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Bridging Theory and Practice: The Implementation of Case-Based Contextual Teaching and Learning in Higher Education

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Abstract:
Perubahan paradigma pendidikan tinggi menuntut inovasi pedagogis yang mampu menghubungkan teori dengan praktik secara kontekstual. Penelitian ini mengkaji implementasi model Contextual Teaching and Learning (CTL) melalui penugasan berbasis studi kasus untuk meningkatkan keterlibatan dan berpikir kritis mahasiswa Program Studi Teknologi Pendidikan PSDKU UNESA. Menggunakan desain kualitatif deskriptif, data dikumpulkan melalui observasi, wawancara, dan analisis dokumen pada 87 mahasiswa selama delapan sesi perkuliahan. Analisis dilakukan dengan model interaktif Miles & Huberman yang meliputi reduksi, penyajian, dan verifikasi data. Hasil penelitian menunjukkan bahwa perencanaan dan pelaksanaan pembelajaran telah selaras dengan prinsip CTL yang menekankan keterkaitan teori–praktik, refleksi, serta kolaborasi. Mahasiswa menunjukkan peningkatan signifikan dalam partisipasi kognitif, afektif, dan sosial, dengan respons positif terhadap relevansi pembelajaran terhadap kompetensi profesional. Faktor pendukung utama meliputi kesiapan dosen, dukungan institusi, dan autentisitas kasus, sementara kendala muncul pada keterbatasan waktu dan sarana teknologi. Temuan ini menegaskan efektivitas CTL berbasis studi kasus sebagai pendekatan yang memperkuat pembelajaran bermakna dan relevan dengan dunia kerja, serta merekomendasikan perluasan penerapannya pada konteks perkuliahan lain di pendidikan tinggi.

The shifting paradigm of higher education demands pedagogical innovation that connects theory and practice contextually. This study examines the implementation of the Contextual Teaching and Learning (CTL) model through case study-based assignments to enhance student engagement and critical thinking in the Educational Technology Study Program at PSDKU UNESA. Using a descriptive qualitative design, data were collected through observation, interviews, and document analysis with 87 students during eight lecture sessions. Analysis was conducted using the Miles & Huberman interactive model, which included data reduction, presentation, and verification. The results indicate that learning planning and implementation aligned with CTL principles, which emphasize the link between theory and practice, reflection, and collaboration. Students demonstrated significant improvements in cognitive, affective, and social participation, with positive responses regarding the relevance of learning to professional competencies. Key supporting factors included lecturer readiness, institutional support, and case authenticity, while challenges

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included limited time and technological resources. These findings confirm the effectiveness of case study-based CTL as an approach that fosters meaningful and workplace-relevant learning and recommend expanding its application to other higher education contexts.

Keywords: contextual teaching and learning; case studies; contextual learning; educational technology; higher education.

INTRODUCTION

In the context of higher education, the digital transformation reshapes pedagogical frameworks, necessitating students to develop critical thinking, problem-solving, and contextual skills to navigate an increasingly complex world. Álvarez-Huerta et al. highlighted that fostering creativity and encouraging student engagement play vital roles in enriching educational outcomes, particularly through reflective learning, which connects academic content to personal experiences and societal issues (Álvarez-Huerta et al., 2021). Additionally, the integration of the Contextual Teaching and Learning (CTL) model emphasizes this connection by bridging theory to practice, allowing students to see immediate relevance in their studies and increasing motivation for learning. Researchers findings reaffirm that students' understanding of the broader context of educational materials significantly enhances their motivation and engagement across disciplines (Gardiner, 2020).

The importance of contextual learning is further highlighted through the emphasis on creativity as a critical skill in addressing complex problems. Current literature suggests that encouraging environments which promote reflection and mindfulness can cultivate creative confidence among students, leading to improved problem-solving abilities (Henriksen et al., 2020). Furthermore, Mavri et al. (2020) noted that collaborative learning experiences, which connect students with industry professionals, can enhance their creative capacities and social competencies essential for future workplace environments. Therefore, the CTL model serves as an effective pedagogical approach that links academic learning to practical application while fostering essential competencies such as creativity and critical thinking, which are vital for success in the contemporary educational landscape (Llamas et al., 2019).

The case study approach implements the Contextual Teaching and Learning (CTL) model, bridging theoretical concepts and practical applications through authentic situations. Case studies compel students to engage with material and apply classroom knowledge to complex scenarios. Škėrienė & Jucevičienė (2020) emphasize that this approach enhances critical thinking and develops problem-solving skills essential in contemporary education, altering how students perceive and engage with learning environments. These situations encourage learners to address real-world problems, cultivating understanding that traditional methods often fail to achieve. The integration of case studies enables collaborative exploration among students, aligning with Mavri et al. (2020)'s findings that enhanced feedback mechanisms boost students' confidence and creativity, preparing them for professional interactions. As students analyze cases, they navigate complex problems while considering diverse perspectives, reflecting a holistic learning experience that traditional methods may overlook. Additionally, while Ye et al. indicate that reflective practices enhance critical thinking capabilities, their focus is on virtual reality-based learning environments rather than traditional case studies (Ye et al., 2022). Thus, while the case study approach aligns with CTL principles, the reference to Ye et al. may not fully support the claim. Nevertheless, the case

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study framework remains invaluable for cultivating professional competencies necessary in today's evolving landscape.

Many issues exist in higher education lectures that prevent meaningful and contextual learning. Textual delivery of theory is still the norm, and life applications are not optimal. Students are frequently passive consumers of information rather than active learners. This situation reduces student cognitive and affective involvement and theory-based problem-solving. Thus, learning loses relevance to industrial needs, requiring innovation through a case study-based Contextual Teaching and Learning (CTL) methodology. Learning innovations that connect theory and practice are the core of PSDKU Unesa research, especially the Educational Technology Study Program. Educational Technology students must think critically and address real-world educational difficulties. However, theoretical lectures underdevelop application skills. Strategically implementing CTL through case study assignments positions students as active learners who gain understanding through authentic experiences (Álvarez-Huerta et al., 2021). Students can internalise digital transformation-related professional competencies by applying educational technology principles to real-world challenges (Budiarto, Asrowi, et al., 2024). Case study-based CTL is essential to contextual learning and professional skill development.

Recent research has highlighted the effectiveness of Contextual Teaching and Learning (CTL) and case-based learning in higher education for enhancing student engagement, critical thinking, and problem-solving skills. A study by Álvarez-Huerta et al. (2021) found that environments fostering reflective and integrative learning enhance students' creative self-concept and critical thinking capabilities. Martí et al. (2018) demonstrated that students engaging in reflective thinking through mediated narratives reported higher satisfaction compared to traditional methods. These findings align with literature showing that case-based learning, bridging theoretical knowledge with practical application, promotes deeper understanding in higher education contexts. The evidence underscores CTL and case-based learning as effective methodologies for enhancing higher education outcomes globally.

Contextual Teaching and Learning (CTL) has been widely used in primary and secondary education, but research on its implementation in higher education, particularly in Educational Technology study programs, is scarce. The contextual factor, which emphasizes active student interaction in authentic circumstances, has not been studied as much as conceptual features and cognitive learning outcomes (Llamas et al., 2019; Tamur et al., 2020). However, context-based learning can improve students' critical and reflective thinking (McGuire & Lay, 2019). Incorporating CTL with a case study approach can enhance theory-practice connections by simulating real-life professional issues (Budiarto, Rahman, et al., 2024). Using the case study-based CTL paradigm in Educational Technology courses to examine how it can improve students' cognitive, affective, and reflective involvement in PSDKU UNESA is unique. The study of the Contextual Teaching and Learning model in higher education will enhance the field of Educational Technology by examining its effectiveness through a case study approach (Gardiner, 2020; Álvarez-Huerta et al., 2021). This study should help lecturers design context-based learning that encourages students to be active, think critically, and relate course material to professional and real-life experiences. This study may promote 21st-century educational innovations in improving future Educational Technology graduates' professional competencies. This study examines PSDKU UNESA's Educational Technology Study Program's application of the Contextual Teaching and Learning (CTL) paradigm in higher education based on background and theoretical studies. This study examines PSDKU UNESA undergraduate

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students' contextual learning through case study-based assignments, including design, implementation, participant responses, and supportive and inhibiting factors. Following these objectives, this research is divided into numerous questions:

1. How do lecturers plan learning using a contextual model through case study-based assignments?
2. How did contextual learning take place during the eight lecture sessions of PSDKU UNESA Educational Technology students?
3. How did lecturers and students respond to the implementation of the case study-based contextual learning model?
4. What factors support and hinder the implementation of this model?

METHOD

This descriptive qualitative study describes the use of the Contextual Teaching and Learning (CTL) model in case study-based assignments for Educational Technology Study Program students at UNESA PSDKU. The selected strategy coincides with the research's focus on natural context and social interactions in the classroom, where participants' meanings shape learning phenomena (Cresswell et al., 2003). Descriptive qualitative research captures contextual learning techniques' planning, implementation, student and lecturer responses, and supporting and inhibiting elements in real-life circumstances. Lecture and interview data were thematically evaluated to understand how case study-based CTL deployment improves student engagement and meaningful learning. The first-semester Educational Technology Study Program at the State University of Surabaya (UNESA) PSDKU featured 91 undergraduates (Miles et al., 2018). This class was chosen because it analyzes educational issues using case study-based learning and the Contextual Teaching and Learning approach.

The investigation was conducted at PSDKU UNESA to monitor professors and students naturally. The study triangulated sources and methods using learning observations, in-depth interviews, and document analysis. Over eight meetings, organized observation sheets were used to document CTL model implementation through case studies, focusing on CTL methods, student interactions, task involvement, and learning reflections. Professors and students were interviewed on the CTL model, case studies, and implementation. CTL compliance was assessed by document analysis of the RPS, LKM, assignment sheets, and evaluation rubrics. Triangulation merged data based on credibility, transferability, dependability, and confirmability (Aspers & Corte, 2021). The project should provide an overview of contextual learning for PSDKU UNESA Educational Technology students using case studies.

The research instrument was designed to guide the data collection process and maintain focus on the research objectives and questions. In this study, the instruments consisted of an observation guide, an interview guide, and a document analysis sheet. The instrument grid was designed to assess four main focuses: (1) contextual learning planning, (2) CTL implementation through case studies, (3) lecturer and student responses, and (4) supporting and inhibiting factors in model implementation.

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Table 1. Research Instrument Grid

No	Research Focus	Indicator	Data Sources	Collection Techniques
1	CTL learning planning	Lecturers design context-based activities and case studies. Teaching materials (RPS, LKM, rubrics) reflect CTL principles are available.	Lecturers, RPS documents, LKM	Interviews, document analysis
2	Implementation of CTL learning	Students actively participate in case analysis and group discussions. Learning connects theory to real-world situations. The lecturer acts as a reflective facilitator.	Students, lecturers	Observation, interview
3	Participant responses to the model	Students demonstrated emotional and cognitive engagement. The instructor assessed increased participation and conceptual understanding.	Students, lecturers	Interviews, observations
4	Supporting and inhibiting factors	Availability of facilities and institutional support. Lecturer pedagogical competence. Student motivation and readiness.	Lecturers, students	In-depth interview

Adaptation of research (Solissa et al., 2023)(Yadav & Oyelere, 2020)(Afni & Hartono, 2020)

The interactive model from Miles et al. (2018) was utilized for data analysis, consisting of three stages: data reduction, display, and conclusion drawing/verification. In the data reduction step, researchers chose, focused, and simplified data from observations, interviews, and document analysis to find key trends in case study-based Contextual Teaching and Learning (CTL) model implementation. Matrixes, charts, and theme narratives showed category correlations from limited data. Conclusion drawing and verification involved identifying the major themes that addressed the study questions and member checking to ensure analysis results legitimacy.

RESULTS

This section delineates the findings of a study examining the application of the Contextual Teaching and Learning (CTL) paradigm via case study assignments for undergraduate students in the Educational Technology Study Program PSDKU UNESA during eight lecture sessions. The analysis concentrates on four primary components that correspond with the research questions: learning planning, execution of contextual activities, reactions from students and lecturers, and factors that facilitate or hinder implementation. The data are thematically analyzed based on observations, interviews, and educational documents, subsequently presented through narratives, tables, and illustrations that enhance comprehension, allowing readers to discern the application and impact of the case study-based CTL model on student engagement and learning experiences in authentic contexts.

Case Study Based CTL Learning Planning

The lecturer created the lesson plan by incorporating Contextual Teaching and Learning (CTL) concepts via a case study method pertinent to the Educational Technology domain. An review of the Semester Learning Plan (RPS) document and comprehensive interviews with the

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lecturer revealed that the planning commenced with the identification of learning outcomes that prioritize students' capacity to contextually analyze educational issues and devise technology-driven solutions. The lecturer devised eight sessions with a systematic, progressive structure: commencing with an introduction to fundamental CTL concepts and basic case analysis in the initial session, advancing to solution design skills in the intermediate session, and culminating in the resolution of a complex case concerning technology integration in learning in the concluding session. The selection of case studies was predicated on three primary criteria: the authenticity of the problem arising from a real-world context, relevance to the professional challenges encountered by Educational Technology graduates, and complexity suitable for the cognitive level of students in the current semester. The lecturer indicated, "I selected cases that transpired in our partner schools, encompassing the digital literacy gap and difficulties in deploying learning technology, to instill in students the urgency of addressing genuine problems with immediate consequences" (Lecturer Interview, October 15, 2024).

The integration of planning with CTL principles is apparent in the learning design, which explicitly connects theory to practice through diverse learning modalities. Each case study is organized within a Student Worksheet (SWP) that includes a description of the real-life scenario, contextual supporting facts, guiding questions for critical analysis, individual reflection prompts, and instructions for group cooperation. Instructors develop educational activities that incorporate seven components of Contextual Teaching and Learning (CTL), including constructivism via group discussions to foster collective understanding, inquiry through comprehensive investigations into underlying causes, questioning through reflective Q&A sessions, a learning community through collaborative efforts and peer evaluations, modeling through presentations of innovative solutions, reflection through weekly learning journals, and authentic assessment through a rubric-based holistic evaluation. The assessment rubric is multidimensional, with the following weightings: case analysis and problem identification (30%), creativity and solution innovation (25%), collaboration and group contribution (20%), individual critical reflection (15%), and presentation and communication quality (10%). Analysis of the SWP materials reveals that each meeting possesses distinct learning objectives that directly connect theoretical competencies to practical applications, demonstrating the lecturers' dedication to fostering meaningful learning in accordance with the CTL concept.

Table 2. CTL Learning Planning Flow Based on Case Studies

Meeting	Focus of Material	Case study	Main Activities	CTL Principles
1-2	Basic concepts of CTL and learning needs analysis	Case: The digital literacy gap in rural elementary schools	Group discussion, problem identification, requirements mapping	Relating, Experiencing
3-4	Designing educational technology-based solutions	Case: Implementing an LMS in a high school with limited infrastructure	Design simulation, peer review, prototyping	Applying, Cooperating
5-6	Evaluating and adapting contextual learning	Case: Evaluating the effectiveness of interactive learning media	Case data analysis, critical reflection, design revision	Transferring, Reflecting
7-8	Integrating holistic solutions and presentations	Complex case: Post-pandemic digital transformation of schools	Solution presentation, panel discussion, comprehensive reflection	Cooperating, Transferring, Reflecting

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Implementation of Contextual Learning

The eight meetings' learning displayed CTL-based interaction dynamics. Each meeting started with apperception and an introduction to the case study context (15 minutes), then small-group case analysis, plenary discussion, and collaborative solution construction (90 minutes), and ended with individual reflection and a learning summary (15 minutes). The professor facilitated the conversation by asking "Why does this phenomenon occur in the context of this school?" and "How can learning theory explain this problem?" without answering. In the 5th to 8th meetings, 78% of students asked critical questions and applied theory to real-life scenarios, demonstrating cognitive engagement. Student enthusiasm in arguing ideas increased discussion intensity from 12 minutes each group in the initial meeting to 25 minutes in the last meeting, indicating affective involvement. Socially, students collaborated maturely, with organic role assignments and spontaneous peer teaching as they presented concepts. One student said, "I understand better when discussing real-life cases with friends, because we can see the problem from different perspectives" (Student Interview, October 28, 2024). Student reflection improved from listing learning experiences in the first meeting to critical reflection linking learning to professional development plans in the last meeting.

Table 3. CTL Learning Activities During Eight Meetings

Meeting	Student Activities	Forms of Collaboration	Reflection	Dominant Involvement
1	Reading and understanding digital literacy gap cases	Group discussion (4-5 people), problem brainstorming	Journal: Initial experiences understanding CTL	Cognitive (conceptual understanding)
2	Root problem analysis and mapping of learning needs	Collaborative mapping, division of analysis tasks	Journal: Difficulty identifying problems	Cognitive and Social
3	Designing a prototype learning technology solution	Collaborative design, sketching solution ideas	Reflection: Creativity in design	Cognitive and Affective
4	Peer review and revision of the solution design	Group rotation, providing constructive feedback	Journal: Learning from peer criticism	Social & Affective
5	Simulation of solution implementation and evaluation	Implementation role-play, discussing field obstacles	Reflection: Challenges in applying theory	Cognitive, Affective & Social
6	Analysis of evaluation data and solution adaptation	Collaborative analysis of case data, strategy revision	Journal: The importance of contextual evaluation	Cognitive & Social
7	Finalization of holistic solutions for complex cases	Integration of group results, report preparation	Reflection: Learning synthesis	Cognitive & Social
8	Solution presentation and panel discussion	Group presentation, cross-group Q&A, comprehensive reflection	Final reflection: Theory-practice-professional connection	Cognitive, Affective & Social

Lecturer and Student Responses

In-depth interviews with students and lecturers revealed a positive response to the implementation of case study-based CTL learning, despite some challenges during the initial adaptation phase. Students reported that the case study approach increased their motivation to learn because they could immediately see the relevance between theory and the professional practices they would encounter. Initially, students struggled to analyze complex and

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multidimensional cases, in contrast to conventional learning, which tends to be linear and memorization-based. However, they acknowledged significant benefits, including improved critical thinking skills in analyzing problems from multiple perspectives, collaboration skills through group discussions, and deeper reflection on their own learning processes. From the lecturer's perspective, the implementation of case study-based CTL provided pedagogical satisfaction due to increased student engagement and a more comprehensive quality of learning outcomes. Lecturers observed a transformation in classroom interactions, where students were no longer passive recipients of information but were actively constructing knowledge through collaborative investigation and critical dialogue. However, lecturers faced operational challenges such as the need for more intensive preparation time to design authentic cases, difficulties managing discussions in large classes, and the need for additional support for students who struggled to transition from passive to active learning. However, these efforts were considered to be commensurate with the achievement of meaningful learning.

Table 4. Student and Lecturer Responses and Perceptions of Case Study-Based CTL Learning

Theme	Student Response Quotes	Lecturer Response Quote
Motivation and Learning Relevance	"I'm more motivated because these cases are similar to problems I might face when I work in school, so it feels more meaningful than just memorizing theory." (M-23, female)	"I've seen a significant change in student enthusiasm. They come to class better prepared and eager to discuss, a stark contrast to previous semesters." (Lecturer, interview, November 5, 2024)
Improving Critical Thinking	"At first, analyzing cases was difficult because I had to think from multiple perspectives, but now I've become more critical and don't immediately believe in just one solution." (M-45, male)	"The quality of students' analysis has improved dramatically. They're not just describing problems, but are able to identify root causes and propose evidence-based solutions." (Lecturer, interview, November 5, 2024)
Collaboration Skills	"Group discussions became more lively because everyone had different opinions on the case. We learned to listen and combine ideas for better solutions." (M-67, female)	"Group work has become more organic and productive. Students are teaching each other instead of relying on one person, demonstrating true collaboration." (Lecturer, interview, November 5, 2024)
Difficulties and Challenges	"At the beginning of the semester, I was confused because there weren't any definitive answers from the lecturer. But over time, I understood that this learning process trains us to find our own solutions." (M-12, male)	"The biggest challenge is managing 87 students in a large class discussion. I have to ensure that every group gets their attention, and this requires extra energy." (Lecturer, interview, November 5, 2024)
Benefits of Reflection	"The reflection journal helped me become aware of my own thought processes. I learned which areas were weak and needed improvement." (M-58, female)	"The students' reflection journals show incredible depth of thought. I can see their metacognitive development from week to week." (Lecturer, interview, November 5, 2024)
Theory-Practice Connection	"Now I can connect the theories I've learned to real-life situations. When I read news about education, I can immediately analyze them using the concepts I've learned." (M-34, female)	"This is the main goal of CTL: students don't just know the theory, but can apply it. I see them starting to think like practitioners, not just academics." (Lecturer, interview, November 5, 2024)
Workload	"It's certainly harder than regular lectures, but I feel like I've learned more. It's tiring but satisfying because there are visible results." (M-76, male)	"The preparation is indeed much more intensive—designing cases, rubrics, facilitating discussions—but the optimal learning outcomes are well worth it." (Lecturer, interview, November 5, 2024)

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Supporting and Inhibiting Factors in the Implementation of Case Study-Based Contextual Learning

In the PSDKU UNESA Educational Technology Study Program, supportive and inhibiting elements define the learning ecosystem for case study-based CTL learning. Strong institutional support, such as the PSDKU UNESA policy that fosters learning innovation, and suitable technology infrastructure, such as LCD projectors, dependable internet connectivity, and classrooms for group discussions, are crucial. Effective classroom management requires lecturers' CTL knowledge and discussion facilitation skills. The concept is further strengthened by students' intrinsic drive, especially when they see how learning relates to professional competencies. Authentic case studies from partner schools and the lecturers' network with education practitioners enrich the learning experience. However, implementation confronts substantial challenges. Limited meeting duration (120 minutes per session) hinders in-depth discussions and reflection. Ready students unaccustomed with constructivist learning are initially disoriented. Limited group laptops and inconsistent internet connections limit access to digital instructional resources. Students have trouble applying academic theory to field practice, especially social, cultural, and political problems. Without teaching assistants, lecturers had to build authentic examples, develop holistic rubrics, and provide 87 students personalized comments, which made this strategy unsustainable. However, these efforts were necessary for meaningful learning that developed students' critical, collaborative, and reflective skills.

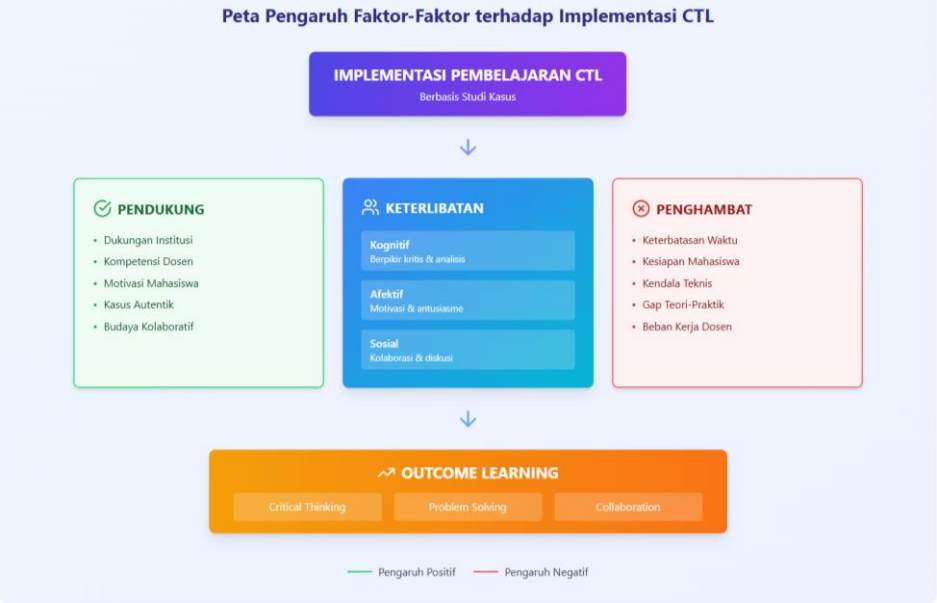

Figure 1. Supporting and Inhibiting Factors in the Implementation of Case Study-Based CTL Learning

DISCUSSION

Research on case study-based Contextual Teaching and Learning (CTL) for undergraduates at PSDKU UNESA's Educational Technology Study Program is presented here. This part connects observations, interviews, and document analysis to higher education CTL theory, literature, and practice. Planning, implementation, student and lecturer responses, and supportive and inhibiting factors affect contextual learning performance. This critical and

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comprehensive interpretation shows how case study-based CTL improves student engagement, critical thinking, cooperation, and professional relevance in the changing higher education environment. The Educational Technology Study Program at PSDKU UNESA integrates systematic instructional design with contextual learning principles by designing and implementing learning using the case study-based Contextual Teaching and Learning (CTL) methodology. Lecturers used authentic case studies, competency-based assessment rubrics, and reflective assignments to assess students' critical and collaborative thinking skills during planning to emphasize theory and practice. This technique embodies CTL's goal of meaningful learning based on real-life experiences and applicable to students' careers (Ulum & Syafi'i, 2022; Tarwi & Naimah, 2022). Student participation in group discussions, case presentations, and joint reflections grew during the eight meetings, improving cognitive, affective, and social elements. The initial adaption phase was difficult for students inexperienced with active learning, requiring instructor assistance to build confidence and preparation for autonomous learning. Intrinsic motivation from the material's relevance to the workplace and a collaborative learning environment that encouraged introspection and innovation also increased student engagement. Thus, contextual planning and participatory execution are the major factors that make case study-based CTL beneficial in promoting educational technology students' critical thinking and professionalism.

However, data shows that lecturers and students liked case study-based CTL learning. Students found learning more relevant and difficult since it linked theory to real-world application, and lecturers saw more student participation and critical thinking. Despite adaptation and preparation issues, both sides found this technique beneficial in producing more meaningful and contextual learning. Due to the demands for greater engagement, critical thinking, and self-directed learning, students transitioning from passive to active learning often experience discomfort, resistance, and confusion (Shin, 2018). Active learning demands more cognitive effort, so students may feel like they are learning less even though their outcomes are better. Research indicates that context-based learning and real-life experiences can boost students' intrinsic motivation, curiosity, and personal pleasure, which is crucial for adaptability (A. Ali et al., 2024; Julià & Antolí, 2019). Structured and continual reflection is essential for students to comprehend their learning process, identify gaps, and apply information to real-life experiences, boosting confidence (Awidi & Klutsey, 2025; Raković et al., 2021; Chang, 2019). To help students adapt and benefit from context-based learning, lecturers must provide psychological support, create a safe space for expressing opinions, and gradually guide them through reflection and active learning.

Interactive learning environments, institutional support, lecturer competence, student preparation, and enough resources promote contextual-based learning (CTL) with case studies. Discussion groups, relevant learning media, and a comfortable classroom can boost student involvement and motivation (Nurhanipah et al., 2025; Faqih & Fauziyyah, 2025). CTL success depends on lecturer skill, including CTL knowledge, originality, teaching experience, and the ability to apply content to real-world situations. Time restrictions, lack of teacher preparation, and restricted learning media must be addressed with institutional assistance including ongoing training, curriculum flexibility, and resource allocation (N. Ali et al., 2025; Tarwi & Naimah, 2022). CTL efficacy also depends on student preparation, including motivation, prior knowledge, and learning interests (Ulum & Syafi'i, 2022; Rifa'i et al., 2022). Lack of lecturer training, restricted learning time, resources, administrative restraints, and a tight curriculum are common hurdles. Improving lecturer training and professional development, strengthening

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educator collaboration, adapting the curriculum to be more flexible, and creatively using local resources and technology can help overcome these obstacles. Case study-based CTL implementation in various educational contexts will be more effective when supportive elements and attempts to overcome hurdles work together.

This research theoretically enhances the examination of the Contextual Teaching and Learning (CTL) model's application in higher education via case study-based learning that synthesizes theory and practice. These findings reinforce CTL as an efficacious method for cultivating students' critical and collaborative thinking abilities. The research offers guidelines for educators to develop context-based learning through authentic assignments and an engaging classroom atmosphere. The research findings indicate that the application of case study-based Contextual Teaching and Learning (CTL) in the Educational Technology Study Program at PSDKU UNESA is helpful in enhancing the relevance and competence of students' critical thinking skills. Contextual planning, collaborative execution, and institutional backing are essential determinants of success. Notwithstanding technical challenges, this context-based learning effectively achieves the research purpose of elucidating the implementation of CTL that is significant for students' professional development.

CONCLUSION

The analytical results demonstrate that the use of the Contextual Teaching and Learning (CTL) model via case study-based assignments has been addressed. The learning plan demonstrates alignment with CTL principles by integrating theory and practice within the students' professional environment. The execution across eight meetings exhibited robust student involvement in critical thinking, cooperation, and reflection on the educational experience, despite ongoing hurdles in applying active learning methodologies. Favorable feedback from both lecturers and students validated the efficacy of this strategy in fostering meaningful learning, while underscoring the necessity for support to enhance its implementation in big classrooms. Facilitating elements including instructor preparedness and institutional backing enhanced the implementation, whereas technological challenges and time limitations were identified as areas needing development. This study advocates for lecturer professional development, enhanced curriculum flexibility, and the broader application of cross-context case studies to render CTL more pertinent and adaptable to the learning requirements in higher education, especially within the realm of educational technology.

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