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Journal of Current Studies in SDGs
Homepage : https://journal.i-ros.org/index.php/JOCSIS
Email : jocsis@i-ros.org

e-ISSN 3089-7564
Vol.4, No.1, March 2028
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Challenges and Practicalities of Implementing the Case Based Blended Collaborative Learning (CBBCL) Model in Learning in Higher Education and SDGs

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DOI : https://doi.org/10.63230/jocsis.4.1.345

Sections Info

Article history:
Submitted: May 18, 2026
Final Revised: August 6, 2026
Accepted: October 2, 2026
First Available Online: November 13, 2026
Publication Date: March 27, 2028

Keywords:
Blended Education;
Case-Based Blended Collaborative Learning;
Collaborative Pedagogy;
Higher Education;
Implementation Challenges;
Instructional Viability.

ABSTRACT

Objective: *To apply a case-based blended collaborative learning (CBBCL) model in higher education and examines the implementation difficulties. This research explores two research questions regarding the implementation of CBBCL model: (1) what are the challenges, and (2) how practical it is perceived by lecturers and students.* ***Method:*** *A descriptive quantitative study using data from 30 lecturers and 60 undergraduate students implementing the CBBCL paradigm in courses. Data were collected using two structured questionnaires utilizing a five-point Likert scale, which were analyzed through descriptive statistics, namely mean scores, frequencies, percentages, and standard deviations.* ***Results:*** *Lecturers considered the model very practical, with an overall mean of 4.12, while students considered it practical, with a mean score of 3.81. The preparation of learning materials was given the highest score (mean 4.73) by instructors and case-based group discussions by students as those having the greatest potential to improve understanding (4.37). Equal degree of engagement among group members (lecturers = 2.87; students = 2.93) and collaborative evaluation (students = 2.83) were given the lowest ratings by both cohorts.* ***Novelty:*** *The findings indicate that the CBBCL paradigm has feasibility and usability in higher education, and this study is among the first to examine the practicality of integrating case-based, blended, and collaborative learning in a single model from both lecturer and student perspectives.*

INTRODUCTION

The rapid embrace of digital transformation in higher education now means that it has radically changed how teaching & learning take place around the world. Universities are increasingly challenged to deliver graduates equipped with not only specialized knowledge but also skills needed for complex, technology-embedded environments. Global frameworks for twenty-first century education seldom list critical thinking, communication, cooperation and collaboration, creativity and digital literacy among the key competencies for graduates (Dumbuya, 2024; Greenwood, 2025). Therefore, it is advised that teach colleges need utilize innovative pedagogy which engages students in authentic agreelearning practices rather than to relying solely on the traditional teacher-centered practice. This shift has arguably been accelerated by the proliferation of digital technology and Learning Management Systems (LMS) that support various types of blended learning environments that combine in-person with electronic learning (Chand,

2026; Diwanji, 2026). However, despite these advancements, many universities in developing counties continue to struggle with student-centered learning models due to a combination of inequalities in access to technology infrastructure, the ability of institutions and their faculty to adopt new pedagogy and students' willingness and ability to collaborate (Gegelashvili, 2026; Salendab & Tago, 2025).

Blended and collaborative pedagogies are more important in this regard, as they combine the flexibility of digital learning with real--a-contrived classroom institutions with proper levels of interaction. However, the mere inclusion of technology in education does not ensure quality learning. Learning needs pedagogies that proactively enable student engagement, collaboration and authentic knowledge production (Rotar, 2025). Such expectations highlight the need to develop learning models that can integrate many methods of education into a cohesive, higher education learning framework.

The CBBCL paradigm is an instructional innovation student-centered learning aiming to fulfill this mission. CBBCL is a structured approach that combines 3 synergistic methodologies, namely Case-Based Learning, Blended Learning and Collaborative Learning. The Case-Based Learning approach encourages students to analyze real-life and complex problems from professional practice. Blended Learning combines in-person synchronous training with an on-line asynchronous education component to balance flexibility and continuous involvement. Collaborative Learning emphasizes teamwork, mutual responsibility, and the joint generation of knowledge through structured interactions with peers (Deep et al., 2024; Ma & Wu, 2025). By combining these three approaches, CBBCL aims to improve conceptual understanding while also developing collaboration skills and student engagement.

Although the theoretical underpinning of CBBCL may appear sound, actual implementation in classrooms is contingent upon factors other than strong design practices alone. The effectiveness of the model depends on instructors` teaching ability, students' motivation to participate, availability of technological resources in institutions and an equitable evaluation framework that recognizes joint and individual effort (Wang & Liu, 2025; Weidlich et al., 2025). Thus, evaluating the feasibility and barriers to implementation of CBBCL is important before recommending its widespread application in higher education settings.

Previous studies have shown positive outcomes associated with Case-Based Learning. Research design- the effectiveness of Case based training was evaluated using quasi-experimental study to improve students analytical thinking and problem-solving. Research showed significant improvements in higher-order thinking compared to standard training suggesting that authentic contexts promote the production of useful knowledge (Arianto et al., 2026; Santosa, 2025). The results indicate that contextual activities bridge real-life situational practices and theoretical knowledge.

Various studies have examined the effectiveness of Blended Learning in tertiary education. Predominately empirical or quasi-experimental methods were employed with comparison to traditional classroom learning of blended environments. The results showed that blended learning practices, when applied well, particularly offers greater flexibility for learners, a higher level of satisfaction among students as well as better academic outcomes (Huang et al., 2025; Park & Doo, 2024; Zeng et al., 2024). These results imply that blended learning can enhance education by giving on-going access to teaching materials; and includes synchronous along with asynchronous communications.

Research and studies of Collaborative Learning have continually highlighted the educational benefit. Survey and observational methods were used in another study that focused on collaborative learning to engage students in teamwork. The results showed that systematic inter-dependence improved group communication, peer interaction and

collaboration but there were continuing problems with unequal contributions from group members (Saidakbarovna, 2026; Zulpykhar et al., 2026). The results suggest that carefully facilitating collaborative learning is essential to ensure all students participate and are held accountable.

A large number of researchers have been trying to bring together some teaching methods recently. The study through Case Based Learning to blended learning approach was incorporated with the online learning settings used to investigate student engagement in blended courses. Using a mixed-method approach, improvements to learning motivation and critical thinking were found, while ongoing difficulties related to group coordination and fairness of assessment were noted (Awidi et al., 2025; Mizza et al., 2025; Ndofirepi, 2025). A further study integrated collaborative learning in blended environments and revealed positive impacts with respect to student interaction and academic performance but identified through factor analysis personal attributes associated with technology readiness and facilitations as significant hurdles affecting the success of implementation (Muldiyana et al., 2018; Tang et al., 2025)

On the other hand, relatively few studies examined pedagogical models that systematically combine Case-Based Learning, Blended Learning and Collaborative Learning into a single instructional framework. The existing literature mostly focuses on measuring learning outcomes, satisfaction student or academic performance (Hinostroza et al., 2025; Karim et al., 2025).

Furthermore, implementation challenges related to inclusive participation, collaborative processes and carrying out equitable collaborative assessments are poorly investigated but essential for successful integration in classrooms over time.

Existing studies have shown that Case-Based Learning promotes higher-order thinking, Blended Learning improves flexibility and accessibility, and Collaborative Learning enhances interaction and teamwork. But research combining two of these methodologies also suggests positive educational outcomes. This assemblage of data suggests that teaching and learning in higher education can be greatly improved by incorporating new practices. However, the evidence available focuses mainly on instructional effectiveness, not practicability of implementation - leaving important questions about practicality, usability and classroom barriers unaddressed.

This restriction indicates a significant gap in the research. Although numerous studies have proven the effectiveness of new pedagogies, not enough empirical evidence exists about how both lecturers and students perceive integrated learning models as an option for everyday practice. Understanding barriers (thinking of implementation challenges, as educational innovations often fail not because they are weak in theory but more through hurdles regarding their use into practice). If educational institutions fail to recognize the pragmatic challenges that instructors and learners confront, then they will struggle to successfully scale new learning models throughout diverse higher education environments.

This study aims to investigate the implementation challenges and viability of a Case Based Blended Collaborative Learning (CBBCL) model in higher education from lecturer and student perspectives. This study aims to investigate the following research question in particular: (1) What would be the implementation obstacles face by lecturers and students in implementing CBBCL model? How context-dependent is the CBBCL model viewed to be for higher education pedagogy? Reported practicality will primarily be very high with lecturers and students, whilst collaborative participation and assessment will be the main implementation problems reported.

This research uses a descriptive quantitative research method using structured questionnaires given to lecturers who implement CBBCL and students who take part in

learning based on CBBCL. A descriptive statistical analysis assesses views of feasibility along several implementation factors and spots areas for improvement. This strategy is appropriate because provides empirical evidence about how easily the instructional model can be used in real-world classrooms.

This study adds to the literature in several important ways. This research contributes to an emerging area of literature by investigating a combined and progressive educational model comparing the observational implementations of Case-Based Learning, Blended Learning, and Collaborative Learning concurrently rather than individually. Second, it provides empirical data on implementation challenges and feasibility perspectives from both lecturers and students, an understudied aspect of the current literature. The results yield practical recommendations for institutions implementing student-centered digital pedagogies while also contributing theoretically to the growing literature about integrated learning models in twenty-first-century higher education.

RESEARCH METHOD

Research design

This study used a quantitative research method with a descriptive survey design to investigate the implementation obstacles and feasibility of the CBBCL model in Higher Education (HE). It uses the Quantitative research method, as it enables researchers to objectively measure respondents' perceptions through numerical data and basic statistics. This technique lends not only an objective test of the Terry-Tripp instructional model, but offers evidence concerning the applicability of this type of approach across diverse contexts.

The descriptive survey methodology was selected because the goal of study was to describe lecturer and student impressions regarding the CBBCL model and does not examine variable change or cause-and-effect relationships. Survey research allows for the collection of information from a relatively large sample of respondents in a short timeframe, while maintaining consistent data collection. This methods also allows to evaluate that strengths and weaknesses of a learning model extracted from real life classroom experiences.

The practical evidence from both lecturers and students of this study's conceptual framework indicates that the CBBCL model is effectively implemented. Practicality is defined by important instructional dimensions of learning syntax, lesson planning, preparation of course material, classroom communication management and the use of Learning Management System (LMS), technology integration by teachers, collaborative or interactive teaching engagement, assessment strategies and overall learning efficacy. Collectively these attributes indicate the practical feasibility of the instruction model.

Data was collected using standardized questionnaires measured on a five-point Likert scale from strongly disagree (1) to strongly agree (5). Respondent feedback was analyzed using descriptive statistics: mean scores, percentages and standard deviations. Results were processed then according to standard criteria for practicalability which enable to identify successful implementation areas and those ND fields which require improvement. This methodology provides a wealth of empirical data regarding the viability and practical challenges associated with implementing CBBCL from the perspectives of both instructors and students.

Table 1. Methodological approach of the study

Component	Description
Research Approach	Quantitative Research

Research Design	Descriptive Survey Design
Purpose	To investigate the implementation challenges and practicality of the CBBCL model
Population	Lecturers and students in higher education
Sample	30 lecturers and 60 students
Instrument	Structured questionnaire (5-point Likert Scale)
Data Analysis	Mean, Percentage, Standard Deviation
Expected Outcome	Identification of practicality level and implementation challenges

Table 1 describes the methodology used in this study. This studies used a cross sectional quantitative descriptive survey to assess the feasibility and common implementation obstacles encountered by the CaseBased Blended Collaborative Learning (CBBCL) of higher education. Standardized questionnaires with five-point Likert scales were used to gather data from professors and students. Respondents' perceptions were described by mean scores, percentages and standard deviations. Using this methodological framework, you can ensure systematic data collection and provide strong evidence to support the feasibility of implementing.

Research setting and participants

The research was conducted in higher education context, where the Case-Based Blended Collaborative Learning (CBBCL) paradigm was utilized as an instructional approach to promote active collaborative technology-enhanced learning. The study was carried out in the 2025/2026 academic year through undergraduate programs that integrated face-to-face classroom and online learning activities via a Learning Management System (LMS). The educational environment focused on true cases, collaborative problem-solving, synchronous class discussions, asynchronous online learning activity and project-based tasks. This educational context provided an appropriate structure to examine the potential for introducing CBBCL and the challenges that might be encountered in its implementation.

Participants were made up of 30 instructors and 60 undergraduate students specifically trained on the use of the CBBCL paradigm. Lecturers of CBBC were selected based on having experience in the 3 phases (developing, facilitating and evaluating) involving learning activities being carried out using CBBCL approaches where as students who actively engaged with all the instructional phases of the model were chosen. Combining both groups, the study collected comprehensive data from educators and learners, thereby enhancing research results.

The sampling strategy implemented was a purposive sample, appropriate when researchers purposely select from respondents whose characteristics meet the objectives of research. Lecturers were only included if they had implemented the CBBCL model for at least one semester, had backgrounds from a Learning Management Systems (LMS) perspective that supports blended learning and given consent to participate in this study. Students Inclusion Criteria (1) taking classes based on the CBBCL model, (2) completing all major learning elements in these courses such as case discussions and collaborative projects and (3) consenting to participate after reading an explanatory statement related to the research project.

This included participants sex, age, rank (the number of years of higher education) and teaching or learning experience with blended learning technology. Contextualised data demographic factors provides insight into the CBBCL feasibility and implementation challenges faced by participants. Because the sample is primarily drawn from higher education users of the full-length CBBCL model, this context adds power to findings as

they demonstrate, inauthentically, what is likely to be experienced by typical higher education users and therefore have validity in improving future pedagogy practices.

Table 2. Characteristics of the study participants

Variable	Category	Frequency (n)	Percentage (%)
Participant Group	Lecturers	30	33.3
	Students	60	66.7
Sampling Technique	Purposive Sampling	90	100.0
Research Context	Higher Education	90	100.0
Academic Year	2025/2026	90	100.0
Learning Mode	Blended Learning (Face-to-Face + LMS)	90	100.0
Eligibility Criteria	With all inclusion criteria	90	100.0

Table 2 summarizes the characteristics of the study participants and the research context. A total of 90 participants were included consisting of 30 lecturers (33.3%) and 60 undergraduate students (66.7%), who had experience with the Case-Based Blended Collaborative Learning (CBBCL) paradigm first-hand. Purposive sampling was used to recruit participants to ensure that the inclusion criteria relevant to the objectives of this study were followed. The research was conducted in higher education within a blended learning framework during the academic year 2025/2026, with in-person instruction supplemented by online education through a Learning Management System (LMS). While the characteristics indicate that the participants were appropriate for testing the feasibility and implementation challenges of CBBCL model.

Data collection procedures

Data collection approach was performed systematically to ensure the accuracy, consistency and integrity of research data. It was a five stage process, all in succession. Study instruments were designed based on the theoretical foundations of Case-Based Blended Collaborative Learning (CBBCL) model and relevant literature about case-based learning, blended learning, collaborative and instructional feasibility. The questionnaire items were designed carefully, covering all dimensions of the research.

Content validation of the draft instruments was subsequently conducted with expert-as reviewers in educational technology and instructional design. Experts rated individual items of the questionnaire for relevance, clarity and representativeness. Their comments were used to modify and improve the instruments before applying them in the participants.

The surveys were issued to teachers and students meeting the defined inclusion criteria. Participants were first provided information regarding the research aims, confidentiality of their responses and that participation was entirely voluntary before completing the questionnaires. All responders provided informed consent.

Information collection was done by means of 30 teachers and a pair of 60 Participating in undergraduates who experienced the CBBCL version applied. The questions were answered on an individual basis, using a five-point Likert scale.

Collected data were reviewed for partial or inconsistent responses prior to scoring each item on the questionnaire in preparation for statistical analyses. The collected data were subsequently processed for descriptive statistical analysis to evaluate the acceptability and feasibility of implementing CBBCLs.

Table 3. Data collection procedures

Step	Procedure	Description	Output
Step 1	Instrument Preparation	Develop questionnaires based on the CBBCL framework and relevant literature.	Draft research instruments
Step 2	Expert Validation	Educational technology and instructional design experts evaluate the questionnaire items for relevance, clarity, and representativeness.	Validated research instruments
Step 3	Questionnaire Administration	Finalized questionnaires are distributed to lecturers and students after obtaining informed consent.	Completed questionnaires
Step 4	Data Collection	Responses are collected from 30 lecturers and 60 undergraduate students who have experienced the implementation of the CBBCL model.	Raw research data
Step 5	Data Screening and Coding	Responses are checked for completeness, consistency, and coding before statistical analysis.	Final dataset for analysis

Table 3 provides an overview of the systematic data collection process in this research. The process started with designing data collection instruments based on conforming to the Case-Based Blended Collaborative Learning (CBBCL) theoretical framework. Thereafter, these tools were assessed and approved by experts before being given to eligible subjects. Data were collected from 30 instructors and 60 undergraduate students with first hand experience of the CBBCL approach. After the data-solicitation phase, all responses were reviewed for completeness and consistency up front, before coding to prepare the information for statistical analysis. The systematic protocol ensured the accuracy, reliability and consistency of collected research data.

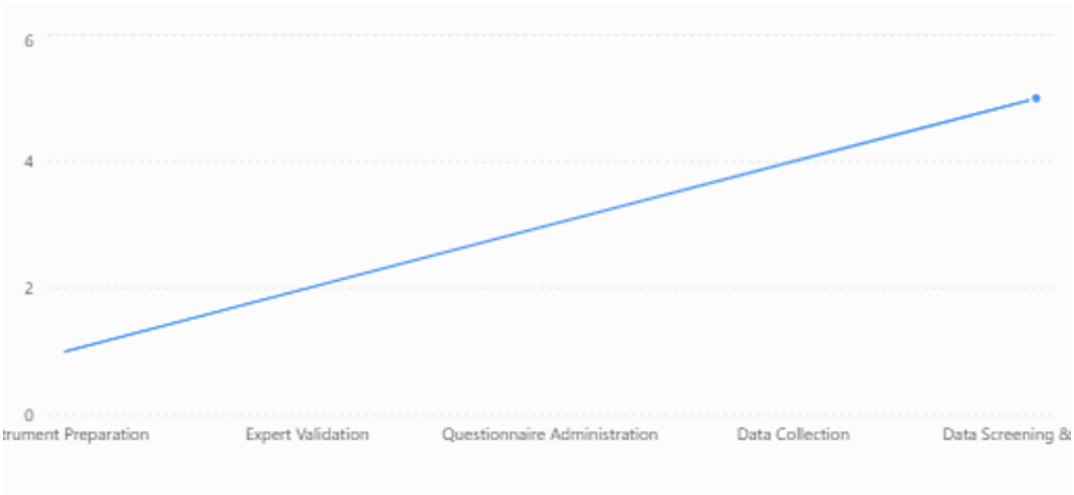


Figure 1. Data collection procedure

The sequential workflows of the data collection procedures adopted in this work are depicted in Figure 1. This process is from the development of research instruments, followed by an expert evaluation to ensure content validity relevance. Following validation, the questionnaires were administered to instructors and students who met our set of inclusion criteria. Subsequently, data was collected from all the other providers and learners. The final phase included screening and coding of data for incomplete responses, mistakes, as well as preparation of the dataset for statistical analysis. The

methodical approach of this PRISMA-P registered protocol increased methodological rigor and safeguarded hemophilia as the main target in NTD research.

Data analysis

The descriptive statistics techniques performed on the information collected were challenges in implementation, and feasibility of Case-Based Blended Collaborative Learning (CBBCL) paradigm. Before the analysis, all questionnaire results were reviewed and scored and a dataset was generated in which responses were input into statistical software to ensure that the data was valid and complete prior to analysis. Descriptive statistics were used to present the perceptions of respondents, rather than causal associations between variables.

Included among descriptive statistic in analysis were mean, standard deviation, frequency and percentage. Mean score assessed the overall feasibility of each dimension of measurement, and standard deviation reflected if there were differences in respondents' evaluations. Frequency and percentage distributions were computed to define the response behaviours of each of the lecturers and students for all items in the questionnaire.

Established practicality criteria were used to assess average scores. Based on the aforementioned categories of interpretation, mean values were categorized from 4.21 −5:00 as Very Practical;3.41 -4.20,Practical 2.61-3.40 Moderately practical and less Practical1,81 -2:60,as Less Practical and (1:00 −1:80) (Table 5) Questioning data analysis was performed consistently using these categories.

Besides, we also conducted descriptive comparisons of the point of view between lecturers and students to explore similarities and differences related to their implementationof CBBCL model. An analysis also selected the highest and lowest rated indicators to identify where stronger pieces on which the education model rests are, and its weaknesses. To improve readability and comprehension, we present the research findings using descriptive tables and figures.

Table 4. Descriptive statistical analysis and interpretation criteria

Analysis Component	Statistical Technique	Purpose
Mean	Average score	Determine the practicality level of each indicator
Standard Deviation	Dispersion analysis	Measure the consistency of respondents' perceptions
Frequency	Count	Determine the number of responses in each category
Percentage	Percentage distribution	Describe response proportions
Lecturer–Student Comparison	Mean comparison	Compare perceptions between lecturers and students
Highest & Lowest Indicators	Ranking analysis	Identify strengths and areas for improvement

Table 5. Interpretation of mean scores

Mean Score	Interpretation
4.21–5.00	Very Practical
3.41–4.20	Practical
2.61–3.40	Moderately Practical
1.81–2.60	Less Practical
1.00–1.80	Not Practical

Descriptive statistical techniques summarized in this paper with their interpretation criteria of mean score are summarised in Table 4. For the analysis, four descriptive indices—mean, standard deviation, frequency, and percentage—were used to assess respondent perceptions of the feasibility and barriers of CBBCL model implementation. Five accepted practicality categories with the range from Not Practical to Very Practical were used as unit of analyses for mean scores. Additionally, lecturers' and students' views have been analysed and the best and worst rated indicators have been identified because they provide a good understanding of what aspects of CBBCL in higher education work well or do not.

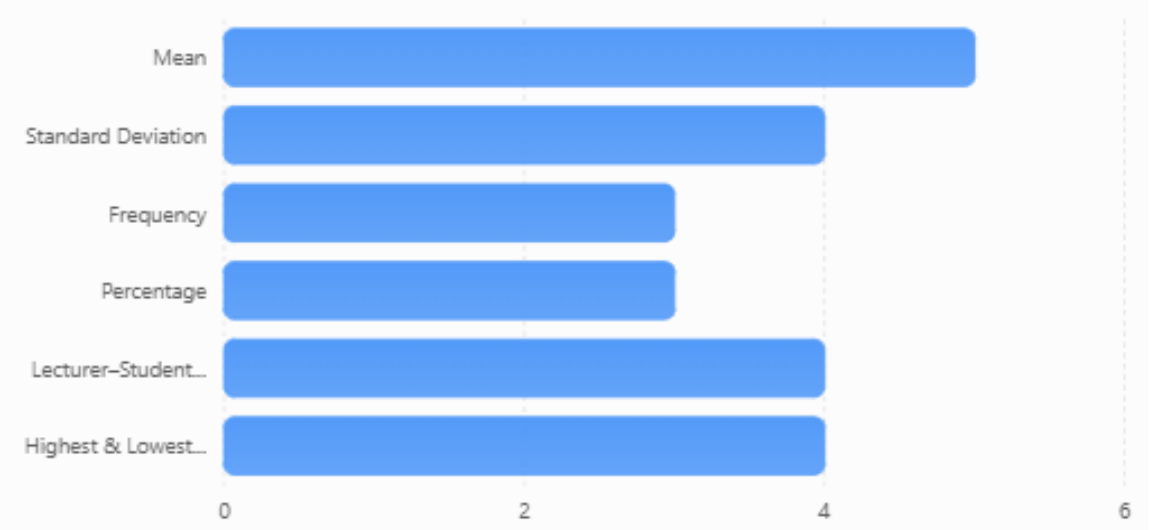


Figure 2. Data analysis framework

The analytical framework used in this study is shown in Figure 2. The descriptive statistical analysis focused on six key components which mean, standard deviation (SD), frequency and percentage, the perception of lecturer student comparison about the categories that high perceptions as well as low indicator. These analysis methods, when combined together, provide a comprehensive evaluation of the viability of the CBBCL paradigm. The combination of numerical summary data and comparison analyses enables researchers to identify trends in how respondents viewed their learning, who is consistent (and inconsistent) in which answers they report, and what aspects of instruction (text) or content are perceived as particularly strong or weak.

RESULTS AND DISCUSSION

Results

Implementation challenges of the CBBCL model

Lecturer perceptions

The first research question addressed the challenges of implementation of CBBCL model seen through a lecturer's lens. Lecturers showed a high level of practicality with an overall mean score of 4.12. Development of learning materials (M = 4.73), Understanding the CBBCL grammar (M = 4.67) andLesson planning (M = 4.57); had been rated highest, respectively. Learning Assessment evaluation (M = 4.40), Learning Management System (LMS) application (M = 4.33), and Technology integration be scored high at 4.3333.

Scores for management of classroom discussion (M = 3.20) were found to be lower than for instructional effectiveness (M = 3.97). The active participation of the entire group was rated low assisted by mean score (M = 2.87) over all dimensions assessed.

The results highlight the sizeable gap in terms of implementation dimensions, between the top and bottom indicators which differ by on average 1.86 mean points.

Student perceptions

The second analysis examined student concerns about the use of the CBBCL paradigm. The students who participated had an overall practicality score of 3.81, indicating a practical level of implementation.

Group discussion promoting knowledge scored the highest (M = 4.37), followed by: case clarity (M = 4.30), accessibility of the online learning resources (M = 4.28), group work collaboration (M = 4.25), use of technology (M = 4.22) and how attractive is the learning experience (M= 4,10).

Collaborative reflection (M = 3.00), collaborative assessment (M = 2.83) and equal engagement among the group members (M = 2.93) were identified as the three lowest-rated indicators by students.

What is more, the difference in maximum and minimum student ratings across all measures was 1.54 mean points.

Table 6. Descriptive statistics of lecturers' and students' perceptions on the implementation challenges of the CBBCL model

Dimension	Lecturers (M)	Students (M)	Difference
Understanding of CBBCL Syntax / Case Clarity	4.67	4.30	0.37
Lesson Planning / Online Material Accessibility	4.57	4.28	0.29
Learning Material Preparation / Learning Engagement	4.73	4.37	0.36
Classroom Discussion Management / Group Collaboration	3.20	4.25	-1.05
Equal Participation in Groups	2.87	2.93	-0.06
LMS Utilization / Technology Utilization	4.33	4.22	0.11
Technology Integration	4.33	—	—
Learning Assessment / Collaborative Assessment	4.40	2.83	1.57
Overall Implementation Effectiveness / Learning Attractiveness	3.97	4.10	-0.13
Overall Mean	4.12	3.81	0.31

The descriptive statistics regarding how both lecturers and students perceived the implementation challenges of the CBBCL model are presented in Table 6. 110 using an excerpt of M4/indto2 as a 114 practical component for learning and three context feature titers. For this highest score by professors was in preparation of learning material (M = 4.73); for students—to engaging the learners through group discussions (M = 4.37). Collaborative assessment and equitable participation in collaborative groups scored extremely low among both community groups. These descriptive statistics provide an overview of the implementation profile of the CBBCL model with respect to its main characteristics into practice.

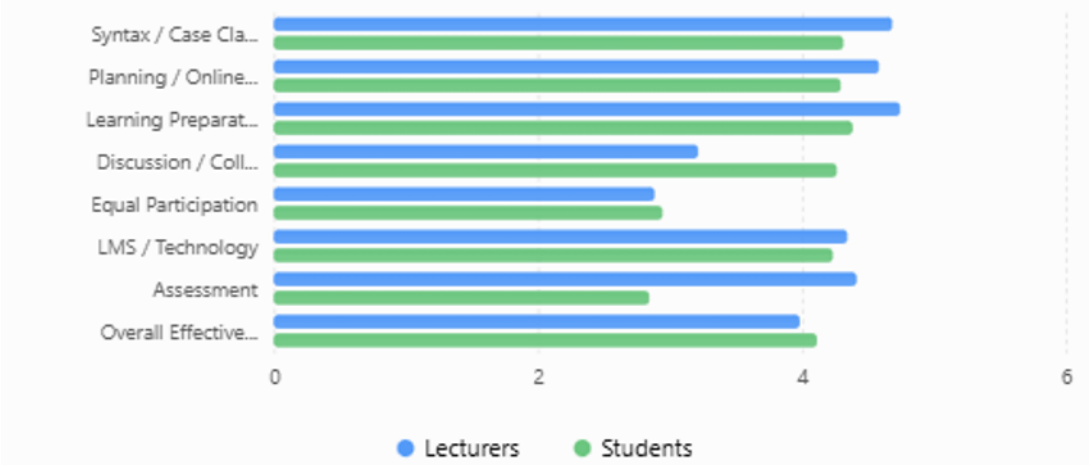


Figure 3. Comparative mean scores of implementation dimensions reported by lecturers and students

The mean scores of lecturers and students associated with the prime implementation dimensions of the CBBCL model are shown in figure 3. The most rated categories by respondents from both groups were however related to instructional preparation, learning resources and technology-enhanced learning. While the gap in the assessment dimension was greatest between instructors and students, both groups reported relatively low scores on equal activity by group members. The visualization clarifies how perceptions are distributed over implementation dimensions and provides a summary of similarities and differences between how lecturers versus students judged the barriers, while retaining the detailed statistics shown in Table 6.

Practicality of the CBBCL model

Second the study question evaluated the feasibility of using Case-Based Blended Collaborative Learning (CBBCL) paradigm in higher education through its entire application process. Descriptional analysis shows that professors and students both viewed the model as pragmatic. The overall mean score from the Lecturers was 4.12, while for students it was 3.81.

Referring to the criteria determined for interpretation, lecturers responses were categorized as highly practical and students' answers as practical.

As shown in Table 6, most instructional dimensions received mean scores above 4.00 indicating an overall view of CBBCL as positive on several fronts. Preparation of learning materials, understanding of the CBBCL grammar and lesson planning received the highest evaluations among lecturers. Again, the highest-scoring group discussions mean students learned better, clarified cases, had access to online learning materials easily and that collaboration was established in the team.

In contrast, characteristics related to equitable participation of group members in collaborative reflection and joint confronting were received mean scores cut off concurring evidence but significantly lower. These dimensions reflected the lower-rated areas in feedback from students, although active participation was rated lowest overall by professors.

While Figure 4 depicts the overall desirability ratings given by professors and students, Tables 6 and 7 provide complete descriptive statistics for each measurement dimension. Descriptive data indicate that variability exists in the distribution of practicality scores across the assessed domains, with overall ratings being highest in instructional preparation, learning resources, and technology-enhanced learning activities.

Table 7. Overall practicality of the CBBCL model

Respondent Group	Sample Size (n)	Mean Score	Practicality Category
Lecturers	30	4.12	Highly Practical
Students	60	3.81	Practical
Overall	90	3.97	Practical

Table 7 describes how practical is the implementation of CBBCL construct according to lectures and students per their responses In comparison to students (M = 3.81), instructors exhibited a higher overall mean score (M = 4.12). According to their interpretation criteria, teachers perceived the model as very practical and students announced it as practical. These mean score of 3.97 indicates that the CBBCL presented an adequate level of utility upon classroom implementation. The descriptive statistics showed that both the student and instructor groups alike viewed the teaching model positively, although with some variation in their intensity of feeling.

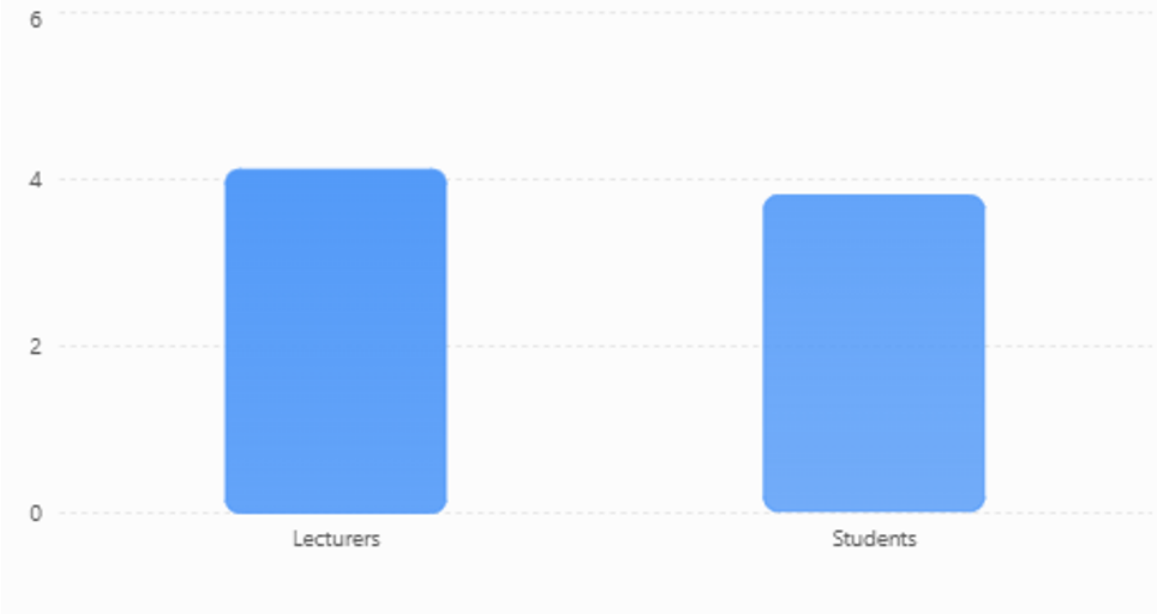


Figure 4. Overall practicality comparison of the CBBCL model

The general practicality ratings assigned to the CBBCL model by lecturers and students are compared in Fig. 4. Instructors scored on average better than students but both groups rated the method of teaching highly. The difference in size effect between the two samples was negligible, indicating a relatively consistent perception of model utility across all subjects. It provides a summarised description of the results, complementing the full tabular results shown in Table 7.

Table 8. Highest- and lowest-rated dimensions of the CBBCL model

Respondent	Highest-Rated Dimension	Mean	Lowest-Rated Dimension	Mean
Lecturers	Learning Material Preparation	4.73	Equal Participation	2.87
Students	Learning Engagement	4.37	Collaborative Assessment	2.83

According to the table 8 it points out that gross means and standard deviation of dimensions reported from both lecturers side and also students side in order of highest rated and lowest rated. Within each of the three main types, learning materials creation received the highest mean score among lecturers and equitable engagement between

group members received the lowest mean score. The students gave the highest rating to learning engagement through group discussion and the lowest score for collaborative assessment. These extreme values give a compact summary of the strongest and weakest features identified in carrying out the CBBCL model.

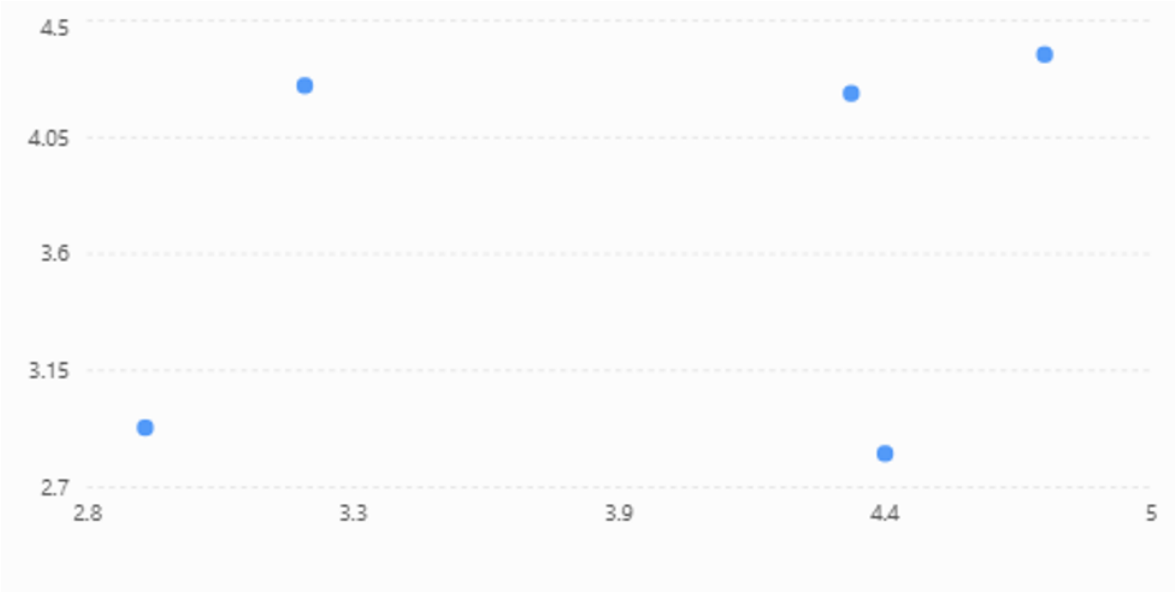


Figure 5. Strength–challenge profile of the CBBCL model

Discussion

Overview of the main findings

Purpose: This study aimed at exploring the implementation problems and feasibility of Case-Based Blended Collaborative Learning (CBBCL) model from higher education lecturers' and students' perspectives. The results showed that both respondent groups perceived CBBCL as a potentially feasible model in the classroom, with lecturer judges scoring the practicality of implementation more favorably than student participants. Out of all criteria, assessment ratings were consistently positive for instructional preparation, learning material production, technology integration and LMS utilization. On the other hand, collaborative engagement as well as collaborative assessment were found to be rated to least of features among all responder groups. These findings indicate that while the pedagogical design and technological components of the model function well, challenges remain in facilitating collaborative learning processes.

Challenges in managing collaborative learning

The most significant finding of this study is that the major challenge of implementation was not rooted in the CBBCL model design but rather the facilitation of collaborative group work. Equitable participation of group members received the lowest scores from both lecturers and students consistently, suggesting that maintaining balanced involvement throughout collaborative learning is difficult. This research provides evidence for the claim that collaborative learning does not occur automatically just from students simply being assigned to group work (Peng et al., 2025; Woreta et al., 2025).

Previous studies have consistently identified that unequal participation, social loafing, the dominance of certain individuals in groups and ineffective communication reduce the quality of collaborative learning environments (Munirah & Sahriani, 2024; Jeppu et al., 2023; Zhang et al., 2023). Collaborative problem-solving research shows that before students can collaborate effectively, they need explicit instruction in teamwork strategies, communication, conflict resolution and individual accountability (Brandl et al., 2024;

Sumarni et al., 2025). So, effective collaborative learning is contingent on group composition and our systematic teaching support to the learners in the course of their learnin; process.

These findings highlight the importance of collaborative structures in higher education today. To ensure all group members participate equally, instructors should define clear roles for the group - outlining individual responsibilities and frequently monitoring collaboration while providing timely feedback.

The role of LMS in supporting blended learning

Another important finding highlights tensions between consistently high ratings for the use of Learning Management System (LMS). Both instructor and student groups viewed it as a part of the CBBCL model that effectively helps to implement. Results establish that through Digital Learning Platform synchronous and asynchronous learning activities were indeed conducted in the instruction process.

Previous research ongoing that LMS encourages flexibility in learning, providing students with instruction before the class is started, engaging them in online discussions, submitting assignments electronically onto platforms and receiving more tailored feedback by instructors (Ahmed et al., 2025; Akintayo et al., 2024; Alam, 2024). Similar findings have been found in blended learning studies which noted improved student engagement through the use of digital platforms and off campus, extended learning (Lewohl, 2023; Naidoo & Singh-Pillay, 2024; Uzun et al., 2025).

The Learning Management System (LMS) in the context of the Challenge Based Community Learning paradigm acts as a way to store teaching resources as well as a collaborative learning platform for students with which they communicate, share ideas and organize project work. This advanced teaching role enables the organization of some in-class and remote educational modalities.

Collaborative assessment as a continuing challenge

The education dimension proved to be highly pragmatic but as the collaborative assessment emerged further the need for improvement came to light. Collaborative assessment was given one of the lowest evaluations by students, and instructors also faced challenges in assessing individual contributions within collaborative tasks.

This result is consistent with studies emphasizing that the evaluation of collaborative learning is much more complex than those concerned with individual learning outcomes (BRUGLIERA, 2024; Lan et al., 2026; Tick & Wang, 2025). In traditional group eval, the focus is often on what students end up producing instead of how they arrived at that product and who contributed to each part. Consequently, students may perceive performance evaluation as an insufficient tool for accountability and representation of their work.

Many educators have argued for the addition of alternative assessment approaches to foster accountability and equity in group learning contexts. These methods include peer evaluation, self-assessment, rubrics for individual contributions, reflective diaries and learning analytics from Learning Management Systems (Arthars et al., 2024; Kutuzov & Богданова, 2025; Uzun et al., 2025; Yu & Zagula, 2025). Such assessment approaches produce broader evidence of individual engagement while participating in group learning practice.

Practicality of the CBBCL model in higher education

While the implementation challenges identified were acknowledged, it is recommended that greater investment in the CBBCL model should achievable within higher education. The instructors tend to give high marks for the lessons planning, advanced preparation,

integration of technology and implementation outcomes, while students expressed positive views towards case-based learning activities, collaborative discussions and e-learning resources.

Those outcomes are consistent with earlier research showing that Case-Based Learning, Blended Learning and Collaborative Learning are beneficial in terms of student engagement, critical thinking and active participation at college level (Haataja et al., 2025; Peramunugamage et al., 2024). This research extends previous studies by revealing that the combination of these three kinds of teaching methods can potentially be implemented in real classroom context within a unified cognitive-behavioral framework.

In addition, the findings support constructivist learning theory because they highlight that knowledge is produced by people solving problems with others (Arega & Hunde, 2025; Nigussie et al., 2025; Vincent, 2026). Existing collaboration spaces that enable community engagement, dialogic discourse, and technology-enhanced learning create opportunities for students to construct knowledge through meaningful learning experiences rather than simple information consumption.

Practical implications

The implications of this study could lead to many practical applications for educators and higher education institutions adopting integrated learning models. Teacher professional development should focus on both technology skills and collaborative facilitation skills including group management, conflict resolution, and collaborative evaluation approaches.

Second, schools should leverage the instructional capabilities of a Learning Management System more than just distributing content. LMS should be used for collaborative communication, learning analytics, formative feedback, peer interaction and monitoring of individual engagement in group activities.

Third, development of collaborative assessment frameworks needs to be multimodal with a range of evidence sources including lecturer marks, peer and self-assessments and portions of digital participation. Very comprehensive evaluation strategies may promote accountability and help maintain collaborative learning experiences.

CONCLUSION

Fundamental Finding: The study aimed at investigating the implementation issues and feasibility of Case-Based Blended Collaborative Learning (CBBCL) in higher education from lecturers and students perspectives. The focus of the work was to evaluate how valid it is, and to highlight some major issues that could prevent the successful utility of the model in real learning contexts. The study empirically shows that the CBBCL model is mainly appropriate for higher education. Instructors rated the model as highly suitable ($M = 4.12$), while students found it suitable ($M = 3.81$). Retained scores that were significantly good were in instructional planning, preparation of learning materials, case-based learning activities, use of a Learning Management System (LMS), and integration of technology. In contrast, equitable engagement of group members and collaborative assessment were the lowest-rated qualities in both respondent groups indicating that these aspects continue to pose substantial challenges to implementation. **Implication:** By providing an empirical basis for the feasibility of a new instructional paradigm that systematically integrates Case-Based Learning, Blended Learning and Collaborative Learning into a single learning model — and a competence-based cohort structure to bring learners together — this study contributes to the literature. Their findings yield timely recommendations for such institutions wanting to implement integrated learning models that foster active, technology-enabled, and collaborative learning. Hence,

lecturers should improve their collaborative facilitation by clarifying the roles of group members, establishing peer and self-assessment activities with a structure for providing a combined mark, developing an explicit rubric to assess each student in terms of his or her contributions toward individual tasks within the duration of teamwork, and utilising LMS learning analytics to monitor student interaction during collaboration. If designed well, these solutions could work to support individual ownership while still capturing the benefits of collective learning. **Limitation:** This study relied on self-reported perceptions gathered through descriptive survey questionnaires from a purposive sample of 30 lecturers and 60 students in a single higher education context, so the findings describe perceived practicality rather than measured learning effects and should be generalized with caution. **Future Research:** Future research should examine the effectiveness of CBBCL model via experimental or longitudinal methods used in different universities and disciplines. The use of qualitative methodologies, learning analytics or artificial intelligence–enhanced feedback systems might provide more substantial insights into the collaborative learning processes while better optimizing the application of CBBCL model across diverse contexts in higher education.

AUTHOR CONTRIBUTIONS

Muldiyana: Conceptualization, Methodology, Investigation, Formal Analysis, Data Curation, Writing – Original Draft, and Project Administration; Mustaji: Supervision, Validation, Methodology, and Writing – Review & Editing; Utari Dewi: Validation, Investigation, Resources, and Writing – Review & Editing; Andi Tenri Sua: Investigation, Data Curation, Visualization, and Writing – Review & Editing. All authors have reviewed and approved the final version of this manuscript.

CONFLICT OF INTEREST STATEMENT

The authors confirm that there are no conflicts of interest, either financial or personal, that may have influenced the content or outcome of this study.

ETHICAL COMPLIANCE STATEMENT

This manuscript complies with research and publication ethics. The authors affirm that the work is original, conducted with academic integrity, and free from any unethical practices, including plagiarism.

STATEMENT ON THE USE OF AI OR DIGITAL TOOLS IN WRITING

The authors acknowledge the use of ChatGPT (OpenAI) as an AI-based tool to assist with language refinement, grammar checking, academic writing improvement, and manuscript editing. Digital tools were used to support the organization and clarity of the manuscript. All AI-generated suggestions were critically reviewed, verified, and revised by the authors to ensure the accuracy of the content, academic integrity, and compliance with publication ethics. The authors take full responsibility for the originality, accuracy, and final content of this manuscript.

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