

## **INTEGRATING *INQUIRY-BASED LEARNING* IN MACROECONOMICS: ENHANCING DIGITAL COMPETENCE AND CRITICAL THINKING SKILLS**

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### **ABSTRAK**

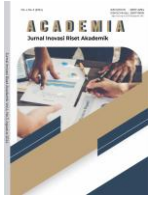
Perkembangan teknologi digital dalam pendidikan tinggi menuntut mahasiswa tidak hanya menguasai konsep makroekonomi, tetapi juga memiliki kompetensi digital dan kemampuan berpikir kritis untuk mengolah informasi, menganalisis data, serta mengambil keputusan berbasis bukti. Namun, pembelajaran Makroekonomi yang masih cenderung berorientasi pada penyampaian materi belum sepenuhnya memberikan ruang bagi mahasiswa untuk mengembangkan kedua kompetensi tersebut secara terintegrasi. Penelitian ini bertujuan mengembangkan dan mengimplementasikan model *Inquiry-Based Learning* (IBL) pada mata kuliah Makroekonomi untuk meningkatkan kompetensi digital dan kemampuan berpikir kritis mahasiswa. Penelitian menggunakan metode *Research and Development* (R&D) dengan model ADDIE yang meliputi tahap analisis, desain, pengembangan, implementasi, dan evaluasi. Subjek penelitian terdiri atas 60 mahasiswa Program Studi Pendidikan Akuntansi Universitas Negeri Medan, sedangkan kelayakan model divalidasi oleh ahli desain pembelajaran, ahli materi, dan ahli teknologi pendidikan. Data dikumpulkan melalui lembar validasi, observasi, serta instrumen *pretest* dan *posttest*, kemudian dianalisis secara deskriptif dan menggunakan *N-Gain*. Hasil penelitian menunjukkan bahwa model IBL yang dikembangkan berada pada kategori sangat layak, dengan skor validasi model pembelajaran sebesar 90%, bahan ajar sebesar 90%, strategi pembelajaran sebesar 85%, dan respons mahasiswa sebesar 88,5%. Implementasi model menghasilkan nilai *N-Gain* sebesar 0,71 yang termasuk kategori tinggi, menunjukkan peningkatan kemampuan mahasiswa dalam mengeksplorasi dan menganalisis data, membangun argumentasi berbasis bukti, serta memanfaatkan teknologi digital dalam pembelajaran Makroekonomi. Kebaruan penelitian ini terletak pada pengembangan model IBL yang secara sistematis mengintegrasikan tahapan *inquiry*, aktivitas digital, dan indikator berpikir kritis dalam pembelajaran Makroekonomi. Model yang dikembangkan dapat menjadi alternatif pembelajaran untuk mendukung penguatan kompetensi digital dan keterampilan berpikir tingkat tinggi mahasiswa di pendidikan tinggi.

**Kata Kunci:** *Inquiry-Based Learning*, Kompetensi Digital, Berpikir Kritis, Makroekonomi, ADDIE.

### **ABSTRACT**

The rapid development of digital technology in higher education requires students not only to master macroeconomic concepts but also to develop digital competence and critical thinking skills to process information, analyze data, and make evidence-based decisions. However, Macroeconomics instruction that remains predominantly focused on content delivery does not always provide sufficient opportunities for students to develop these competencies in an integrated manner. This study aimed to develop and implement an *Inquiry-Based Learning* (IBL) model in a Macroeconomics course to enhance students' digital competence and critical thinking skills. The study employed a *Research and Development* (R&D) approach using the ADDIE model, consisting of analysis, design, development, implementation, and evaluation stages. The participants were 60 students enrolled in the Accounting





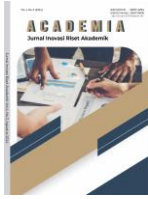
Education Study Program at Universitas Negeri Medan, while the feasibility of the model was evaluated by experts in instructional design, subject matter, and educational technology. Data were collected through expert validation sheets, observations, and pretest–posttest instruments and were analyzed descriptively and using the *N-Gain* score. The results showed that the developed IBL model was categorized as highly feasible, with validation scores of 90% for the learning model, 90% for teaching materials, 85% for the learning strategy, and 88.5% for student responses. The implementation of the model resulted in an *N-Gain* score of 0.71, categorized as high, indicating improvement in students' abilities to explore and analyze data, construct evidence-based arguments, and utilize digital technologies in Macroeconomics learning. The novelty of this study lies in the development of an IBL model that systematically integrates inquiry stages, digital activities, and critical thinking indicators into Macroeconomics instruction. The developed model provides an alternative instructional approach for strengthening students' digital competence and higher-order thinking skills in higher education.

**Keywords:** *Inquiry-Based Learning*, Digital Competence, Critical Thinking, Macroeconomics, ADDIE.

## INTRODUCTION

The rapid development of digital technology has fundamentally changed the competencies required in higher education. Students are expected not only to understand disciplinary knowledge but also to access, evaluate, process, and communicate information through digital technologies. In economics education, these demands are particularly important because students must interpret dynamic economic information, analyze quantitative data, and formulate evidence-based arguments. However, digital competence cannot be assumed to develop automatically merely because students have access to digital technology. Research among Indonesian university students shows that digital literacy remains uneven and is influenced by individual factors such as curiosity and self-determination (Rini et al., 2022). Similar conditions were identified among Indonesian preservice teachers, whose digital competency profiles varied considerably, indicating the need for structured learning experiences to develop digital competence (Hidayat et al., 2025; Rahim et al., 2023). Furthermore, digital literacy does not automatically translate into productive academic or economic behavior, demonstrating the importance of instructional strategies that deliberately integrate technology into meaningful learning activities (Khoiriyah et al., 2022; Nasori, 2026).

The development of digital competence also needs to be accompanied by critical thinking skills. Students in higher education are required to analyze information, evaluate evidence, identify relationships among variables, and formulate reasoned conclusions. These abilities are especially relevant in economics, where learning involves interpreting economic indicators and explaining complex relationships among economic phenomena. Empirical studies have shown that digital literacy is associated with students' critical thinking abilities, including in accounting education (Rosyida & Bahtiar, 2024). In economics learning, digital literacy combined with economic literacy has also been shown to contribute significantly to students' learning achievement (Aisyah & Dewi, 2022). These findings indicate that digital competence and critical thinking should not be developed as separate learning outcomes but need to be integrated through learning activities that require students to search for information, analyze data, evaluate evidence, and communicate conclusions.

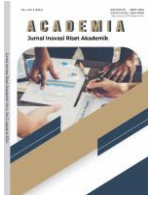


This need becomes more apparent in Macroeconomics courses. Macroeconomics deals with abstract and interconnected concepts such as inflation, unemployment, economic growth, fiscal policy, monetary policy, and international economic interactions. Understanding these concepts requires students to move beyond memorizing definitions toward interpreting economic data and explaining real-world economic phenomena. Nevertheless, learning practices that emphasize lecturer explanations and content transmission may provide limited opportunities for students to investigate economic problems independently. Research in economics and accounting education demonstrates that active and student-centered learning approaches can provide stronger opportunities for developing critical thinking than conventional instructional practices (Anggita et al., 2022). Similarly, the development of learning materials based on active learning and 4C skills has demonstrated potential to strengthen critical thinking in economics education (Sukmawati & Ghofur, 2023).

One instructional approach that is relevant to these demands is *Inquiry-Based Learning* (IBL). IBL places students as active investigators who formulate questions, seek and analyze information, test explanations, construct arguments, and draw conclusions based on evidence. Its emphasis on investigation and active knowledge construction makes IBL relevant for learning environments that require students to develop analytical and independent learning abilities. A meta-analysis reported that IBL has a positive effect on students' competencies compared with conventional learning (Ananda & Usmeldi, 2023). A literature review also emphasizes the relevance of inquiry-based models for developing twenty-first-century learning competencies through activities that encourage investigation, analysis, and independent learning (Fitriani et al., 2023). In addition, empirical research has demonstrated that inquiry-based learning contributes positively to students' critical thinking, including in Indonesian educational settings (Febrianti et al., 2022).

The relevance of IBL is particularly strong when it is combined with digital learning activities. Inquiry requires students to locate relevant information, select credible sources, process data, compare findings, and communicate evidence-based conclusions. Digital tools can facilitate these processes by providing access to economic databases, data-processing applications, collaborative platforms, and visualization tools. Thus, the use of technology in IBL should not merely function as a medium for delivering learning materials but as an integral part of the inquiry process. This orientation is consistent with findings that the development of digital competence requires deliberate learning support rather than relying solely on technological access (Rini et al., 2022; Rosalina et al., 2021). Therefore, an inquiry model that explicitly integrates digital activities has greater potential to develop both technological competence and higher-order cognitive skills.

Evidence from economics education further strengthens the rationale for applying IBL. Research has found that inquiry-based learning, self-efficacy, and learning independence significantly contribute to students' critical thinking ability (Laksono et al., 2025). Comparative research in economics education has also shown that *guided inquiry learning* can produce stronger critical thinking outcomes than *problem-based learning* (Sari et al., 2025). These findings suggest that inquiry is not merely an alternative classroom strategy but has specific potential for strengthening students' analytical engagement with economic problems. However, existing research has generally focused on critical thinking or conceptual learning, while the systematic



integration of digital competence and critical thinking within an IBL model for Macroeconomics remains insufficiently explored.

The existing literature also reveals several limitations. Studies on digital competence have primarily examined students' levels of digital literacy or factors influencing its development (Rini et al., 2022; Rosalina et al., 2021; Hidayat et al., 2025), while other studies have examined the relationship between digital literacy and learning or entrepreneurial outcomes (Aisyah & Dewi, 2022; Khoiriyah et al., 2022; Nasori, 2026). Meanwhile, research on IBL has largely emphasized competence and critical thinking outcomes without specifically designing the inquiry process around digital competence as a simultaneous target (Ananda & Usmeldi, 2023; Febrianti et al., 2022; Laksono et al., 2025; Sari et al., 2025). Recent development research in economics education has also produced digital learning media for strengthening digital literacy, but the intervention has not systematically integrated digital competence with critical thinking through an inquiry-based instructional model (Puri et al., 2026). Likewise, research on AI-integrated *Problem-Based Learning* indicates the importance of combining digital competence and higher-order thinking, but it uses a different pedagogical framework from IBL (Mulyati et al., 2026). This fragmentation indicates a need for an instructional model that deliberately connects inquiry activities, digital technology use, and critical thinking within the same learning design.

Based on this gap, the present study develops an *Inquiry-Based Learning* model specifically for Macroeconomics that integrates inquiry stages with digital learning activities and critical thinking indicators. The model is designed to guide students through a structured process of identifying macroeconomic problems, formulating questions and hypotheses, collecting and analyzing economic data, testing arguments, drawing evidence-based conclusions, and reflecting on the learning process. Digital platforms and tools are positioned as functional components of the inquiry process rather than merely supplementary learning media. This design is expected to provide students with meaningful opportunities to develop digital competence while simultaneously strengthening their ability to analyze, evaluate, reason, and construct evidence-based arguments.

The novelty of this study lies in the integration of three components within a single instructional model: *Inquiry-Based Learning*, digital competence, and critical thinking in Macroeconomics instruction. Unlike previous studies that have primarily addressed these competencies separately or through different learning models, this study deliberately embeds digital activities and critical thinking indicators into each stage of the inquiry process. The study therefore contributes a more integrated instructional framework for addressing the demands of digital transformation and higher-order thinking in economics education. Accordingly, this study aims to develop and implement an *Inquiry-Based Learning* model in Macroeconomics and to examine its feasibility and effectiveness in improving students' digital competence and critical thinking skills.

## METHODS

This study employed a *Research and Development* (R&D) approach to develop and implement an *Inquiry-Based Learning* (IBL) model for Macroeconomics learning. The development procedure adopted the ADDIE framework, consisting of five stages: *Analysis*, *Design*, *Development*, *Implementation*, and *Evaluation*. The model was designed to integrate



inquiry activities, digital learning activities, and critical thinking indicators into the learning process. This approach was intended to produce a learning model that is feasible for classroom implementation and relevant to the development of students' digital competence and critical thinking skills.

The study was conducted in the Accounting Education Program at Universitas Negeri Medan and involved 60 students enrolled in the Macroeconomics course. The analysis stage identified students' learning needs, characteristics, course content, and competency demands in digital learning environments. The design stage determined the learning objectives, learning activities, digital resources, assessment procedures, and inquiry syntax. The development stage produced the learning model and supporting materials, which were subsequently reviewed and revised based on expert feedback.

The developed model consisted of seven inquiry activities: orientation, problem formulation, hypothesis formulation, data collection, hypothesis testing, conclusion drawing, and reflection and evaluation. Digital technologies were integrated into these activities through Google Workspace, Padlet, Canva, Excel, interactive videos, and authentic economic information. These activities provided students with opportunities to search for and evaluate information, process economic data, collaborate, communicate findings, and construct evidence-based conclusions. The design was consistent with previous findings regarding the contribution of inquiry-based learning to student competence and critical thinking (Ananda & Usmeldi, 2023; Febrianti et al., 2022; Laksono et al., 2025).

The developed model was validated by experts in instructional design, subject matter, and educational technology. Validation assessed the feasibility of the learning model, teaching materials, learning strategies, and supporting digital components. The feasibility score was calculated as a percentage of the obtained score relative to the maximum possible score and then interpreted according to the predetermined feasibility criteria.

Following expert validation and revision, the model was implemented with the 60 students. Data were collected using validation sheets, observation instruments, student response instruments, and pretest-posttest measures. The pretest was administered before the implementation of the learning model, while the posttest was administered after students completed the IBL activities. The pretest and posttest results were analyzed using *N-Gain* to determine the level of improvement in students' digital competence and critical thinking skills.

Descriptive analysis was also used to summarize expert validation, observations, and student responses. The analysis was conducted to determine the feasibility and effectiveness of the developed IBL model in Macroeconomics learning. Ethical principles were maintained throughout the study by informing students about the purpose and procedures of the research and ensuring that the collected data were used for research purposes while maintaining participant confidentiality.

## RESULTS AND DISCUSSIONS

### Results

The development of the *Inquiry-Based Learning* (IBL) model for Macroeconomics was conducted through the ADDIE stages, namely *Analysis*, *Design*, *Development*, *Implementation*, and *Evaluation*. The analysis stage identified the need for learning activities that could



simultaneously strengthen students' digital competence and critical thinking skills. Based on this analysis, the learning model was designed to integrate inquiry activities with the use of digital technologies and authentic economic information. The resulting model was subsequently validated by experts and implemented with 60 students in the Accounting Education Program at Universitas Negeri Medan.

### **Development of the Inquiry-Based Learning Model**

The developed IBL model was structured into seven sequential activities: orientation, problem formulation, hypothesis formulation, data collection, hypothesis testing, conclusion drawing, and reflection and evaluation. Each stage was designed to encourage students to actively investigate macroeconomic problems rather than rely primarily on lecturer explanations. Digital tools were incorporated into the inquiry process to support information searching, data processing, collaboration, presentation, and communication. The structure of the developed learning model is presented in Table 1.

**Table 1.** Syntax of the Developed Inquiry-Based Learning Model

| Stage                     | Main Learning Activity                                                                     | Digital Activity                                                                                 |
|---------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Orientation               | Students are introduced to current macroeconomic phenomena and learning objectives.        | Students access digital materials, interactive videos, and authentic economic information.       |
| Problem Formulation       | Students identify and formulate problems related to macroeconomic phenomena.               | Students search for relevant information from credible digital sources.                          |
| Hypothesis Formulation    | Students formulate preliminary explanations or hypotheses based on the identified problem. | Students use digital resources to support their initial arguments.                               |
| Data Collection           | Students collect relevant economic data and information.                                   | Students use digital databases, Google Workspace, and other digital resources.                   |
| Hypothesis Testing        | Students analyze data and compare findings with their initial hypotheses.                  | Students process data using Excel and present findings through digital platforms.                |
| Conclusion Drawing        | Students formulate conclusions based on the evidence obtained.                             | Students communicate their conclusions through digital presentations or collaborative platforms. |
| Reflection and Evaluation | Students reflect on the inquiry process and evaluate their understanding.                  | Students submit responses and learning reflections using digital platforms.                      |

Table 1 shows that the developed model does not place digital technology as a separate component of learning but integrates it throughout the inquiry process. Students are directed to use digital resources to identify problems, collect and process information, evaluate evidence, and communicate conclusions. The sequence also provides a clear transition from identifying macroeconomic phenomena to constructing evidence-based explanations, thereby connecting digital activities with the development of critical thinking.



## Expert Validation

After the development stage, the IBL model and its supporting components were assessed by experts to determine their feasibility before classroom implementation. Validation involved experts in instructional design, teaching materials, learning strategies, and educational technology. The assessment results are presented in Table 2.

**Table 2.** Expert Validation Results

| Component         | Validation Score | Category        |
|-------------------|------------------|-----------------|
| Learning Model    | 90%              | Highly Feasible |
| Teaching Material | 90%              | Highly Feasible |
| Learning Strategy | 85%              | Feasible        |
| Student Response  | 88.5%            | Feasible        |

The validation results indicate that all assessed components met the feasibility criteria. The learning model and teaching materials obtained the highest scores, each reaching 90%, and were categorized as highly feasible. The learning strategy received a score of 85%, while student responses reached 88.5%, both indicating that the developed model was feasible for implementation. These results provided the basis for implementing the revised IBL model in the Macroeconomics course.

## Implementation of the Developed Model

The validated model was subsequently implemented with 60 students in the Accounting Education Program. During implementation, students participated in the seven inquiry stages while using digital tools such as Google Workspace, Padlet, Canva, Excel, interactive videos, and authentic economic news. These activities required students to identify macroeconomic problems, search for relevant information, analyze economic data, discuss findings, and formulate conclusions based on evidence. The implementation therefore provided an integrated learning experience combining inquiry, digital technology, and critical thinking.

The learning process showed that students were actively involved in investigating macroeconomic issues rather than receiving information solely through lecturer-centered instruction. Digital platforms supported collaboration and information exchange, while data-processing and presentation tools enabled students to organize and communicate their findings. The inquiry stages also required students to compare information, evaluate evidence, and justify their conclusions. These activities were consistent with the intended design of the developed model, which positioned digital technology as part of the inquiry process rather than merely as a medium for presenting learning materials.

## Effectiveness of the Developed Model

The effectiveness of the developed IBL model was assessed by comparing students' pretest and posttest performance. The analysis used *N-Gain* to determine the level of improvement following implementation. The obtained *N-Gain* score was 0.71, which was categorized as high.

The *N-Gain* result indicates a substantial improvement in students' targeted competencies after participating in the developed IBL learning process. The score of 0.71 demonstrates that the learning intervention produced a high level of improvement from students' initial to final



performance. Thus, the developed IBL model showed effectiveness in supporting the improvement of students' digital competence and critical thinking skills in Macroeconomics learning.

Overall, the results demonstrate that the developed IBL model achieved the expected feasibility and effectiveness criteria. Expert validation confirmed that the model and its supporting components were appropriate for implementation, while the implementation results demonstrated active integration of digital activities into the inquiry process. The high *N-Gain* score further indicates that the developed learning model was effective in improving the targeted competencies. These findings provide an empirical basis for further discussion of the contribution of integrated inquiry-based and digital learning to Macroeconomics education.

## Discussion

The findings demonstrate that the developed *Inquiry-Based Learning* (IBL) model is a feasible and effective approach for integrating digital competence and critical thinking into Macroeconomics learning. The high feasibility scores obtained from the validation process indicate that the model has appropriate instructional structure, learning materials, and digital learning components for classroom implementation. This finding is consistent with Ananda and Usmeldi (2023), who reported through a meta-analysis that IBL has a positive effect on students' competencies compared with conventional learning. The present study extends this evidence by applying inquiry-based learning specifically to Macroeconomics while simultaneously positioning digital competence and critical thinking as interconnected learning outcomes.

The effectiveness of the model can be understood from the characteristics of the inquiry process implemented in the learning activities. Students were required to identify macroeconomic problems, formulate questions and hypotheses, collect information, analyze data, test explanations, and construct conclusions based on evidence. Such activities provide greater opportunities for students to engage in analytical and evaluative thinking than learning environments dominated by information transmission. Febrianti et al. (2022) similarly found that the implementation of IBL can improve students' critical thinking abilities, while Laksono et al. (2025) demonstrated that inquiry-based learning is an important predictor of students' critical thinking. The present findings therefore reinforce the argument that structured inquiry can transform students from passive recipients of economic information into active participants in the construction and evaluation of knowledge.

The integration of digital technology within the inquiry process also represents an important factor in the model's contribution. Digital tools were used not simply to deliver learning materials but to support information searching, data collection, data analysis, collaboration, and communication of findings. This approach is relevant to research showing that students' digital competence requires structured learning experiences and cannot be assumed to develop solely through access to technology (Rini et al., 2022; Rosalina et al., 2021). Hidayat et al. (2025) and Rahim et al. (2023) also reported variation in the digital competencies of Indonesian preservice teachers, indicating the importance of deliberate instructional support for developing digital capabilities. Accordingly, the present model addresses digital competence through repeated and purposeful use of digital tools within authentic academic tasks.

The relationship between digital competence and critical thinking is particularly important in interpreting the improvement found in this study. The learning activities required students to



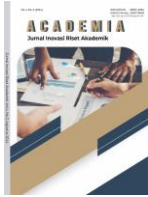
locate information, assess its relevance, process economic data, compare evidence, and justify conclusions. These processes require both functional digital skills and higher-order cognitive engagement. Rosyida and Bahtiar (2024) found that digital literacy is associated with students' critical thinking ability in accounting education, while Aisyah and Dewi (2022) reported that digital literacy and economic literacy contribute to learning achievement in economics education. The present study complements these findings by translating the relationship between digital competence and cognitive development into an instructional design in which both competencies are developed through the same inquiry activities.

The findings are also consistent with evidence supporting active and student-centered learning in economics and accounting education. Anggita et al. (2022) found that active learning models such as *Learning Cycle 7E* and *Problem-Based Learning* are relevant to the development of critical thinking in accounting education. Similarly, Sukmawati and Ghofur (2023) demonstrated the potential of *Problem-Based Learning* integrated with *4C* skills to improve critical thinking in economics learning. However, the present study differs in its pedagogical orientation because the developed model emphasizes the complete inquiry process, from problem identification and hypothesis formulation to evidence-based conclusion and reflection. This distinction strengthens the contribution of the study by demonstrating that digital competence and critical thinking can be intentionally embedded across the stages of IBL rather than treated as separate outcomes.

The high improvement indicated by the *N-Gain* result can further be explained by the use of authentic economic phenomena and digital information sources during learning. Macroeconomic concepts become more meaningful when students are required to connect theoretical concepts with current economic conditions and analyze relevant evidence. Inquiry-based learning provides a suitable structure for this process because students are encouraged to investigate problems and construct explanations rather than simply reproduce information. Sari et al. (2025) found that *guided inquiry learning* can produce stronger critical thinking outcomes than *Problem-Based Learning*, further supporting the value of inquiry-oriented approaches for developing analytical abilities in economics education.

The findings also address a limitation identified in previous research. Existing studies have examined digital competence, digital literacy, inquiry-based learning, and critical thinking from different perspectives, but these components have not consistently been integrated into a single instructional design for Macroeconomics. Puri et al. (2026), for example, developed digital learning media to strengthen students' digital literacy in economics education, while Mulyati et al. (2026) examined the integration of artificial intelligence and *Problem-Based Learning* for digital economic literacy. These studies demonstrate the growing importance of digital competencies in economics education, but they employ different instructional frameworks. The present study contributes by integrating digital activities directly into the stages of IBL while simultaneously targeting critical thinking, thereby providing a more coherent pedagogical framework.

The findings have implications for Macroeconomics instruction in higher education. The results suggest that the development of digital competence should not be separated from disciplinary learning and higher-order thinking. Instead, digital tools can become meaningful learning resources when students are required to use them to investigate authentic problems, analyze evidence, collaborate, and communicate conclusions. This approach is particularly



relevant in the context of digital transformation in economics education, where students need not only to operate digital technologies but also to evaluate information and use digital resources to support sound economic reasoning. The developed model therefore offers a practical framework for lecturers seeking to move Macroeconomics learning from content transmission toward inquiry-oriented and digitally supported learning.

Overall, the study confirms that the integration of *Inquiry-Based Learning*, digital competence, and critical thinking provides a promising instructional direction for Macroeconomics education. The contribution of the study lies not merely in applying IBL, but in deliberately embedding digital activities and critical thinking indicators throughout the inquiry process. This integrated design responds to the identified gap in previous research and provides a basis for developing more adaptive, evidence-oriented, and digitally supported economics learning. Further research can examine the model with larger and more diverse samples and compare its effectiveness with other active-learning approaches to strengthen the generalizability of the findings.

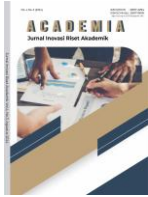
## CONCLUSIONS

The developed *Inquiry-Based Learning* (IBL) model provides a feasible and effective instructional approach for Macroeconomics learning by integrating inquiry activities, digital competence, and critical thinking within a single learning framework. The model enables students to engage systematically in identifying macroeconomic problems, collecting and analyzing information, evaluating evidence, and constructing conclusions while using digital technologies throughout the learning process. The findings indicate that this integrated approach can support the development of students' digital competence and critical thinking skills and offers a practical response to the competency demands of digitally oriented higher education.

The implementation of the model implies that Macroeconomics lecturers can use structured inquiry and purposeful digital activities to create more active and evidence-oriented learning environments. Future studies should test the model with larger and more diverse groups of students and examine its effectiveness through comparisons with other student-centered learning approaches. Further research may also investigate the long-term development of digital competence and critical thinking to determine whether the benefits of the model are sustained beyond the immediate learning intervention.

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