2011) identified barriers such as large class sizes and workload division.

Despite these challenges, Pazzi et al. (2023) noted that teachers are generally willing to implement collaborative learning, though certain techniques like Pyramid and Jigsaw are less frequently used. The study underscores the need for evidence-based teacher training and support to design and implement quality collaborative learning environments.

In conclusion, the pedagogical orientation of teacher educators towards collaborative learning techniques is crucial for pre-service teachers to learn and implement these techniques effectively in their future classes. The challenges faced by teacher educators in implementing collaborative learning techniques must be addressed through evidence-based teacher training and support to design and implement quality learning environments (Ruys et al., 2010; Thanh, 2011; Pazzi et al., 2023).

Rationale of the study

This study aims to explore the attitudes and practices of teacher educators in Himachal Pradesh towards collaborative learning techniques. Given the theoretical support for collaborative learning and its endorsement in national policies, it is crucial to understand the practical challenges and opportunities in implementing these techniques. This study specifically targets teacher educators in Himachal Pradesh due to their pivotal role in shaping the pedagogical practices of future teachers. As these future teachers will directly impact the learning experiences of children in the region, it is crucial to equip them with a diverse repertoire of teaching methods, including collaborative learning techniques.

By focusing on teacher educators, this study aims to understand their current practices and perceptions regarding collaborative learning. This understanding can inform the development of targeted professional development programs and interventions that enhance teacher educators' capacity to effectively model, teach, and promote collaborative learning approaches among pre-service teachers. Ultimately, this ripple effect can contribute to a more engaging, interactive, and effective learning environment for students in Himachal Pradesh.

Research Objectives

The current study was conducted with the following aims in mind:

1. To find out the perception of teacher educators towards the use of collaborative learning in classrooms.
2. To find out perceived barriers to the implementation of collaborative learning in classrooms.

Methodology

Method: A descriptive survey design was used to achieve the above-said objectives of the study. This design is particularly responsive to the needs of the study as it helps to systematically describe the state of collaborative learning (CL) among teacher educators in Himachal Pradesh. By using a descriptive approach, the study aims to capture the current practices, perspectives, and barriers associated with use of collaborative learning in classrooms in a comprehensive manner.

Population and Sample: The target population for this study comprised teacher educators in Himachal Pradesh, India. Due to the difficulty of accessing a comprehensive list of all teacher educators in the state, a convenience sampling method was employed. The researcher initially distributed the survey questionnaire to known teacher

educators within their personal WhatsApp network, located in Himachal Pradesh. These individuals were then encouraged to share the questionnaire with other teacher educators within their professional contacts, expanding the reach of the survey. The use of WhatsApp for distribution allowed for efficient and rapid collection of data, reflecting a diverse yet specific segment of the target population. Within five days, 40 completed responses were received. Among these, 9 respondents were not familiar with the concept of collaborative learning, 3 responses were not filled and were not providing any insight, so their responses were not considered for the analysis. Hence, the final sample for this study comprised of 28 teacher educators in Himachal Pradesh. The majority of these respondents were female, making up 86 per cent of the total, while 14 per cent were male. In terms of teaching experience, 58 per cent had more than 5 years of experience, 18 per cent had between 3 and 5 years, and the remaining 25 per cent had less than 3 years of experience. It is important to acknowledge that this convenience sampling method may introduce bias, as the sample is likely to reflect the characteristics and perspectives of the researcher's network and those within close social proximity. Also, the findings of this study may not be applicable to the entire population of teacher educators in Himachal Pradesh. However, they offer valuable initial insights that can inform further research.

Tools and data collection: A survey questionnaire having mixed items was prepared and converted into Google Forms by one of the researchers while the other checked for its content validity in the context of the study.

Questionnaire Content

It was divided into the following two sections

- **Section 1: Respondent Demographics**

This section gathered demographic information, including age, gender, teaching experience (categorized as 3 years to 5+ years), and courses taught.

- **Section 2: Collaborative Learning Practices and Perceptions**

This section focused on participants' experiences and perspectives on collaborative learning, having the following items

- Are you familiar with the concept of collaborative learning? (close-ended)
- Do you feel CL is beneficial for improving classroom learning? (open-ended)
- Have you ever used CL in the classroom? (close-ended)
- What is your experience of using CL in the classroom? Share one instance of using CL. (open-ended)
- What are some barriers to using CL in the classroom? (open-ended)

Analysis of Data

Close-ended items were analyzed using a simple percentage method and for open-ended questions, thematic analysis was used. After the final analysis the results were discussed with another researcher from the same field of research who was not a part of the study, to ensure the consistency in generated themes. The final result is depicted below.

Result

Objective 1: Perception of teacher educators towards the use of collaborative learning in classrooms

w.r.t perception towards the benefit of CL in improving classroom learning

All the teacher educators (100 %) agreed that collaborative learning improves students' learning. Teaching experience-wise variations were not found among teacher educators towards the perceived effectiveness of CL in improving students' learning.

w.r.t Practice of CL in classrooms

82 per cent (23 teacher educators) confirmed using CL in the classroom, while

18 per cent (5 teacher educators) were on "maybe" status and no one reported not using it.

Teaching experience-wise distribution of practicing CL in the classroom is given in Figure- 1

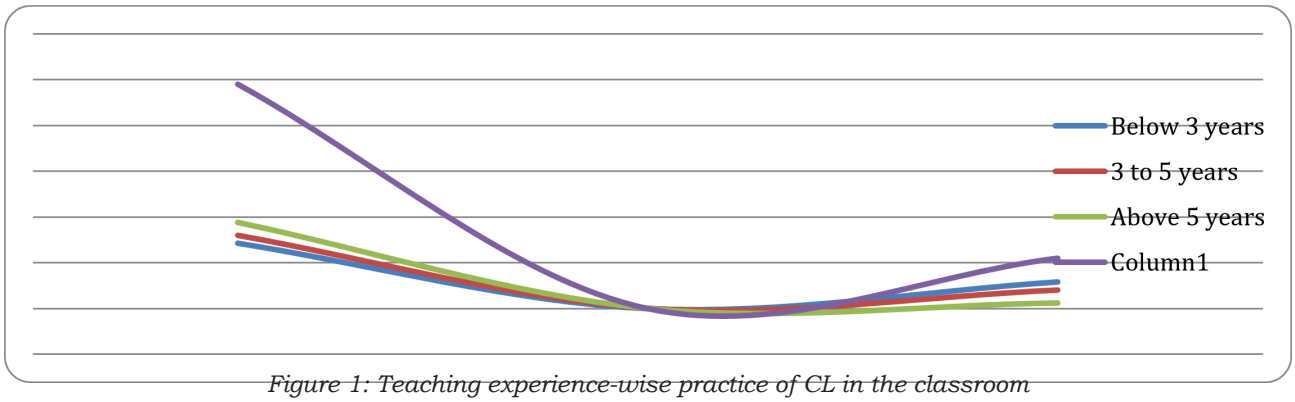

Figure 1: Teaching experience-wise practice of CL in the classroom

w.r.t Experience of using CL in the classroom

The result provides the analysis of content in the following two main themes:

Theme 1: preferred CL technique and

Theme 2: the reason for choosing CL technique

Theme 1: Preferred CL techniques

The analysis revealed six subthemes representing the collaborative learning techniques preferred by the teacher educators. These are T11- Discussion, T12-Brainstorming, T13- Think-Pair-Share, T14- Team-Pair-Solo, T15- Simulation, T16- Jigsaw emerged from content analysis. Further Maximum teacher educators used discussion (82%) and brainstorming (75%) techniques for classroom teaching. Some teacher educators also used the Think-pair-share (29%) technique of collaborative learning. Techniques like Team-Pair-Solo, Simulation, Jigsaw were also preferred by less but equal number (4%) of educators in their classroom teaching (Figure-4)

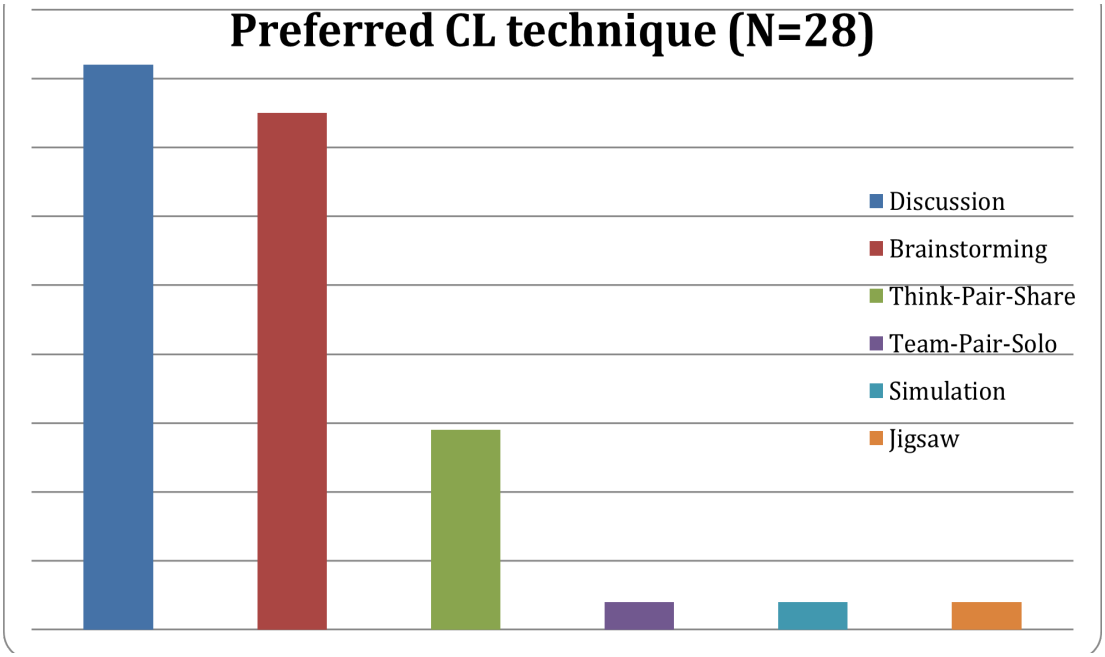

Figure 4: Preferred CL technique

The distribution of preferred techniques according to the teaching experience of the teacher educators is illustrated in Figure 4A:

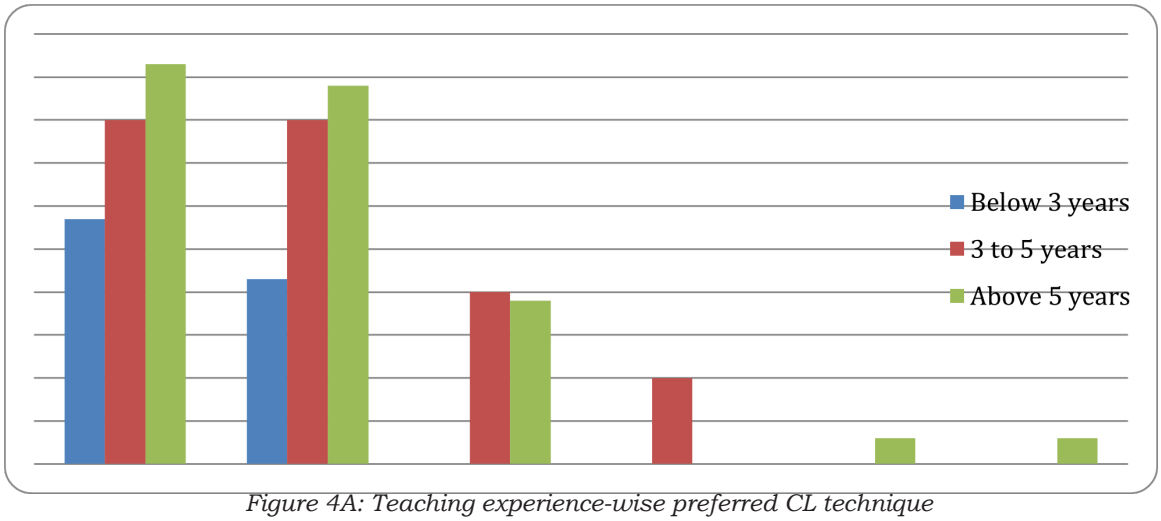

Figure 4A: Teaching experience-wise preferred CL technique

Theme 2: Reason for preferring one technique over another

From the experience they shared, five subthemes i.e., T21- Enhance Student Engagement, T22- Holistic Skill Development, T23- Strengthen deeper learning, T24- Ease of Use and T25: Social Development and Confidence emerged. These are shown in the following Table 2 with codes and examples

Table 2: Reason for preferring technique

Sub Theme	Codes	Example Responses
T21: Enhance Student Engagement	Promotes engagement and better learning outcomes	"Students become more involved in the teaching-learning process."
	Enhances teamwork, fosters group learning, encourages healthy competition	"This type of learning is suitable…as it enhances active participation."
T22: Holistic Skill Development	Encourages creativity, develops critical thinking, improves analytical thinking	"Brainstorming helps them to think creatively. I have used this technique many times in my class to improve the analytical thinking and critical thinking of my students."
	Enhances communication, Prepares for real-life scenarios	"Discussion helps students to develop their communication skills and also prepare them for real life."
	Strengthens leadership skills, promotes self-management, enhances thinking	"Help in strengthening a good level of thinking and ensure the development of communication skills, leadership skills, and self-management skills."

T23: Strengthen Deeper Learning	Enhances problem-solving abilities, develops intellectual capacity	"This helps the students in enhancing their intellectual ability as well as problem-solving ability."
	encourages deeper reflection, promotes critical analysis	"These techniques help students to think deeply about the subject matter and reflect on their learning process."
	Supports understanding of complex concepts, facilitates knowledge integration	"Techniques like discussion and brainstorming help students integrate various concepts and develop a deeper understanding of the subject matter."
T24: Ease Of Use	Easy implementation, classroom-friendly	"These techniques are convenient to do in the classroom."
	Facilitates online interaction, adapts to online platforms	"We can try to share their experiences as well as their thoughts and knowledge on online platforms like Zoom, Meet, and Google Classroom."
	Ensures individual participation, classroom interaction	"If I talk about offline mode, we can ensure their individual participation."
T25: Social Dependence And Confidence	Enhances social interaction, boosts self-esteem and confidence	"Teamwork by the group members makes them confident and socially dependent."
	Encourages collaboration, develops interpersonal skills	"Collaborative techniques help students improve their social skills and ability to work effectively with others."

Objective 2: Perceived barriers to the implementation of collaborative learning in classrooms

The following six themes emerged after the analysis of content. These are Theme 1: Constraints Posed by Time Duration of Class, Theme 2: Readiness and Motivation of Students, Theme 3: Inadequacy of Training and Competency, Theme 4: Managing Group Dynamics, Theme 5: Workload, Theme 6: Infrastructure and Resources. Themes/codes/examples are given in the following table.

Table 3: Barriers to using CL in the classroom

Theme	Code	Example Responses
Th1: Constraints Posed By Time Duration Of Class	Time consumption	"It is time-consuming and sometimes acts as a barrier in completing the syllabus in time."
	Lengthy syllabus	"Lengthy syllabus can be a barrier, as it limits the time available for collaborative activities."

Th2: Readiness And Motivation Of Students	Lack of readiness	"Lack of readiness, lack of confidence, and lack of good communication skills."
	Lack of motivation	"I found students and teachers have a lack of interest and lack of open-mindedness."
Th3: Inadequacy Of Training And Competency	Insufficient training	"…for me, lack of proper training is a challenge in using it."
	Competency issues, poor planning	"Inadequacy of training and competency"," Sometimes not able to achieve desired objectives if not planned properly or in advance"
Th4: Managing Group Dynamics	Dominance by some students	"Some students or a group may dominate the discussion."
	Group conflicts	"Because of many students with different thinking abilities, there are always conflicts and disagreements."
Th5: Workload	Workload	"The workload is a significant barrier, making it challenging to implement collaborative learning effectively."
Th6: Infrastructure And Resources	Lack of infrastructure	"Physical infrastructure is not proper for conducting group activities. ."
	Technology barriers	"Technology barriers, communication barriers are there specially in online mode..."

Discussion of result

The current study provides an insightful analysis of teacher educators' perceptions and practices regarding collaborative learning (CL) techniques in classrooms. The findings align with previous research, highlighting both the benefits and challenges associated with the implementation of CL methods.

Perception Towards the Benefit of CL in Improving Classroom Learning

All participating teacher educators unanimously agreed that collaborative learning improves student learning. This consensus reinforces the findings from Lau (2003) and Umbach and Wawrzynski (2005), who emphasized the effectiveness of active and cooperative teaching methods in enhancing student engagement and learning outcomes. The unanimity among educators in recognizing the value of CL suggests a strong acknowledgement of its role in fostering a more interactive and engaging learning environment, which is crucial for student retention and deeper understanding. Importantly, no significant teaching experience-wise variations were found in perceived effectiveness, indicating that both novice and experienced educators equally appreciate the benefits of CL

The practice of CL in Classrooms

The study revealed that a significant majority (82%) of teacher educators actively use CL

in their classrooms, with none reporting complete non-use. This high adoption rate contrasts with the findings by Ruys et al. (2010), who noted the infrequent use of CL techniques by teacher educators. This discrepancy may indicate a growing trend towards the acceptance and integration of collaborative methods in educational practices. However, the 18 per cent of educators who were uncertain about their use of CL ("maybe" status) suggests that while many educators recognize the benefits, some still face uncertainties or barriers in their consistent application. Addressing these barriers could further increase the effective use of CL techniques.

Experience-wise comparisons indicated that more experienced educators (with over five years of teaching experience) were more likely to implement CL techniques consistently compared to their less experienced counterparts. This trend suggests that experience and familiarity with classroom dynamics may play a role in the confident application of collaborative methods.

Experience of Using CL in Classrooms

The analysis highlighted two primary themes: preferred CL techniques and reasons for choosing specific techniques. The study identified six preferred CL techniques among teacher educators — discussion, brainstorming, think-pair-share, team-pair-solo, simulation, and jigsaw. Discussion and brainstorming were the most commonly used techniques, supporting Pazzi et al. (2023)'s findings that these methods are favored due to their simplicity and effectiveness in promoting student engagement. Techniques like team-pair-solo, simulation, and jigsaw, although less frequently used, still play a crucial role in diversifying instructional methods and catering to different learning styles.

The reasons for preferring certain CL techniques over others were categorized into five subthemes — enhancing student engagement, holistic skill development, strengthening deeper learning, ease of use, and social dependence and confidence. Techniques that promote active participation and teamwork were highly valued, consistent with Umbach and Wawrzynski's (2005) emphasis on active learning environments. CL techniques were also praised for fostering creativity, critical thinking, and communication skills, aligning with findings by Thanh (2011) on the comprehensive benefits of collaborative methods. The ability of CL techniques to enhance problem-solving abilities and intellectual capacity underscores their role in promoting deeper understanding and critical analysis of subject matter. The adaptability of CL techniques for both online and offline settings highlight their practical utility, supporting Pazzi et al. (2023) call for evidence-based teacher training to facilitate effective implementation. Additionally, the development of social skills and confidence through collaborative activities further validates the pedagogical value of these methods in preparing students for real-life interactions and teamwork.

Experience-wise analysis revealed that educators with more teaching experience tended to prefer techniques such as discussion and brainstorming, possibly due to their straightforward implementation and familiarity. In contrast, less experienced educators showed a more varied preference for techniques like think-pair-share and simulation, which might be attributed to recent training and exposure to diverse methods during their professional development.

Perceived Barriers to the Implementation of Collaborative Learning in Classrooms

The study also identified six major themes regarding perceived barriers to the implementation of CL techniques: constraints posed by the time duration of the class, readiness and motivation of students, the inadequacy of training and competency,

managing group dynamics, workload, and infrastructure and resources

1. **Constraints posed by Time Duration of Class**: Many educators highlighted time consumption and the challenge of completing a lengthy syllabus as significant barriers. This issue is echoed in the literature, where the intensive time requirement of CL activities is seen as a hindrance to their broader adoption (Thanh, 2011).
2. **Readiness and Motivation of Students**: A lack of student readiness and motivation was noted as a barrier, with educators citing students' lack of confidence, communication skills, and open-mindedness. This aligns with previous studies indicating that student preparedness and interest are critical factors in the successful implementation of collaborative learning (Ruys et al., 2010).
3. **Inadequacy of Training and Competency**: Insufficient training and competency issues were major barriers, as highlighted by educators who felt they lacked the proper training to implement CL techniques effectively. This is consistent with findings by Ruys et al. (2010) and Pazzi et al. (2023), emphasizing the need for comprehensive training programs to equip educators with the necessary skills and knowledge.
4. **Managing Group Dynamics**: Managing group dynamics, including dominance by some students and group conflicts, was another significant barrier. Educators noted that varying abilities and personalities within groups often led to conflicts and unequal participation, reflecting the complexities of facilitating effective group work (Thanh, 2011).
5. **Workload**: The workload associated with preparing and managing CL activities was cited as a barrier, with educators indicating that the additional effort required made it challenging to implement these techniques regularly. This aligns with the general sentiment in the literature that workload considerations can deter educators from adopting innovative teaching methods (Pazzi et al., 2023).
6. **Infrastructure and Resources**: Finally, inadequate infrastructure and resources, including physical space and technology barriers, were significant obstacles. Educators highlighted the need for proper facilities and technological support to conduct group activities effectively, especially in online settings. This finding is consistent with studies that identify the need for supportive infrastructure to facilitate collaborative learning (Ruys et al., 2010).

The findings underscore the importance of supporting teacher educators in overcoming barriers to implementing CL techniques, such as large class sizes and workload division, as noted by Thanh (2011). Providing targeted training and resources can help educators design and manage collaborative activities more effectively, ensuring that pre-service teachers are well-equipped to use these methods in their future classrooms. Teachers face challenges in classrooms. Some challenges like lack of time can be easily tackled with the choice of proper CL technique. In-class or out-of-class activities can be helpful if explored. Moreover, the study highlights the need for continuous professional development and the sharing of best practices among educators to enhance the implementation of diverse CL techniques. By addressing the challenges identified in this and previous studies (Ruys et al., 2010; Pazzi et al., 2023), educational institutions can foster a more collaborative and engaging learning environment, ultimately benefiting both educators and students.

Conclusion

Collaborative learning is an activity done in groups of various sizes (depending on the nature of content to be learned) intended to learn or understand a concept. Maintaining group dynamics is important while conducting any CL session. While collaborative learning is not prevalent in many institutions, it helps to satisfy many

goals when planned carefully. It helps learners to become constructively and actively involved in coursework topics, to feel responsible for studying, and to improve the spirit of teamwork among the participants. As these techniques can provide a good base for an inclusive learning situation, teachers must be explorative and experimental to use these teaching techniques. Its evaluation must be explored by teachers for knowledge creation. To overcome barriers to collaborative learning, teacher educators can ensure thorough preparation and planning, developing a deep understanding of various techniques, and identifying suitable content. Effective classroom management involves ensuring equal student participation and addressing the needs of shy or reluctant students. Allocating specific sessions outside the regular timetable can alleviate timing constraints. Understanding student interests and individual differences boosts motivation and engagement while emphasizing communication skills builds confidence. Providing high-quality materials and creating a language-rich environment is crucial. The continual motivation of students and teachers through positive reinforcement and proactive adoption of techniques fosters a supportive atmosphere. Institutional support through regular workshops, training, and curriculum revisions integrates collaborative learning as a core component. Promoting collaborative learning creatively ensures holistic development, and teacher educators should commit to consistent implementation and continuous improvement. Dedicated weekly sessions for collaborative learning provide ample focus and time for these activities, leading to enhanced educational outcomes and overall student development.

In conclusion, the study contributes to the growing body of literature on collaborative learning by providing empirical evidence of its perceived benefits, preferred techniques, and practical challenges. By addressing these insights through targeted interventions, educators can enhance the quality and effectiveness of collaborative learning in classrooms. The use of such techniques in classrooms will give prospective teachers exposure to various teaching techniques that will help them in future.

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