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Inquiry-Based Learning in Cooperative Economics: Examining Cognitive and Affective Learning Responses

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Abstract

This study examines how Inquiry-Based Learning (IBL) shapes student learning responses within undergraduate economics teacher education, specifically in cooperative economics courses. Drawing on constructivist learning theory and active learning literature, the study explores cognitive, affective, and behavioral dimensions of student responses to IBL implementation. Adopting a mixed-method descriptive design, qualitative data were obtained through classroom observations, semi-structured interviews, and document analysis involving 32 students in the Economics Education Study Program at Universitas Sriwijaya. Quantitative support was derived from a structured observational rubric measuring participation, inquiry engagement, and learning autonomy, generating an overall responsiveness score of 85.51%. The findings indicate consistently positive student responses, reflected in stronger engagement, deeper conceptual comprehension, and enhanced self-directed learning. By evidencing how inquiry-oriented pedagogy fosters meaningful learning beyond transmissive instruction, this study contributes to the expanding discourse on student-centered approaches in economics education. The results provide pedagogical implications for strengthening critical and reflective engagement in cooperative economics within emerging higher education contexts, particularly in preparing future economics teachers.

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INTRODUCTION

The effectiveness of active learning pedagogies has become a central concern in contemporary debates on economics education, including within Indonesian higher education where teacher preparation programs are increasingly expected to respond to complex socio-economic transformations (Carvalho et al., 2021). In Indonesia, economics teacher education carries a dual mandate: developing disciplinary competence and cultivating pedagogical reflexivity suited to diverse and evolving learning environments. Yet, transmission-oriented instructional models remain prevalent, often privileging content coverage over epistemic engagement and limiting opportunities for inquiry, dialogue, and critical reflection (Hayes et al., 2025). Such conditions raise questions regarding the pedagogical adequacy of conventional approaches in preparing future economics teachers capable of navigating uncertainty, contextual diversity, and ethical complexity (Siegfried & Colander, 2022).

These concerns are particularly salient in the teaching of cooperative economics. Within the Indonesian socio-economic landscape, cooperatives are not merely organizational entities but institutional expressions of democratic participation, collective agency, and social accountability. Consequently, cooperative education requires pedagogical approaches that move beyond technical and managerial instruction toward interpretive, relational, and value-oriented understanding (Filippi et al., 2023). Lecture-dominated pedagogies risk abstracting cooperative principles from their lived socio-economic realities, thereby weakening students' capacity to critically engage with cooperative governance and practice (Ghanbaripour et al., 2024). This pedagogical challenge underscores the need for inquiry-oriented approaches capable of fostering deeper conceptual and contextual understanding.

Inquiry-Based Learning (IBL) offers a theoretically grounded framework aligned with constructivist and student-centered learning paradigms (Nghiem et al., 2025). IBL conceptualizes learning as an active process of knowledge construction in which learners engage in questioning, evidence evaluation, and reflective interpretation (Kotsis, 2025). Through this epistemic orientation, students are positioned as active agents who interrogate economic phenomena, negotiate meaning, and justify claims within structured inquiry environments (Zajda, 2022). Such an approach is particularly relevant for economics education, where knowledge is context-dependent, contested, and often intertwined with normative considerations (Wolff & Ehrström, 2020).

From a learning-theoretical perspective, IBL simultaneously activates cognitive and metacognitive processes essential for higher-order thinking (Karakoc et al., 2025). Students assimilate and reorganize conceptual knowledge while developing awareness of their own thinking strategies, enabling them to regulate and refine understanding of complex economic issues (Potvin, 2023; Li & Yuan, 2022). These capacities are especially critical in teacher education, where graduates are expected to embody reflective, adaptive, and inquiry-oriented pedagogical practices (Meneses et al., 2023).

Despite its strong theoretical grounding, the implementation of IBL in economics education—particularly within Indonesian undergraduate teacher education—remains uneven. Empirical evidence continues to document the persistence of instructor-centered teaching characterized by lecture-driven delivery and assessment regimes focused primarily on cognitive achievement (Dewsbury et al., 2022). In such settings, student engagement often becomes procedural rather than substantive, with limited opportunities for inquiry or critical engagement with economic concepts (Morris, 2025). This misalignment is especially problematic in cooperative economics courses, where experiential understanding and value-based reasoning are integral to disciplinary competence.

A similar pedagogical tension is observable in the Economics Education Study Program at Universitas Sriwijaya. Although the curriculum

aspires to develop reflective and competent future teachers, instructional practices frequently prioritize efficiency and content completion. Assessment tends to emphasize summative cognitive outcomes, while students' inquiry processes, affective engagement, and learning autonomy receive comparatively limited attention (Petruse et al., 2024). Within this context, IBL represents a promising yet underexplored pathway for pedagogical renewal, enabling students to investigate economic phenomena, formulate problems, and construct defensible interpretations (Thomas et al., 2025; Nguyen et al., 2024). However, its pedagogical value must be empirically examined through careful attention to how students experience and respond to inquiry-oriented instruction (Jimenez-Liso et al., 2022).

Existing research on IBL in economics education has predominantly emphasized learning outcomes, achievement scores, or performance gains, often within secondary education contexts. Such outcome-oriented perspectives provide limited insight into the processes through which learning occurs. In contrast, the present study foregrounds students' learning responses—encompassing cognitive, affective, and behavioral dimensions—as a critical mediating mechanism linking pedagogical design and educational impact. By shifting analytical focus from outcomes to learning responses, this study addresses a significant gap in the literature and offers a process-oriented understanding of inquiry-based pedagogy in higher education.

The novelty of this study lies in three interrelated contributions. First, it situates IBL within the specific institutional and socio-pedagogical context of Indonesian undergraduate economics teacher education, a setting underrepresented in the international literature. Second, it advances a multidimensional conceptualization of student learning responses as a central analytical lens for evaluating inquiry-oriented pedagogy. Third, it integrates qualitative and quantitative evidence to capture how inquiry-based instruction is experienced by learners in cooperative economics education.

Guided by these considerations, this study seeks to address the following research questions: (1) How do undergraduate students cognitively, affectively, and behaviorally respond to the implementation of Inquiry-Based Learning in cooperative economics courses? (2) How does inquiry-oriented instruction influence students' engagement, conceptual understanding, and learning autonomy? (3) To what extent does Inquiry-Based Learning support meaningful learning experiences within the context of Indonesian economics teacher education? Through these inquiries, the study aims to contribute empirically and pedagogically to the development of more reflective, inquiry-driven learning environments in economics teacher education.

METHOD

Research Design

This study adopted a descriptive mixed-method design to examine how undergraduate students respond to the implementation of Inquiry-Based Learning (IBL) in cooperative economics education. The design was selected to capture both the measurable patterns of student responsiveness and the interpretive depth of learners' experiences within an authentic instructional setting. In line with established mixed-method typologies, the study followed a convergent descriptive approach in which qualitative and quantitative strands were collected during the same instructional period and integrated during interpretation to provide a comprehensive account of learning responses. Such an approach is particularly appropriate when the objective is not to test causal relationships but to understand how pedagogical processes are experienced and enacted in context, thereby combining breadth of description with depth of meaning.

The instructional intervention was conducted over one academic semester consisting of twelve structured inquiry-based sessions, each lasting approximately one hundred minutes. Inquiry-Based Learning was implemented as the primary pedagogical approach throughout the instructional unit on

cooperative economics, replacing conventional lecture-dominated practices. The inquiry cycle guiding the instructional design followed a systematic progression beginning with the presentation of contextualized economic phenomena related to cooperative practices in Indonesia. Students were subsequently guided to observe and explore these phenomena, formulate inquiry questions, construct provisional explanations, gather and analyze relevant empirical or documentary data, and synthesize findings into reasoned interpretations communicated through discussion and written outputs. This cyclical process functioned as a pedagogical scaffold that structured students' engagement while preserving sufficient openness to encourage independent reasoning, collaborative knowledge construction, and reflective learning. The instructor operated primarily as a facilitator who provided probing questions, formative feedback, and conceptual clarification when necessary, thereby supporting students' epistemic agency rather than transmitting predetermined explanations.

The descriptive mixed-method design was considered theoretically and methodologically appropriate because the research sought to understand multidimensional learning responses encompassing cognitive engagement, affective disposition, and participatory behavior. Quantitative descriptors derived from structured observation rubrics provided systematic evidence of response intensity across sessions, while qualitative data captured the meanings, interpretations, and experiential dimensions underlying these observable patterns. Through this integrative design, the study aimed to develop a contextualized and process-oriented understanding of inquiry-based pedagogy within economics teacher education.

Research Context and Participants

The research was conducted in the Economics Education Study Program at Universitas Sriwijaya, Indonesia, within an undergraduate course on cooperative concepts and management. This program prepares pre-service economics teachers and therefore constitutes a critical institutional context for examining pedagogical practices that shape future educators' professional orientations and instructional beliefs. Cooperative economics occupies a significant position in the Indonesian socio-economic landscape, making it a relevant and authentic domain for implementing inquiry-oriented learning.

Participants consisted of thirty-two undergraduate students enrolled in the course during the semester in which Inquiry-Based Learning was implemented. The majority of participants were in their third year of study and had previously completed foundational coursework in microeconomics, macroeconomics, and educational psychology, providing them with the conceptual and pedagogical background necessary to engage in inquiry-based learning activities. The class was selected through purposive sampling based on its direct relevance to the research objectives, specifically the examination of learning responses within a teacher education setting where inquiry-oriented pedagogy could be authentically implemented. This sampling strategy ensured alignment between participant characteristics and the analytical focus of the study. Students were engaged as active participants in the learning process rather than as experimental subjects, and participation in interviews and documentation activities was voluntary. To enrich interpretive depth, the course instructor was included as an additional informant, offering insights into instructional design, classroom interaction, and observed student engagement throughout the inquiry cycle.

Data Source and Collection Procedures

Data were derived from multiple complementary sources to ensure methodological triangulation and enhance analytical credibility. Primary data consisted of students' verbal, behavioral, and reflective expressions obtained through classroom observations and semi-structured interviews, enabling direct examination of engagement patterns, affective responses, and perceived learning experiences. Secondary data included

instructional documents and learning artifacts such as lesson plans, student worksheets, reflective notes, attendance records, and audiovisual recordings of classroom activities, which provided contextual evidence of instructional processes and supported corroboration of primary data.

Classroom observations were conducted across all twelve inquiry sessions using a structured observation instrument developed specifically for this study. The instrument was grounded in established engagement and active learning frameworks and consisted of indicators reflecting cognitive engagement, affective disposition, and participatory behavior. These indicators included intensity of participation, quality of questioning, collaborative interaction, persistence in inquiry tasks, and responsiveness to feedback. The observation rubric employed a scaled scoring format allowing the calculation of response intensity percentages across sessions. Instrument development involved iterative refinement through expert review by two scholars in economics education and pilot application in a comparable instructional setting to ensure clarity, relevance, and content validity. Reliability was strengthened through consistency checks across observation sessions and reflective comparison of field notes.

Semi-structured interviews were conducted with a purposive subset of students representing varying levels of observed engagement as well as with the course instructor. The interview protocol explored students' perceptions of inquiry-based learning, experiences of engagement, perceived challenges, and reflections on their cognitive and affective responses to the instructional approach. Interviews were recorded, transcribed verbatim, and reviewed for accuracy. Document analysis was undertaken to examine instructional materials and student-generated artifacts, enabling longitudinal insight into the development of inquiry engagement and conceptual understanding.

Quantitative data were obtained from observational rubric scores and supplemented by a brief response questionnaire administered at the end of the instructional unit. Questionnaire items were developed based on the same analytical framework used in observations and assessed perceived engagement, autonomy, and inquiry involvement using a Likert-scale format. The instrument underwent content validation through expert review and internal consistency checking to ensure reliability. Qualitative and quantitative data were collected concurrently and subsequently integrated during analysis to generate a coherent interpretation of learning responses.

Data Analysis

Data analysis followed an iterative and integrative process consistent with interpretive mixed-method research traditions. Qualitative data from observation notes, interview transcripts, and documents were first subjected to repeated reading to achieve familiarity and immersion. Open coding was then conducted to identify recurring patterns related to students' cognitive engagement, affective disposition, and participatory behavior. Codes were subsequently grouped into broader thematic categories through constant comparison across data sources, allowing identification of convergent and divergent patterns in learning responses. To enhance analytical rigor, intercoder validation was performed through collaborative review with a peer researcher who independently examined a subset of coded data, followed by discussion to resolve discrepancies and refine thematic definitions.

Quantitative data derived from observation rubrics and response questionnaires were analyzed descriptively to generate response intensity percentages and distribution patterns across sessions. These quantitative descriptors were not treated as independent measures of effectiveness but as complementary evidence supporting qualitative interpretations. Integration of qualitative and quantitative findings occurred during the interpretive phase through a process of triangulation, where numerical trends were compared with thematic insights to construct a coherent understanding of students' learning responses.

Trustworthiness was strengthened

through multiple strategies, including methodological triangulation across data sources, peer debriefing to challenge interpretive assumptions, and informal member checking during interviews to confirm the accuracy of participants' accounts. Ethical considerations were addressed through institutional approval, informed consent procedures, assurances of anonymity through pseudonyms, and the exclusive use of data for academic research purposes. Participants were informed of their right to withdraw at any stage without academic consequence. Through this rigorous and integrative analytical process, the study sought to produce a credible and contextually grounded account of how Inquiry-Based Learning shapes students' cognitive, affective, and behavioral responses within cooperative economics education.

RESULTS AND DISCUSSION

Overall Student Learning Responses to Inquiry-Based Learning

Student learning responses in this study were operationalized as students' evaluative perceptions following their engagement with Inquiry-Based Learning (IBL) in cooperative economics instruction. Data were collected through a structured response questionnaire administered after the completion of the inquiry-based instructional cycle. Descriptive and inferential summaries are presented to provide both distributional clarity and analytical depth. Table 1 presents the distribution of overall learning response scores among undergraduate students in the Economics Education Study Program at Universitas Sriwijaya.

Table 1. Distribution of Undergraduate Students' Learning Responses to Inquiry-Based Learning

Response Interval	Response Category	Frequency (n)	Percentage (%)	Cumulative %
85–100	Very High	21	65.6	65.6
69–84	High	11	34.4	100.0
53–68	Moderate	0	0.0	100.0
37–52	Low	0	0.0	100.0
20–36	Very Low	0	0.0	100.0
Total		32	100	
Mean	**Median**	**Standard Deviation**	**Minimum**	**Maximum**
85.51	87.00	5.12	72.00	96.00

Source: Processed Primary Data

Table 1 presents the distribution of undergraduate students' learning responses following the implementation of Inquiry-Based Learning (IBL) in cooperative economics instruction within the Economics Education Study Program at Universitas Sriwijaya. The distribution exhibits a markedly positive and tightly clustered response pattern, indicating a high level of student receptivity to inquiry-oriented pedagogy. A substantial majority of students (65.6%) reported learning responses classified within the Very High category (scores ranging from 85 to 100), while the remaining 34.4% fell within the High response category (scores between 69 and 84). Notably, no students were classified within the Moderate, Low, or Very Low response categories. This absence of lower-range responses suggests that the implementation of IBL was not perceived as marginally beneficial or disengaging by any participant, but rather as consistently valuable across the cohort.

The descriptive statistics further substantiate this pattern. The mean learning response score of 85.51, coupled with a median of 87.00, indicates that central tendency lies firmly within the upper response range. The median exceeding the mean suggests a slight left skew, implying that the overall positive perception was not driven by a small number of extreme scores but was instead broadly shared among students. The relatively modest standard deviation (SD = 5.12) points to limited dispersion, reinforcing the internal consistency of students' responses and suggesting that perceptions of IBL were stable across individuals. The observed score range, spanning from a minimum of 72.00 to a maximum of 96.00, further illustrates that even the lowest reported response remained within the High

category. This finding is particularly salient in the context of undergraduate economics teacher education, where pedagogical innovations may sometimes elicit resistance or uneven engagement due to students' prior exposure to more traditional, lecture-dominated instructional models. In this case, the uniformly high response distribution indicates that IBL was perceived not merely as novel, but as pedagogically coherent and accessible within the learning context.

From an interpretive standpoint, the concentration of responses in the upper categories suggests that Inquiry-Based Learning was experienced as a meaningful departure from conventional instructional practices. Students' high levels of responsiveness reflect not only affective appreciation but also an implicit recognition of the epistemic value of inquiry processes—such as problem formulation, exploration, and collaborative sense-making—embedded in the learning design. Importantly, the consistency of these responses implies that the inquiry framework provided sufficient scaffolding to support diverse learners, mitigating the risk of disengagement often associated with less structured active learning approaches.

Dimension-Level Analysis of Learning Responses

To move beyond aggregate interpretation, student learning responses were further analyzed across 16 instructional indicators reflecting cognitive engagement, affective response, participatory opportunity, and perceived instructional quality. Table 2 reports the percentage scores, response categories, and analytical grouping of each indicator.

Table 2. Indicator-Level Analysis of Student Learning Responses to Inquiry-Based Learning

No.	Indicator	Mean Score (%)	Category
1	Instructional delivery clarity	87.33	Very High
2	Communication of learning objectives	88.67	Very High
3	Development of life skills	79.33	High
4	Ongoing formative assessment	80.00	High
5	Opportunities to express ideas	90.00	Very High
6	Integration of student ideas into learning process	87.33	Very High
7	Promotion of student creativity	90.00	Very High
8	Peer discussion and idea exchange	87.33	Very High
9	Stimulation of curiosity and interest	82.00	High
10	Enhancement of learning motivation	87.33	Very High
11	Perceived comprehensibility of material	82.67	High
12	Opportunities to formulate concepts and principles	82.67	High
13	Meaningfulness of learning experience	86.00	Very High
14	Enjoyment of learning activities	80.67	High
15	Recognition of student contributions	84.67	Very High
16	Adequacy of time for task completion	88.67	Very High

Source: Processed Primary Data

Table 2 presents a disaggregated analysis of undergraduate students' learning responses to the implementation of Inquiry-Based Learning (IBL) in cooperative economics instruction at Universitas Sriwijaya. By examining indicator-level mean scores, the table provides insight into which pedagogical dimensions of IBL were most salient to students and how different aspects of the learning experience were differentially perceived. Overall, the distribution of indicator scores demonstrates a consistently positive response profile, with all sixteen indicators falling within the High or Very High categories. Ten indicators (62.5%) were classified as Very High, while the remaining six indicators (37.5%) were categorized as High. Notably, no indicator registered a moderate or lower response, indicating that students' evaluations of IBL were uniformly favorable across instructional, cognitive, and affective domains.

A closer examination reveals that the

highest mean scores are concentrated in indicators associated with epistemic agency and participatory engagement. Opportunities to express ideas and the promotion of student creativity both achieved the highest mean scores (90.00%), underscoring students' strong appreciation for learning environments that legitimize their voices and encourage intellectual experimentation. Similarly, peer discussion and idea exchange (87.33%) and the integration of student ideas into the learning process (87.33%) received very high evaluations, suggesting that collaborative inquiry was perceived not as a peripheral activity but as a central mechanism of learning.

Indicators related to instructional transparency and pedagogical structuring also scored highly. Clear instructional delivery (87.33%) and effective communication of learning objectives (88.67%) were rated as very high, indicating that the inquiry-based approach did not generate confusion or ambiguity among students. Instead, these findings suggest that the structured implementation of IBL provided sufficient scaffolding to support students' engagement with open-ended inquiry tasks—an important consideration in higher education contexts where excessive openness can sometimes undermine learning. Indicators reflecting motivational and experiential dimensions further reinforce the pedagogical value of IBL. Enhancement of learning motivation (87.33%) and perceived meaningfulness of the learning experience (86.00%) were both rated as very high, indicating that students viewed inquiry-based activities as intrinsically valuable rather than merely instrumental for assessment purposes. Recognition of student contributions (84.67%) also fell within the very high category, highlighting the importance of acknowledgment and validation in sustaining engagement among pre-service teachers.

In contrast, indicators categorized as High rather than Very High tend to relate to instrumental learning outcomes and affective comfort, such as development of life skills (79.33%), ongoing formative assessment (80.00%), stimulation of curiosity (82.00%), perceived comprehensibility of material (82.67%), opportunities to formulate concepts and principles (82.67%), and enjoyment of learning activities (80.67%). While still positive, these comparatively lower scores suggest a more measured student appraisal of IBL's immediate practical benefits. This pattern may reflect students' reflective differentiation between the processual strengths of inquiry-based pedagogy and its longer-term or less immediately tangible outcomes. Importantly, the adequacy of time allocated for task completion (88.67%) was rated very highly, indicating that time management within the inquiry cycle was perceived as supportive rather than constraining. This finding is particularly relevant in undergraduate economics education, where inquiry-based approaches are sometimes criticized for being time-intensive or inefficient. In this case, students' responses suggest that temporal scaffolding was appropriately calibrated to the demands of inquiry.

Interpretive Synthesis of Learning Responses

The consistently high levels of student responsiveness suggest that Inquiry-Based Learning (IBL) was experienced as a substantive pedagogical departure from conventional, lecture-dominated instruction. Rather than perceiving inquiry activities as an additional instructional technique, students articulated a shift in how they understood their role in the learning process—from passive recipients of content to active constructors of economic knowledge. This reorientation was repeatedly emphasized in interview accounts, where students described heightened engagement and a stronger sense of ownership over their learning trajectories. As one student reflected:

"In previous classes, we mostly waited for explanations from the lecturer. In this course, we had to question the problems ourselves and look for evidence. It made me feel responsible for understanding the concept, not just memorizing it." (Student 7)

Importantly, students' positive responses extended beyond affective enjoyment to

encompass perceived cognitive and epistemic value. Many interviewees highlighted that the inquiry process enabled them to engage more deeply with cooperative economics concepts, particularly through the formulation and refinement of principles grounded in discussion and evidence. This suggests that IBL facilitated not only motivation but also substantive intellectual engagement. Another participant noted:

"When we discussed cooperative management through real cases, I could finally connect the theory with practice. The concepts became clearer because we had to explain and defend them, not just accept them." (Student 12)

From the instructor's perspective, this shift in student engagement was also perceived as a qualitative change in classroom dynamics and learning depth. The lecturer emphasized that inquiry altered the locus of cognitive activity in the classroom, transferring responsibility for meaning-making from instructor to students:

"What changed most was not the content, but who was doing the thinking. Students no longer waited for confirmation from me. They argued with data, questioned assumptions, and even challenged my explanations." (Lecturer)

From a pedagogical standpoint, such high levels of learning responsiveness are analytically significant because they function as mediating conditions between instructional design and learning effectiveness. Students who perceive learning activities as meaningful are more likely to sustain engagement, invest cognitive effort, and participate actively across instructional phases. Students who perceive learning activities as meaningful are more likely to sustain engagement, invest cognitive effort, and participate actively across instructional phases. In this study, students' responses indicate that they viewed each stage of the inquiry cycle—problem formulation, exploration, collaborative discussion, and synthesis—not as discrete or optional tasks, but as integral components of learning. This perception is evident in students' reflections on the inquiry sequence itself:

"Every step mattered. If we skipped the discussion, our conclusions were weak. If we didn't explore enough data, the concepts didn't make sense. The process forced us to think systematically." (Student 3)

The instructor corroborated this interpretation by noting that the structured inquiry cycle helped students develop disciplined reasoning without feeling cognitively overwhelmed:

"They were challenged, but not lost. The inquiry stages gave them a roadmap. Even students who were usually quiet started contributing once they understood the process." (Lecturer)

Such accounts underscore that the inquiry structure was not experienced as fragmented or burdensome, but rather as a coherent learning pathway that supported cumulative understanding. The structured yet flexible nature of the inquiry cycle appears to have enabled students to navigate complex economic content without feeling overwhelmed. Equally noteworthy is the absence of moderate or negative learning responses, which suggests that IBL did not alienate students with diverse learning preferences. Interview data indicate that the pedagogical scaffolding embedded within the inquiry design—clear objectives, guided facilitation, and collaborative spaces—played a critical role in sustaining broad participation. Students who initially felt uncertain about open-ended learning reported gradually gaining confidence as the inquiry progressed. As one student explained:

"At first, I was uncomfortable because there was no direct answer. But the guidance and group discussions helped. Over time, I became more confident to speak and argue." (Student 19)

This finding is particularly salient within the context of economics teacher education. Students' experiences as learners do not merely

influence immediate learning outcomes but also shape their emerging pedagogical beliefs and future instructional practices. Several interviewees explicitly linked their experience with IBL to their aspirations as prospective economics teachers. One participant remarked:

"I realize now that if I want my future students to think critically, I cannot just lecture. This method showed me how learning can be designed differently." (Student 25)

Taken together, the integration of quantitative response patterns and qualitative interview evidence reveals that Inquiry-Based Learning was perceived as both intellectually demanding and pedagogically empowering. For undergraduate students in the Economics Education Study Program at Universitas Sriwijaya, IBL functioned not only as a learning strategy but as a formative pedagogical experience—one that reshaped how they engaged with economic knowledge and how they envisioned their future roles as educators.

Discussion

The findings of this study provide a theoretically meaningful contribution to the literature on Inquiry-Based Learning (IBL) in higher education, particularly within the underexamined context of undergraduate economics teacher education in the Global South. Consistent with recent scholarship on pedagogical innovation, the uniformly high levels of student learning responses observed in this study should not be interpreted merely as indicators of instructional satisfaction, but rather as evidence of deeper epistemic and pedagogical shifts in how students engage with knowledge and construct meaning (Carvalho et al., 2021; Thomas et al., 2025). In this regard, the study advances the argument that inquiry-oriented pedagogy operates not only at the level of engagement and performance but also at the level of epistemic positioning—reshaping how learners understand knowledge, authority, and their roles within the learning process.

From a constructivist learning perspective, the dominance of High and Very High response categories supports the proposition that meaningful learning emerges when students actively construct knowledge through interaction with problems, peers, and contexts rather than passively receiving information (Zajda, 2022; Siegfried & Colander, 2022). Importantly, the absence of negative or disengaged responses indicates that the structured inquiry design mitigated a commonly reported challenge of active learning—namely, cognitive overload or learner disorientation. The inquiry cycle functioned as pedagogical scaffolding, progressively transferring epistemic responsibility to students while preserving conceptual clarity and coherence (Mamun, 2022; Nguyen et al., 2024). This pattern resonates with prior research demonstrating that guided inquiry, rather than minimally structured discovery, is particularly effective in complex disciplinary domains (Jegstad, 2024; Karakoc et al., 2025).

Descriptive quantitative patterns further reinforce this interpretation. The relatively high mean response score combined with low dispersion indicates that positive engagement was not confined to a small subset of highly motivated students but was broadly distributed across the cohort. This finding aligns with earlier studies showing that well-structured inquiry and active learning environments can promote inclusive participation and reduce engagement disparities among diverse learners (Dewsbury et al., 2022; Hayes et al., 2025). In economics education, where abstract models and normative assumptions often dominate instructional discourse, such balance between openness and structure is particularly critical to prevent inquiry from degenerating into conceptual ambiguity or superficial discussion (Siegfried & Colander, 2022).

At the indicator level, students demonstrated strongest responses in dimensions associated with epistemic agency, dialogic interaction, and participatory engagement. High scores in opportunities for idea expression, peer discussion, and integration of student contributions suggest that learners experienced the classroom as a legitimate space for knowledge co-construction. This pattern is

consistent with sociocultural and inquiry-based learning theories emphasizing that knowledge is generated through interaction, dialogue, and shared meaning-making rather than individual transmission (Gillies, 2023; Jimenez-Liso et al., 2022). Within cooperative economics education—where collective decision-making and participatory governance are foundational principles—the alignment between pedagogical form and disciplinary substance likely reinforced students' perceptions of coherence and relevance (Filippi et al., 2023; Wolff & Ehrström, 2020).

Equally noteworthy is students' strong evaluation of instructional clarity and goal communication. Contrary to critiques suggesting that inquiry-based pedagogy sacrifices structure for exploration, the findings indicate that students perceived the IBL implementation as both transparent and well-organized. This supports contemporary conceptualizations of effective inquiry as guided inquiry, wherein instructional design provides clear epistemic direction while preserving learner autonomy (Jegstad, 2024; Potvin, 2023). Such findings are consistent with broader research demonstrating that structured inquiry enhances engagement without overwhelming learners, particularly in cognitively demanding academic domains (Karakoc et al., 2025).

The comparatively lower—though still positive—scores associated with instrumental and affective indicators such as enjoyment and life-skill development require nuanced interpretation. Rather than indicating pedagogical weakness, these results suggest that students differentiated between the intrinsic epistemic value of inquiry and its immediate emotional or utilitarian outcomes. This reflective differentiation corresponds with research on metacognition and self-regulated learning, which shows that higher education students are capable of critically evaluating learning experiences across multiple dimensions (Li & Yuan, 2022; Kotsis, 2025).

Comparison with prior IBL studies in economics education further clarifies the contribution of the present findings. Earlier research has frequently emphasized measurable outcomes such as achievement gains, conceptual test scores, or short-term performance improvements. While such outcomes are valuable, they provide limited insight into the processes through which inquiry transforms learners' epistemic orientations. The present study extends this literature by demonstrating that inquiry-based pedagogy not only enhances engagement but also reshapes how students conceptualize knowledge and participation (Chukwu & Amedu, 2025). This process-oriented perspective complements outcome-focused research by illuminating the mechanisms underlying pedagogical effectiveness.

Nevertheless, alternative explanations should be acknowledged. One potential factor is the novelty effect, wherein students respond positively to a pedagogical approach primarily because it differs from conventional instruction rather than due to its intrinsic effectiveness. Additionally, contextual factors such as class size, instructor expertise, or institutional culture may have contributed to the observed outcomes. While the consistency of responses across multiple indicators suggests that the findings are not solely attributable to novelty, future longitudinal research is needed to examine whether epistemic shifts persist over time and across varied instructional contexts.

The implications for economics teacher education are significant. The findings suggest that inquiry-based pedagogy can cultivate not only disciplinary understanding but also reflective and participatory learning dispositions essential for future educators. Teacher education programs may therefore benefit from systematically integrating inquiry-oriented instructional designs that model dialogic and student-centered pedagogies. Such integration could support the development of adaptive teaching competencies, enabling future teachers to design learning environments that foster questioning, reasoning, and collaborative knowledge construction. Moreover, aligning pedagogical practice with the participatory ethos of cooperative economics may enhance the coherence between disciplinary content and pedagogical form, thereby strengthening both

conceptual understanding and professional identity formation.

Inquiry-Based Learning as Epistemic Reorientation in Economics Teacher Education

A central and theoretically novel contribution of this study is the identification of Inquiry-Based Learning as a mechanism of epistemic reorientation within undergraduate economics teacher education. Epistemic reorientation refers to a transformation in how learners conceptualize knowledge, learning, and their roles as participants in knowledge construction. While prior research has documented the positive effects of inquiry-based and active learning approaches on engagement and performance, such outcomes are often treated as endpoints rather than indicators of deeper epistemic transformation (Carvalho et al., 2021; Thomas et al., 2025). The present findings suggest that the most consequential impact of IBL lies in its capacity to reposition students from passive recipients of knowledge to active epistemic agents.

This reorientation is evident in students' consistently strong responses to indicators associated with idea generation, collaborative reasoning, and dialogic engagement. These dimensions collectively suggest that students experienced knowledge as something constructed and negotiated rather than transmitted. Such findings are consistent with inquiry-based learning research emphasizing that epistemic agency emerges when learners are granted discursive space and responsibility for meaning-making (Gillies, 2023; Jimenez-Liso et al., 2022). By empirically illustrating how epistemic agency can be cultivated within teacher education, the study extends constructivist learning theory into contexts traditionally characterized by hierarchical knowledge transmission (Zajda, 2022).

The contextual specificity of this contribution is particularly significant. In many higher education environments, including those in Indonesia, students are often socialized into academic cultures emphasizing correctness, authority, and examination performance. Under such conditions, inquiry-based approaches are sometimes assumed to risk confusion or disengagement. However, the consistently positive responses observed in this study challenge this assumption and align with emerging evidence that well-scaffolded inquiry can sustain engagement and epistemic confidence even among learners with limited prior exposure to open-ended pedagogies (Mamun, 2022; Nguyen et al., 2024; Jegstad, 2024).

This epistemic transformation carries particular relevance in cooperative economics education. Cooperatives embody principles of democratic participation, collective agency, and shared responsibility. The alignment between the epistemic structure of inquiry—dialogue, questioning, and co-construction—and the normative foundations of cooperative economics appears to have reinforced students' sense of coherence between how they learned and what they learned. This convergence resonates with scholarship emphasizing the inseparability of participatory values and economic understanding within cooperative and solidarity economy education (Filippi et al., 2023; Wolff & Ehrström, 2020).

Another dimension of this epistemic reorientation lies in its implications for teacher identity formation. Students reported that experiencing inquiry-based learning as learners enabled them to reconceptualize teaching not as content delivery but as the design of environments that support questioning, reasoning, and dialogue. This finding extends research on adaptive and practice-based teacher education by suggesting that shifts in epistemic orientation precede and potentially shape subsequent transformations in pedagogical beliefs and professional identity (Meneses et al., 2023; Nghiem et al., 2025). In this sense, Inquiry-Based Learning functions not only as a pedagogical strategy but as a formative professional experience that prepares future educators to enact reflective and inquiry-oriented teaching practices.

Taken together, these findings position epistemic reorientation as the core theoretical contribution of the study. By demonstrating how inquiry-based pedagogy reshapes learners' epistemic orientations within a non-Western

teacher education context, the study contributes to a more nuanced understanding of how pedagogical design, disciplinary content, and learner agency interact to produce meaningful and transformative learning experiences.

CONCLUSION

This study concludes that the implementation of Inquiry-Based Learning in cooperative economics courses within the Economics Education Study Program at Universitas Sriwijaya was experienced by undergraduate students as a pedagogically coherent, intellectually demanding, and epistemically meaningful learning approach. Consistent with the research objectives, the integrated quantitative–qualitative findings demonstrate that Inquiry-Based Learning fostered strong cognitive, affective, and behavioral learning responses. The consistently high and tightly clustered response patterns indicate that students did not perceive inquiry-based instruction merely as an engaging alternative, but as a structured framework enabling active knowledge construction, dialogic participation, and the development of epistemic agency. Indicator-level and interview evidence reveal that students most strongly valued idea expression, creativity, collaborative sense-making, instructional clarity, and meaningful learning, suggesting a close alignment between pedagogical design and reflective engagement. The absence of negative responses further indicates that the guided inquiry structure effectively mitigated disengagement risks commonly associated with active learning, even among students accustomed to lecture-centered instruction.

From a scientific perspective, this study contributes to the literature by demonstrating that, within economics teacher education, Inquiry-Based Learning operates as a mechanism of epistemic reorientation rather than merely a strategy for enhancing motivation or satisfaction. By empirically linking inquiry-based pedagogy with shifts in how pre-service teachers conceptualize knowledge, learning responsibility, and pedagogical roles, the study extends constructivist and inquiry-learning perspectives into a non-Western higher education context. These findings reinforce the argument that pedagogical form, disciplinary substance, and learner agency are mutually constitutive in shaping meaningful learning experiences in higher education.

In practical terms, the study suggests that economics teacher education programs should systematically integrate guided inquiry cycles into curriculum design, emphasize dialogic and participatory learning environments, and provide structured scaffolding that balances epistemic autonomy with instructional clarity. Embedding inquiry-based experiences in teacher preparation may strengthen future educators' capacity to design reflective, student-centered, and contextually responsive learning environments, particularly in domains such as cooperative economics that emphasize participation and collective reasoning.

Future research should extend this work through longitudinal designs examining the durability of epistemic shifts beyond a single instructional period, comparative studies across institutions and disciplinary contexts to test transferability, and mixed-method or quasi-experimental approaches that examine relationships between epistemic orientation, learning outcomes, and pedagogical practice. Further methodological development could include validated multidimensional response instruments, larger and more diverse samples, and cross-cultural analyses to deepen understanding of how inquiry-based pedagogy operates across varied higher education environments.

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