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Reframing Teachers' Roles as Learning Facilitators to Support Holistic Student Development in Student-Centered Education

Nur Sita Resmi*, Sri Ramadhani, Yenni, Manda Sari, Ersa Sule, Febrianti Rahim, Enjelina Roya Brigita, Sisilia Sanda, Ekrila Burniva

[1] *Universitas Megarezky Makasar, Indonesia*

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ABSTRAK

Teacher facilitation has become a central issue in student-centered education because contemporary classrooms require teachers to guide learning rather than merely transmit knowledge. This study aims to examine how teachers' roles as learning facilitators support holistic student development in student-centered classroom learning. A mixed-method descriptive design was employed to capture both the measurable and contextual dimensions of facilitative teaching. Data were collected through a teacher facilitation questionnaire, classroom observation sheet, semi-structured interviews, and documentation analysis. The instruments focused on five dimensions of teacher facilitation: active learning environment, feedback provision, classroom discussion, learning media use, and individual learning assistance. Quantitative data were analyzed using descriptive statistics, while qualitative data were examined through thematic analysis and integrated during interpretation. The findings show that teachers' facilitative roles were generally implemented positively. Teachers encouraged student participation, provided oral and written feedback, facilitated classroom discussion, and offered individual assistance to students who experienced learning difficulties. Individual learning assistance emerged as the strongest dimension because it directly responded to students' diverse learning needs and supported confidence, motivation, and learning independence. However, the use of learning media remained less optimal, indicating the need for stronger pedagogical creativity, media integration, and professional development. This study contributes to the literature by reframing teacher facilitation as an integrated pedagogical practice that connects instructional guidance, formative feedback, dialogic interaction, differentiated support, and holistic student development. Practically, the findings suggest that schools should strengthen teachers' capacity to design responsive, interactive, and media-supported learning environments.

Keywords: Active learning environment; Feedback provision; Individual learning assistance; Learning facilitator; Student-centered education.

Corresponding Author : Email : nursitaresmi05@gmail.com*
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A. Introduction

The transformation of contemporary education has increasingly shifted attention from the transmission of content to the facilitation of meaningful learning experiences. In this changing landscape, teachers are no longer positioned merely as knowledge providers but as pedagogical agents who design, guide, monitor, and sustain learner engagement. Student-centered education has become a central direction in international educational reform because it encourages learners to participate actively, construct understanding, and develop competencies relevant to complex social and professional contexts (Martin-Alguacil et al., 2024). This shift is closely related to the growing demand for learners who can think critically, collaborate productively, communicate effectively, and regulate their own learning processes. Within this orientation, the teacher's role as a facilitator becomes essential because learning quality depends not only on curriculum content but also on how teachers create conditions that enable students to learn with autonomy and confidence. Therefore, examining the facilitative role of teachers is highly relevant for understanding how student-centered education can be translated into classroom practice.

Despite the widespread acceptance of student-centered learning, many classrooms continue to be shaped by teacher-dominated instruction, limited interaction, and assessment practices that emphasize outcomes rather than learning processes. Such conditions may reduce students' opportunities to ask questions, explore ideas, engage in dialogue, and develop independent learning habits. Recent studies have shown that active participation and engagement are strongly influenced by teacher support, feedback, autonomy support, and classroom interaction patterns (Li et al., 2025; Miao et al., 2023). When teachers act mainly as lecturers, students may become passive recipients of information rather than active participants in knowledge construction. This problem is especially important in contexts where curriculum reform promotes 21st-century learning but classroom practices remain largely conventional. Consequently, the gap between policy expectations and everyday pedagogy has made the teacher's facilitative role a critical issue in educational improvement.

The urgency of strengthening teachers' facilitative roles is also connected to the need for holistic student development. Holistic development does not only refer to academic achievement but also includes motivation, self-efficacy, social interaction, emotional readiness, creativity, and self-regulated learning. Research on feedback and formative assessment indicates that students benefit more when teachers provide guidance that helps them understand their progress, identify learning gaps, and plan improvement strategies (Brooks et al., 2021; Daumiller & Meyer, 2025; Li & Gu, 2024). Differentiated instruction has also been associated with improved engagement and achievement because it allows teachers to respond to learners' varied readiness levels, interests, and learning needs (Subandiyah et al., 2025; Zhao, 2026). These findings suggest that facilitation is not a single classroom technique but a multidimensional pedagogical function. It involves designing supportive environments, providing adaptive feedback, encouraging learner autonomy, and creating opportunities for meaningful social interaction.

The importance of this topic is further reinforced by the increasing complexity of teachers' professional responsibilities. Teachers are expected to integrate curriculum goals, digital resources, formative assessment, differentiated learning, and socio-emotional support within limited classroom time and diverse learner conditions. Professional development research emphasizes that sustainable improvement in teaching requires more than technical training; it requires reflective, collaborative, and context-sensitive learning opportunities for teachers (Sancar et al., 2021). In addition, the implementation of learner-centered education often depends on institutional support, assessment alignment, teacher autonomy, and the availability of pedagogical resources (Ahovi et al., 2026; Lindström, 2025). Without these enabling factors, the discourse of student-centered learning may remain rhetorical rather than practical. Therefore, the study of teachers as learning facilitators is important because it clarifies how pedagogical ideals can be operationalized in real classrooms.

Previous studies have provided valuable insights into several dimensions of teacher facilitation. Research on student-centered learning has highlighted the importance of learner participation, collaborative activities, reflective learning, and flexible instructional design (Martin-Alguacil et al., 2024; Lindström, 2025). Studies on feedback have demonstrated that effective feedback supports cognitive, motivational, and emotional aspects of learning, particularly when students are encouraged to use feedback actively rather than receive it passively (Brooks et al., 2021; Daumiller & Meyer, 2025). Other studies have emphasized the role of formative assessment in supporting self-regulated learning and helping teachers adjust instruction based on students' learning evidence (Li & Gu, 2024). In parallel, research on autonomy support has shown that students'

engagement, self-efficacy, and participation improve when teachers provide meaningful choices, encouragement, and psychological support (Li et al., 2025; Miao et al., 2023). Meanwhile, differentiated instruction has been found to promote engagement by aligning learning tasks with students' diverse abilities and needs (Subandiyah et al., 2025; Zhao, 2026). Collectively, these studies confirm that teacher facilitation contributes to more active, adaptive, and learner-responsive education.

However, the existing literature still shows several limitations that need to be addressed. Many studies examine teacher facilitation through separate constructs, such as feedback, differentiation, autonomy support, formative assessment, or professional development, without integrating these elements into a coherent framework of teacher facilitative practice. Some studies focus primarily on student engagement or achievement, while the broader connection between facilitative teaching and holistic student development remains less explicitly theorized. In addition, research on student-centered learning often discusses pedagogical principles but gives limited attention to how teachers negotiate practical constraints, such as institutional assessment demands, classroom diversity, limited resources, and uneven professional readiness (Ahovi et al., 2026; Sancar et al., 2021). This creates a conceptual gap between the ideal of student-centered education and the concrete pedagogical roles required from teachers. Therefore, a more integrated discussion is needed to explain how teachers' facilitative roles can connect instructional guidance, feedback, differentiation, autonomy support, and professional competence in supporting students' holistic development.

Based on this gap, the present study aims to analyze how teachers' roles as learning facilitators can be reframed to support holistic student development in student-centered education. Specifically, this study seeks to synthesize relevant literature on teacher facilitation, identify key dimensions of facilitative teaching, and explain how these dimensions contribute to students' cognitive, motivational, social, and self-regulatory development. The theoretical contribution of this study lies in its effort to integrate fragmented discussions of feedback, differentiation, autonomy support, formative assessment, and professional development into a more coherent understanding of teacher facilitation. Practically, the study offers insights for teachers, schools, and policymakers in designing learning environments that are more responsive to students' needs and more aligned with the demands of 21st-century education. By strengthening the conceptual foundation of teachers as facilitators, this article is expected to contribute to the development of pedagogical practices that are not only student-centered in principle but also meaningful, adaptive, and sustainable in implementation.

B. Method

a. Research Design

This study employed a mixed-method descriptive design to examine teachers' roles as learning facilitators in supporting holistic student development within student-centered education. The quantitative component was used to measure the extent to which teachers performed facilitative roles in classroom instruction, while the qualitative component was used to interpret how these roles were enacted in real learning situations. A mixed-method design was selected because educational phenomena such as teacher facilitation, classroom interaction, feedback, and student engagement cannot be fully understood through a single source of data. Mixed-method research is particularly relevant in learning and instructional studies because it enables researchers to integrate numerical patterns with contextual explanations across multiple levels of educational practice (Mejeh et al., 2023). This design also aligns with the aim of the study, which is not to test an experimental treatment, but to describe and explain the facilitative practices of teachers in natural classroom settings. Therefore, the integration of questionnaire, observation, interview, and documentation data was expected to provide a more complete understanding of how teachers support active, meaningful, and learner-responsive instruction.

b. Research Setting and Time

The study was conducted in the context of elementary education, where the role of teachers as facilitators is central to the development of students' cognitive, social, emotional, and self-regulatory competencies. The research setting involved selected elementary school classrooms that implemented student-centered learning activities, including classroom discussion, group work, questioning, feedback, and individual learning assistance. The research was carried out during one academic semester to allow the researchers to observe the continuity of teachers' facilitative practices across several learning meetings. This setting was considered relevant because student-centered learning requires teachers to guide students not only in understanding subject

matter, but also in building confidence, participation, collaboration, and learning independence (Martin-Alguacil et al., 2024). Data collection was conducted after school permission had been obtained and after teachers and students had been informed about the purpose, procedures, and ethical principles of the study.

c. Population and Participants

The population of this study consisted of elementary school teachers and students involved in student-centered classroom learning. The participants were selected using purposive sampling because the study required teachers who had experience implementing active learning strategies and were willing to be observed during classroom instruction. The inclusion criteria for teacher participants were: actively teaching in elementary school, having experience conducting classroom discussion or group-based learning, being willing to complete the questionnaire, and agreeing to participate in classroom observation and follow-up interviews. Teachers who were not actively teaching during the data collection period or who did not provide consent were excluded from the study. Student participants were included as classroom members whose engagement, participation, and learning responses were observed during the instructional process. Purposive sampling was appropriate because this study focused on the quality, meaning, and contextual characteristics of facilitative teaching practices rather than on statistical generalization to a broad population (Campbell et al., 2020).

d. Research Instruments

The study used four main instruments: a teacher facilitation questionnaire, a classroom observation sheet, a semi-structured interview guide, and documentation analysis. The teacher facilitation questionnaire was designed to measure teachers' perceptions and reported practices related to facilitative teaching. The questionnaire indicators covered five dimensions: creating an active learning environment, providing formative feedback, facilitating discussion and collaboration, using learning media, and providing individual learning assistance. These dimensions were developed based on literature emphasizing that effective facilitation includes feedback, learner participation, classroom dialogue, differentiated support, and reflective instructional adjustment (Brooks et al., 2021; Li & Gu, 2024; Reznitskaya & Wilkinson, 2021). The classroom observation sheet was used to record teachers' actual facilitative behaviors during instruction, including how teachers asked guiding questions, encouraged student participation, clarified students' ideas, managed interaction, used media, and supported students with learning difficulties. The semi-structured interview guide was used to explore teachers' explanations regarding strategies, challenges, and institutional support related to their facilitative roles. Documentation analysis included lesson plans, teaching materials, learning media, and classroom activity records to support the interpretation of questionnaire, observation, and interview data.

e. Validity and Reliability of the Instruments

Instrument validity was established through content validation by experts in pedagogy, elementary education, and educational research methodology. The experts reviewed the relevance, clarity, representativeness, and linguistic appropriateness of each item in the questionnaire, observation sheet, and interview guide. Content validity was used because the instruments needed to represent the theoretical construct of teacher facilitation and its operational indicators in classroom practice. Content validation through expert judgment is widely used to ensure that instrument items are conceptually relevant and suitable for measuring the intended construct (Madadizadeh, 2023; Masuwai et al., 2024). The experts' feedback was used to revise ambiguous statements, remove overlapping items, and improve the alignment between indicators and research objectives. The reliability of the questionnaire was tested through a pilot study involving respondents with characteristics similar to the main participants. Internal consistency was examined using Cronbach's alpha, with a coefficient of 0.70 or higher considered acceptable for educational research instruments (Taber, 2018). For the classroom observation sheet, inter-rater reliability was strengthened by involving two trained observers who used the same observation rubric, followed by discussion to resolve scoring differences and improve consistency in classroom coding.

f. Data Collection Procedures

Data collection was conducted in several sequential stages. First, the researchers obtained permission from the school and explained the purpose, scope, and procedures of the study to all participants. Second, the research instruments were validated by experts and revised based on their suggestions. Third, the questionnaire was distributed to teacher participants to obtain initial quantitative data on their facilitative teaching practices. Fourth, classroom observations were conducted during learning activities to examine how teachers facilitated student participation, discussion, feedback, media use, and individual assistance. Classroom observation was

important because facilitative teaching is not only reflected in teachers' self-reports, but also in observable interactional practices such as questioning, scaffolding, dialogic support, and student participation (Reznitskaya & Wilkinson, 2021). Fifth, semi-structured interviews were conducted with selected teachers to clarify and deepen the findings obtained from the questionnaire and observation data. Sixth, supporting documents such as lesson plans, learning media, and teaching notes were collected to triangulate the data. All data were organized systematically, coded using participant labels, and stored securely to maintain confidentiality and research traceability.

g. Data Analysis Techniques

Quantitative data from the questionnaire and observation sheet were analyzed using descriptive statistics. The analysis included frequency, percentage, mean score, and standard deviation to describe the level of teachers' facilitative roles across the measured dimensions. The interpretation of mean scores was categorized into levels such as very low, low, moderate, high, and very high based on predetermined score intervals. If the data met the requirements for further analysis, comparisons between questionnaire and observation results could be conducted to examine the consistency between teachers' self-reported practices and observed classroom behavior. The quantitative analysis was supported by statistical software such as SPSS, Jamovi, or JASP to improve accuracy and transparency.

Qualitative data from interviews and documentation were analyzed using thematic analysis. The analysis began with repeated reading of interview transcripts and field notes to gain familiarity with the data. The researchers then conducted initial coding by identifying meaningful units related to teacher facilitation, student participation, feedback, media use, individual assistance, and implementation challenges. Similar codes were grouped into categories, and broader themes were developed to explain the patterns of facilitative teaching practices. Thematic analysis was appropriate because it allows researchers to identify, organize, and interpret patterned meanings across qualitative educational data (Braun & Clarke, 2021). The qualitative findings were used to explain, confirm, or elaborate the quantitative results. Data integration was conducted at the interpretation stage by comparing questionnaire scores, observation findings, interview explanations, and documentation evidence. This integration allowed the researchers to identify not only the extent of teachers' facilitative roles but also the pedagogical reasons, classroom conditions, and constraints behind those practices.

h. Ethical Considerations

This study was conducted in accordance with ethical principles in educational research. Participation was voluntary, and all participants were informed about the aims, procedures, potential benefits, and confidentiality of the study before data collection began. Written or verbal informed consent was obtained from teacher participants, while student involvement was limited to classroom observation without exposing their personal identities. The researchers ensured that participants could withdraw from the study at any stage without academic or professional consequences. All names of schools, teachers, and students were anonymized in the reporting of findings. Data were used only for academic purposes and stored securely to prevent unauthorized access. These ethical procedures were applied to protect participants' rights, minimize potential risks, and maintain integrity in educational research involving teachers and students (BERA, 2024).

Table 1. Alignment of Research Objectives, Data Sources, Instruments, and Analysis Techniques

Research Objective	Data Source	Instrument	Analysis Technique
To measure the extent of teachers' facilitative roles in student-centered learning	Teachers	Teacher facilitation questionnaire	Descriptive statistics
To observe teachers' facilitative practices during classroom instruction	Classroom learning activities	Classroom observation sheet	Descriptive statistics and field-note interpretation
To explore teachers' strategies, challenges, and support needs	Selected teachers	Semi-structured interview guide	Thematic analysis

Table 1 shows the methodological alignment between the research objectives, data sources, instruments, and analysis techniques. This alignment is important to ensure that each research objective is supported by appropriate empirical evidence. The questionnaire and observation sheet provide measurable information about teachers' facilitative practices, while interviews and documentation provide contextual explanations that help interpret the numerical findings. Through this alignment, the research procedure becomes more transparent, coherent, and replicable.

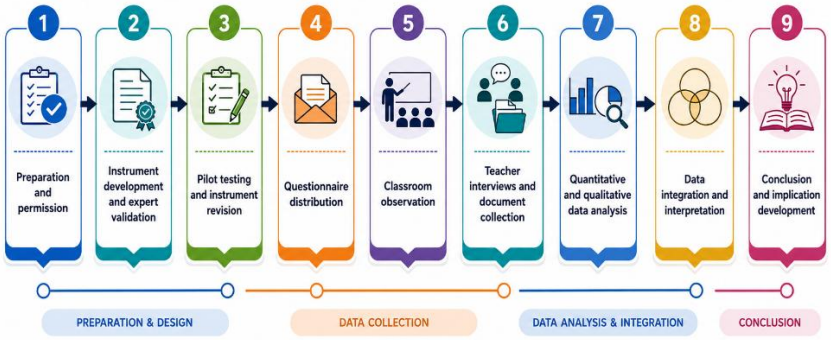

Figure 1. Research Procedure

Figure 1 illustrates the sequential procedure of the study, beginning with preparation and permission, followed by instrument development, validation, data collection, analysis, and interpretation. The procedure was designed to ensure that the study did not rely on a single data source. Instead, the integration of questionnaire, observation, interview, and documentation data enabled the researchers to produce a more balanced explanation of how teachers function as learning facilitators in student-centered classrooms.

C. Result and Discusion

a. Result

The findings of this study indicate that teachers' roles as learning facilitators were generally implemented positively in student-centered classroom learning. The facilitative role was reflected in several key dimensions, including the creation of an active learning environment, the provision of feedback, the facilitation of classroom discussion, the use of learning media, and individual learning assistance. These dimensions show that teachers did not merely function as transmitters of knowledge, but also acted as guides who supported students' participation, motivation, confidence, and learning independence. Students were encouraged to ask questions, express opinions, participate in discussions, and receive support when they experienced learning difficulties. Overall, the findings suggest that teacher facilitation contributed to a more interactive and meaningful classroom atmosphere. However, the use of learning media was identified as an area that still required improvement because it had not yet been implemented with sufficient variation and innovation.

1. Teachers' Facilitative Role in Creating an Active Learning Environment

The first finding shows that teachers were able to create learning conditions that encouraged students to participate actively in classroom activities. Teachers provided opportunities for students to ask questions, respond to learning materials, express ideas, and take part in classroom interaction. This practice indicates that the teacher's role as a facilitator helped reduce passive learning and supported a more student-centered classroom atmosphere. Student participation was visible through discussion involvement, willingness to answer questions, and confidence in communicating opinions. The classroom environment became more open because students were not only expected to receive information, but also to construct understanding through interaction. Therefore, the active learning environment became one of the main indicators of successful teacher facilitation.

The findings also show that active learning was closely related to students' motivation and confidence. When teachers provided encouragement and guidance, students became more willing to engage in learning tasks and classroom dialogue. Guiding questions helped students think more deeply and explain their ideas more clearly. This process supported students' cognitive development because they were encouraged to process, interpret, and communicate knowledge. At the same time, it supported their social development because they learned to interact with teachers and peers during the learning process. Thus, teacher facilitation contributed not only to classroom participation, but also to the development of students' confidence and communication skills.

2. Feedback as Support for Student Learning Development

The second finding concerns the role of feedback in supporting students' learning development. Teachers provided feedback orally and in written form to help students recognize their learning progress, strengths, and weaknesses. Oral feedback was commonly given during classroom interaction, particularly

when students answered questions, presented ideas, or completed learning activities. Written feedback was used to clarify mistakes, reinforce correct understanding, and provide direction for improvement. This shows that feedback functioned not only as correction, but also as a form of instructional guidance. Through feedback, students were helped to understand what they had achieved and what they needed to improve.

The feedback provided by teachers also had a motivational function. Students became more aware of their learning performance and were encouraged to improve after receiving teacher responses. Constructive feedback helped students view mistakes as part of the learning process rather than as failure. This condition supported the development of self-awareness and learning responsibility. However, the quality of feedback still needs to be strengthened so that it does not merely indicate whether an answer is right or wrong. Feedback should be more specific, process-oriented, and reflective so that students can understand the reasons behind their mistakes and develop better learning strategies.

3. Classroom Discussion and Collaborative Learning

The results also reveal that teachers were relatively active in facilitating classroom discussion. Discussion was used to encourage students to express opinions, respond to peers' ideas, and develop communication skills. In this process, teachers acted as guides who directed the discussion, clarified students' statements, and maintained the relevance of classroom interaction to the learning objectives. The facilitation of discussion helped students develop confidence in speaking and respect for different perspectives. It also created space for students to practice critical thinking because they were encouraged to explain, compare, and defend their ideas. Therefore, classroom discussion became an important strategy for strengthening both cognitive and social aspects of learning.

The effectiveness of discussion depended strongly on the teacher's ability to manage interaction. Teachers needed to provide questions that stimulated thinking, encourage less active students to participate, and ensure that dominant students did not control the entire discussion. The findings indicate that discussion can become an effective student-centered learning strategy when the teacher provides sufficient structure without dominating the process. This balance is important because facilitation requires teachers to guide learning while still giving students room to think independently. However, teachers still need to strengthen their questioning techniques and discussion management strategies. With stronger facilitation, classroom discussion can become a more powerful medium for developing students' reasoning, collaboration, and confidence.

4. Use of Learning Media

The use of learning media was identified as the aspect that still required the most improvement. The original findings indicate that media use was in a moderate category compared with other dimensions of teacher facilitation. Teachers had used learning media during instruction, but the media were not yet sufficiently varied, innovative, or fully aligned with students' different learning needs. In several learning situations, media were used mainly as supporting tools rather than as integral components of student-centered learning. This condition limited the potential of media to make abstract concepts more concrete, contextual, and engaging. Therefore, media use became an important area for pedagogical improvement.

The moderate level of media use suggests that teachers still need stronger competence in selecting, designing, and integrating instructional media into learning activities. Learning media should not only make lessons visually attractive, but also help students explore concepts, interact with materials, and participate actively in learning. When media are used appropriately, students can understand learning content through more concrete and meaningful experiences. However, when media are limited or used conventionally, their contribution to active learning becomes less optimal. This finding indicates that teacher facilitation must be supported by creativity, technological competence, and access to relevant learning resources. Therefore, professional development related to media design and technology-supported learning is necessary to strengthen the quality of facilitative teaching.

5. Individual Learning Assistance

Individual learning assistance emerged as the strongest aspect of teacher facilitation. Teachers provided special attention to students who experienced difficulties in understanding learning materials. This assistance was given through direct guidance, repeated explanation, clarification, and support adjusted to students' learning pace. Such practices show that teachers recognized differences in students' abilities and attempted to respond to them through personalized support. Individual assistance helped students feel more supported and

less anxious when facing learning challenges. As a result, this aspect contributed significantly to students' motivation, confidence, and learning independence.

The strength of individual assistance also shows that facilitative teaching is closely related to teachers' sensitivity to student diversity. Students do not learn at the same pace or through the same approach, so teacher support needs to be flexible and responsive. By providing individual guidance, teachers helped students overcome learning barriers and remain involved in classroom activities. This practice is important because students who experience difficulties may become passive if they do not receive appropriate support. The finding indicates that individual assistance can strengthen both academic understanding and emotional security in learning. Therefore, this dimension should be maintained and further developed as a central component of teacher facilitation.

Table 1. Summary of Findings on Teachers' Facilitative Roles

Dimension of Teacher Facilitation	Main Finding	Interpretation	Area for Improvement
Active learning environment	Teachers encouraged students to participate in classroom activities, ask questions, and express opinions.	Teacher facilitation supported a more interactive and student-centered classroom atmosphere.	Classroom interaction should be made more consistent across different learning activities.
Feedback provision	Teachers provided oral and written feedback to guide students' learning progress.	Feedback helped students recognize strengths, weaknesses, and areas for improvement.	Feedback should be more specific, reflective, and process-oriented.
Classroom discussion	Teachers facilitated discussion to develop communication, confidence, and critical thinking.	Discussion encouraged students to exchange ideas and respect different opinions.	Teachers need stronger questioning techniques and discussion management strategies.
Use of learning media	Learning media were used, but the variation and innovation were still limited.	Media use had not yet fully supported contextual, interactive, and student-centered learning.	Teachers need professional development in media design and technology integration.
Individual learning assistance	Teachers provided direct support to students who experienced learning difficulties.	Individual assistance was the strongest facilitative practice because it responded to student diversity.	This practice should be maintained and integrated with differentiated learning strategies.

Table 1 summarizes the main findings across five dimensions of teachers' facilitative roles. The table shows that teachers had performed several important facilitative practices, particularly in supporting active learning, providing feedback, facilitating discussion, and assisting students individually. The strongest finding was individual learning assistance, which indicates that teachers were responsive to students' different learning needs. However, the use of learning media remained less optimal and should become a priority for improvement. This summary confirms that teacher facilitation was generally positive, but still required reinforcement in instructional innovation and media-supported learning.

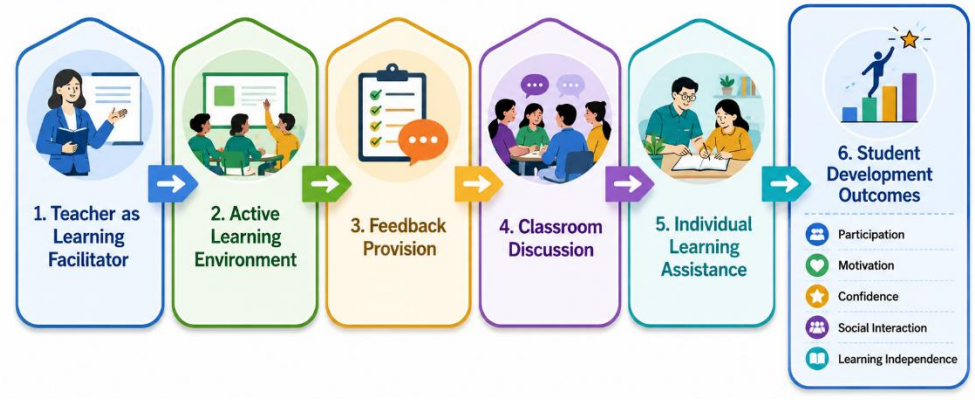

Figure 2. Integrated Findings on Teachers' Facilitative Roles in Student-Centered Learning

Figure 2 presents the integrated pattern of findings regarding teachers' facilitative roles in student-

centered learning. The figure illustrates that teacher facilitation begins with the teacher's ability to create an active learning environment, followed by the provision of feedback, facilitation of classroom discussion, and individual learning assistance. These interconnected practices support students' participation, motivation, confidence, social interaction, and learning independence. The figure also highlights that the use of learning media remains an area requiring improvement because the original findings indicate that media use was less optimal than other facilitative dimensions. Therefore, the figure does not function as a statistical visualization, but as a synthesis of the main empirical tendencies found in the study.

The integrated findings show that teacher facilitation is not a single instructional action, but a combination of pedagogical practices that work together to support holistic student development. Active learning creates opportunities for students to participate in classroom activities, while feedback helps them understand their learning progress. Classroom discussion strengthens communication and critical thinking, whereas individual assistance helps students overcome learning difficulties according to their needs. However, limited variation in learning media may reduce the potential of student-centered learning to become more contextual, interactive, and engaging. For this reason, strengthening teachers' competence in designing and using learning media should be considered an important follow-up to the findings of this study.

6. Overall Interpretation of the Results

Overall, the results demonstrate that teachers' facilitative roles supported the development of a more active, responsive, and student-centered learning process. Teacher facilitation contributed to students' participation, motivation, confidence, and learning independence by creating opportunities for interaction, reflection, and individualized support. The findings also show that facilitation cannot be reduced to one teaching technique because it involves several interconnected practices. Teachers need to guide learning, provide feedback, manage discussion, use media, and assist students according to their individual needs. Among these practices, individual learning assistance appeared as the strongest dimension, while media use remained the most important area for improvement. Therefore, optimizing teachers' roles as learning facilitators is essential for improving classroom learning quality and supporting holistic student development.

b. Discusion

The finding that teachers were able to create an active learning environment indicates that facilitative teaching functions as a mechanism for shifting students from passive reception to active participation. Conceptually, this supports the central premise of student-centered learning, which views students as active constructors of knowledge rather than as recipients of teacher-delivered information. When teachers provide opportunities for questioning, responding, discussing, and expressing ideas, they do more than manage classroom interaction; they redistribute learning agency to students. This finding is consistent with Martin-Alguacil et al. (2024), who argue that student-centered learning becomes meaningful when learners are given space to participate, reflect, and engage with learning tasks. It also aligns with Li et al. (2025) and Miao et al. (2023), who found that teacher support and autonomy-supportive practices contribute to stronger student engagement and self-efficacy. However, the present finding extends previous studies by showing that active learning is not only a matter of instructional strategy, but also a relational process shaped by teacher encouragement, classroom openness, and students' confidence to speak. This suggests that the teacher's facilitative role should be understood as a pedagogical condition that enables both cognitive engagement and socio-emotional participation.

The finding on feedback provision demonstrates that teacher facilitation contributes to student development when feedback is used as guidance for improvement rather than merely as correction. This interpretation is closely related to formative assessment theory, which emphasizes that feedback should help learners understand where they are, where they need to go, and how they can move forward. The results support Brooks et al. (2021), who showed that student-centered feedback can activate learners and improve learning achievement, and they are also consistent with Li and Gu (2024), who found that formative assessment can support self-regulated learning when teachers help students interpret and use feedback. Daumiller and Meyer (2025) further emphasize that feedback effectiveness depends not only on the message itself, but also on how learners process, accept, and act upon it. In this study, oral and written feedback appeared to help students recognize their learning strengths and weaknesses, yet the findings also imply that feedback still needs to become more specific, reflective, and process-oriented. This critical point is important because feedback that only identifies correct and incorrect answers may improve short-term task completion but may not sufficiently

develop students' metacognitive awareness. Therefore, the study contributes to feedback literature by positioning teacher feedback as a facilitative bridge between classroom interaction, learner reflection, and the development of learning responsibility.

The finding that teachers facilitated classroom discussion highlights the importance of dialogic interaction in student-centered education. From a sociocultural perspective, learning develops through interaction, language, and shared meaning-making, which means that discussion is not simply a classroom activity but a medium for cognitive and social development. The teacher's role in directing discussion, clarifying students' ideas, and maintaining relevance to learning objectives supports Reznitskaya and Wilkinson's (2021) view that teacher facilitation is crucial for improving the quality of student argumentation and classroom dialogue. This finding also corresponds with Goodwin et al. (2024), who explain that student-centered methods require structured opportunities for students to communicate, collaborate, and engage with ideas. Nevertheless, the results suggest that discussion is effective only when the teacher achieves a balance between guidance and autonomy. Excessive teacher control may reduce students' independence, whereas insufficient guidance may make discussion unfocused and less meaningful. Thus, this study extends prior work by emphasizing that productive discussion depends on the teacher's ability to maintain pedagogical structure while still protecting students' space for reasoning, questioning, and collaborative meaning-making.

The finding that the use of learning media remained less optimal provides a critical counterpoint to the generally positive pattern of teacher facilitation. While teachers were able to support participation, feedback, discussion, and individual assistance, the limited variation and innovation of learning media indicate that facilitative teaching still faces material, technological, and professional constraints. This finding is consistent with Sancar et al. (2021), who argue that teacher professional development must go beyond technical training and support teachers' reflective capacity to adapt pedagogy to contextual demands. It also relates to Vattøy (2025), who shows that digital and formative assessment practices require sustained professional learning rather than isolated exposure to technology. In the context of this study, learning media seemed to function more as supplementary tools than as integrated pedagogical resources for exploration, interaction, and contextual learning. This may be caused by limited access to media, insufficient training, time constraints, or teachers' uncertainty about how to connect media with student-centered pedagogy. Therefore, the finding modifies the optimistic view of facilitative teaching by showing that teacher intention alone is insufficient; effective facilitation also requires institutional support, pedagogical resources, and professional development that enables teachers to transform media into meaningful learning tools.

The strongest finding, namely individual learning assistance, indicates that teacher facilitation becomes most visible when teachers respond directly to students' diverse learning needs. This supports the theoretical foundation of differentiated instruction, which argues that students differ in readiness, pace, interest, and learning profile, so teachers need to adjust support accordingly. The finding is in line with Subandiyah et al. (2025), who found that differentiated instruction can improve student engagement and achievement by making learning more responsive to students' needs, and it also resonates with Zhao et al. (2026), who reported that differentiated instruction can strengthen academic performance, self-efficacy, and engagement. In this study, individual assistance appeared to reduce students' learning anxiety, increase confidence, and help students remain involved in classroom activities despite difficulties. However, this finding also needs to be interpreted critically because strong individual assistance can become unsustainable if it depends only on the personal commitment of teachers without adequate classroom structures, time allocation, and institutional support. The conceptual contribution of this study lies in showing that teacher facilitation is best understood as an integrated pedagogical ecology: active learning creates participation, feedback supports reflection, discussion builds reasoning and social interaction, media expands learning possibilities, and individual assistance responds to learner diversity. By integrating these dimensions, the study fills a gap in previous literature that often discusses facilitation through separate constructs and offers a more holistic perspective on how teachers support student development in student-centered education.

D. Conclision

This study concludes that teachers' roles as learning facilitators are central to the development of more active, responsive, and student-centered classroom learning. The findings show that facilitative teaching was reflected in five interconnected dimensions: creating an active learning environment, providing feedback, facilitating classroom discussion, using learning media, and offering individual learning assistance. Among

these dimensions, individual learning assistance emerged as the strongest aspect because it directly addressed students' diverse learning needs and helped strengthen their confidence, motivation, and learning independence. Active learning, feedback, and classroom discussion also contributed to students' participation, communication, reflection, and social interaction, indicating that teacher facilitation supports not only academic engagement but also broader aspects of holistic student development. However, the use of learning media remained the least optimal dimension, suggesting that student-centered learning still requires stronger instructional innovation, better media integration, and more systematic professional support for teachers.

The main contribution of this study lies in reframing teacher facilitation as an integrated pedagogical practice rather than as a single instructional strategy. The study shows that effective facilitation depends on the interaction between teacher guidance, learner participation, formative feedback, dialogic classroom practices, responsive assistance, and the availability of meaningful learning resources. Theoretically, this study extends the discussion of student-centered education by connecting teacher facilitation with holistic student development, especially participation, motivation, confidence, social interaction, and learning independence. Practically, the findings suggest that schools should strengthen teachers' professional development in feedback literacy, discussion management, differentiated support, and media-based learning design. Future studies are recommended to examine teacher facilitation using broader samples, comparative school contexts, and stronger empirical measures so that the relationship between facilitative teaching and student development outcomes can be tested more deeply and systematically.

E. Author Contributions Statement

Nur Sita Resmi contributed to the conceptualization of the study, formulation of the research focus, coordination of manuscript development, and final approval of the article. Sri Ramadhani contributed to the development of the theoretical framework, literature identification, and synthesis of previous studies related to teacher facilitation and student-centered learning. Yenni contributed to the design of the research method, including the alignment of research objectives, data sources, instruments, and analysis procedures. Manda Sari contributed to the preparation and refinement of the research instruments, including the teacher facilitation questionnaire, observation sheet, and interview guide. Ersa Sule contributed to data organization, documentation analysis, and the interpretation of findings related to classroom interaction and learning media. Febrianti Rahim contributed to the analysis of findings related to feedback provision, discussion facilitation, and individual learning assistance. Enjelina Roya Brigita contributed to drafting the results section, preparing the summary of findings, and supporting the development of the research figures and tables. Sisilia Sanda contributed to drafting the discussion section, strengthening the connection between findings, theory, and previous studies, and improving the academic coherence of the manuscript. Ekrila Burniva contributed to editing, reference checking, language refinement, formatting adjustment, and preparation of the final manuscript for submission. All authors reviewed the manuscript, approved the final version, and agreed to be accountable for the accuracy and integrity of the work.

F. Reference

Ahovi, E., & Quansah, F. (2026). A LEARN model for aligning learner-centred education with national assessment systems. Discover Education, 5, Article 287. https://doi.org/10.1007/s44217-026-01311-5

BERA. (2024). Ethical guidelines for educational research (5th ed.). British Educational Research Association. https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2024

Braun, V., & Clarke, V. (2021). Thematic analysis: A practical guide. SAGE.

Brooks, C., Burton, R., van der Kleij, F., Ablaza, C., Carroll, A., Hattie, J., & Neill, S. (2021). Teachers activating learners: The effects of a student-centred feedback approach on writing achievement. Teaching and Teacher Education, 104, Article 103387. https://doi.org/10.1016/j.tate.2021.103387

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: Complex or simple? Research case examples. Journal of Research in Nursing, 25(8), 652–661. https://doi.org/10.1177/1744987120927206

Daumiller, M., & Meyer, J. (2025). Advancing feedback research in educational psychology: Insights into feedback processes and determinants of effectiveness. Contemporary Educational Psychology, 81, Article 102390. https://doi.org/10.1016/j.cedpsych.2025.102390

Goodwin, J. R., Iskratsch, T., & Perera, V. (2024). What's the difference? A comparison of student-centered teaching methods. Education Sciences, 14(7), Article 736. https://doi.org/10.3390/educsci14070736

Li, J., & Gu, P. Y. (2024). Formative assessment for self-regulated learning: Evidence from a teacher continuing professional development programme. System, 125, Article 103414. https://doi.org/10.1016/j.system.2024.103414

Li, L., & Zeng, D. (2025). Effect of teacher autonomy support on student engagement in physical education classrooms in a blended learning environment: The mediating role of performance expectancy and academic self-efficacy. BMC Psychology, 13, Article 475. https://doi.org/10.1186/s40359-025-02685-1

Lindström, P. N., Bringsén, Å., & Melén, M. (2025). Models for student-centered educational culture: Holistic University Systems for a Student-Centered Educational Culture (HOLUS) and Co-Created Student-Educator Engagement Model (CO-SEEM). Studies in Higher Education. Advance online publication. https://doi.org/10.1080/03075079.2025.2596124

Madadizadeh, F., & Bahariniya, S. (2023). Tutorial on how to calculating content validity of scales in medical research. Perioperative Care and Operating Room Management, 31, Article 100315. https://doi.org/10.1016/j.pcorm.2023.100315

Martin-Alguacil, N., Avedillo, L., Mota-Blanco, R., & Gallego-Agundez, M. (2024). Student-centered learning: Some issues and recommendations for its implementation in a traditional curriculum setting in health sciences. Education Sciences, 14(11), Article 1179. https://doi.org/10.3390/educsci14111179

Masuwai, A., Tajudin, N. M., & Saad, N. S. (2024). Evaluation of content validity and face validity of secondary school Islamic education teacher self-assessment instrument. Cogent Education, 11(1), Article 2308410. https://doi.org/10.1080/2331186X.2024.2308410

Mejeh, M., Hagenauer, G., & Gläser-Zikuda, M. (2023). Mixed methods research on learning and instruction: Meeting the challenges of multiple perspectives and levels within a complex field. Forum Qualitative Sozialforschung / Forum: Qualitative Social Research, 24(1), Article 14. https://doi.org/10.17169/fqs-24.1.3989

Miao, J., Chang, J., & Ma, L. (2023). Teacher autonomy support influence on online learning engagement: The mediating roles of self-efficacy and self-regulated learning. SAGE Open, 13(4), 1–13. https://doi.org/10.1177/21582440231217737

Reznitskaya, A., & Wilkinson, I. A. G. (2021). The Argumentation Rating Tool: Assessing and supporting teacher facilitation and student argumentation during text-based discussions. Teaching and Teacher Education, 106, Article 103464. https://doi.org/10.1016/j.tate.2021.103464

Sancar, R., Atal, D., & Deryakulu, D. (2021). A new framework for teachers' professional development. Teaching and Teacher Education, 101, Article 103305. https://doi.org/10.1016/j.tate.2021.103305

Subandiyah, H., Nasrullah, R., Ramadhan, R., Supratno, H., Raharjo, R. P., & Lukman, F. (2025). The impact of differentiated instruction on student engagement and achievement in Indonesian language learning. Cogent Education, 12(1), Article 2516378. https://doi.org/10.1080/2331186X.2025.2516378

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. Research in Science Education, 48, 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

Vattøy, K.-D., & Gamlem, S. M. (2025). Navigating formative assessment as professional development in digital contexts: Insights from teachers' experiences. Teacher Development, 29(2), 343–360. https://doi.org/10.1080/13664530.2024.2382956

Zhao, S., Li, Y., & Chen, X. (2026). Differentiated instruction in primary after-school science education: Effects on students' academic performance, self-efficacy, and learning engagement. The Journal of Educational Research. Advance online publication. https://doi.org/10.1080/00220671.2026.2634836