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A SCENARIO-BASED LEARNING APPROACH TO STUDY THE EFFECTIVENESS OF ECONOMIC KNOWLEDGE IN SIMULATED MONETARY POLICY-MAKING PROCESSES

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Abstract

This study examines the effectiveness of a scenario-based learning approach in enhancing learner's understanding of economic knowledge through engagement in a simulated monetary policy–making process. The participants were Grade 11th students studying the topic of the world financial crisis. The instructional intervention required learners to collaboratively analyze a simulated financial crisis scenario and formulate appropriate monetary policy responses. Collaboratively work, they examined relevant economic indicators, diagnosed the underlying causes and potential consequences of the crisis, and proposed policy instruments—such as, interest rate adjustments, and modifications to the money supply in order to achieve macroeconomic stabilization. A pretest–

posttest design was employed to assess development in learner's comprehension of monetary policy and core economic principles. The findings reveal that the majority of learners demonstrated a significant improvement in their conceptual understanding of monetary policy mechanisms, the role of central banks, and the broader dynamics of economic stabilization. These results suggest that integrating scenario-based learning with simulation activities constitutes an effective pedagogical strategy for promoting deeper conceptual understanding, analytical reasoning, and collaborative problem-solving skills in secondary-level economics education.

Keywords:
Monetary Policy, Scenario-Based Learning, Simulation-Based Learning, Economic Education, Conceptual Understanding

1. Introduction

Economics's considered as a subject which holds substantial academic and practical significance, as it provides students with a systematic understanding of how individuals and societies allocate scarce resources to satisfy unlimited wants. It introduces fundamental economic concepts such as demand and supply, opportunity cost, budgeting, inflation, and market mechanisms, which enable students to interpret and analyze real-world economic situations. By engaging with these concepts, learners are better equipped to apply economic reasoning in their daily lives, particularly in making informed decisions related to consumption, saving, and financial planning.

Scenario-based learning has emerged as a significant instructional approach in contemporary education due to its emphasis on contextualized, experiential learning that promotes deeper understanding and practical application of knowledge. By presenting learners with real-life or simulated situations, this method encourages active engagement, critical thinking, and problem-solving, enabling students to apply theoretical concepts to authentic contexts. It supports the development of higher-order cognitive skills by requiring learners to analyze situations, evaluate alternatives, and make informed decisions.

In this study, the author applied a scenario-based learning approach in the teaching of Economics through collaborative learning by simulating a financial crisis situation. Students were organized into groups and placed in a realistic economic scenario that required them to respond to issues such as declining production, rising unemployment, inflation, and policy interventions.

Through this simulation, learners actively applied their knowledge of economic concepts and financial policies, including fiscal and monetary measures, to analyze problems, propose solutions, and evaluate potential outcomes. This approach effectively facilitated the application of theoretical knowledge to practical situations, enhancing students' analytical skills and economic literacy.

2. Literature Review

2.1 Economics Course and Monetary Policy

Economics as a subject at the senior high school level is defined as a branch of social science that examines how individuals and societies allocate scarce resources to satisfy unlimited wants, encompassing production, distribution, and consumption of goods and services (Alayo, 2024). Scholars argue that including economics in secondary education is crucial because it equips students with foundational knowledge necessary for making informed personal and societal economic decisions, such as understanding markets, financial systems, and policy impacts (Heri & Mkulu, 2022). Research also highlights that economic education contributes to the development of economic literacy, enabling learners to interpret economic information and apply it to daily life roles as consumers, workers, and citizens, which in turn supports their preparedness for future academic pursuits and civic participation. Overall, the literature underscores that a well-structured economics curriculum at the senior high school level promotes both practical life skills and analytical competencies that extend beyond the classroom (Surjanti et al., 2023).

In the literature, financial policy is conceptualized as the set of strategic decisions, rules, and measures through which a government (or organization) manages financial resources—especially taxation, public spending, and debt. Scholars describe it as a mechanism that influences key economic outcomes by directing how revenue is raised and how funds are spent to impact national output, employment, and social welfare (Jassim et al., 2024). Moreover, rigorous study of financial policy is significant because it provides insights into how policy instruments can moderate economic fluctuations, improve public financial management, and guide decision-making in periods of economic uncertainty, thereby equipping students and policymakers with the analytical tools needed to understand real-world fiscal and financial challenges (Idrus, 2024). Finally, research into financial policy not only deepens theoretical understanding of public finance and macroeconomic governance but also underscores its practical relevance for shaping effective economic and social policy interventions (Mugurel & Sorin, n.d.).

Economics and financial policy learning at the senior high school level is critical for developing students' economic literacy and decision-making skills. A systematic review of financial literacy programs in school settings highlights that while such initiatives aim to equip adolescents with practical financial knowledge, there is notable heterogeneity in how concepts are defined and assessed (Molin et al., 2025). Similarly, studies on economic literacy among secondary students reveal that students' understanding of core economic concepts—such as scarcity, decision-making, markets, and opportunity cost—varies and often reflects moderate overall proficiency, pointing to the need for more targeted pedagogical approaches and policy support to enhance comprehension of economic systems and financial policy implications (Ismail et al., 2020). Moreover, research on integrating economic education into high school curricula identifies both barriers and opportunities, emphasizing that effective curriculum development, teacher training, and alignment with real-world financial policy issues can bridge gaps between theoretical knowledge and practical economic problem-solving skills among senior high school students (Khorasgani et al., 2024).

2.2 Scenario-Based Learning & Simulation-Based Learning

Scenario-based learning (SBL) is defined in educational research as an instructional approach that intentionally employs realistic, context-rich scenarios to engage learners in applying knowledge, making decisions, and solving problems that mirror authentic challenges they are likely to encounter in professional or real-world settings (Volpe, 2024). SBL situates learning within meaningful contexts, prompting learners to navigate complex situations and reflect on consequences in a safe, controlled environment, which enhances critical thinking, decision-making, and practical competence — characteristics valued in 21st-century education and workplace training (Narueprempree et al., 2023). In addition, Research underscores the significance of SBL in fostering deeper engagement, improving knowledge retention and application, and promoting learner autonomy, with empirical evidence showing that students exposed to scenario-based activities demonstrate better understanding and higher performance compared to traditional methods, particularly in disciplines requiring applied skills (Caballeda et al., 2025).

In the current, there are variety of learning context. Simulation-based learning (SBL) is widely conceptualized in educational research as a pedagogical approach that constructs artificial yet realistic representations of real-world processes or professional contexts, enabling learners to actively engage in experiential practice, decision-making, and problem-solving (Chernikova et al., 2020). In contrary, traditional didactic instruction, SBL emphasizes immersive interaction and

reflection, allowing learners to safely rehearse skills and responses, receive feedback, and consolidate knowledge before encountering real-life scenarios (Ramamurthy et al., 2024).

Research consistently demonstrates that SBL not only enhances learners' technical skills and cognitive understanding but also strengthens critical thinking, clinical reasoning, confidence, and retention of competencies, highlighting its significance in bridging the gap between theoretical knowledge and practical application, improving performance outcomes, and preparing learners to navigate the complexities of professional work (Lateef, 2010).

In the field of economics education, both scenario-based learning (ScBL) and simulation-based learning (SBL) have been increasingly recognized as effective pedagogical strategies for moving instruction beyond traditional lectures to more active, applied learning environments (Caballeda et al., 2025). Scenario-based approaches engage learners with structured, context-rich economic problems—such as analyzing sectors of the economy through real-world case scenarios. Simulation-based learning, particularly through economics-specific computer or role-play simulations, allows students to interact with models of economic systems (Fu et al., 2022). The literature on simulations and games in economics education further highlights that well-designed simulations and serious games, which embed key theoretical constructs within an interactive environment, support not only cognitive learning outcomes such as problem solving and analytical skills but also motivation and engagement (Van Wyk, 2013). Collaborative, scenario- and simulation-based methodologies represent powerful active-learning strategies that help bridge theory and practice in economics by situating learners within meaningful economic contexts.

3. Description of Overall Framework

3.1 Background and Overall Structure

Economics' s considered as an essential course for Social studies in Thai curriculum, learners studied the principal of Economics, and financial crisis as a real case study in the classroom. Then, learners were assigned the scenario-based approach through a simulation situation in ordered to create economic decision-making. There are four situations. For instance, Pandemic, International trade war, Property bubble, and Initial World War. This study are an active learning for Grade 11th students in the Engineering Science College, King Mongkut's University of Technology Thonburi (Figure 1).

Figure 1. *The Overall Framework of Scenario Simulative Monetary Policy-Making*

3.2 Research Design

3.2.1 Participants

78 students in Grade 11th of the Engineering Science College, King Mongkut's University of Technology Thonburi were participants in this study. All participant enrolled in ESC526 The Invisible Hands course. All participants already learned the Fundamental of Economics, Monetary Policy, Fiscal Policy, and Case study of Financial Crisis.

3.2.2 Procedure

The learning process of this study was divided into 4 main procedures which were presented in the Figure 2.

Figure 2. *The Learning Process of Scenario Simulative Monetary Policy-Making*

Part 1, the lecture on the topic “World Financial Crisis”. Part 2, Reviewing through Karhoot Quiz, learners joined the online quiz in Karhoot platform to answer 10 questions. Part 3, the simulative scenario activity on Economics, the main learning approach that learners were assigned to create the Monetary policy coping with the simulative financial crisis that instructor assigned them. According to those procedure, learners collaboratively worked in Canva as presentation’ s platform. The simulative financial crisis was based on the real phenomenon in 21st century history. For instance, Pandemic, International trade war, Property bubble, and Initial World War. Therefore, the monetary policy that they create’ d be consorted with the situation. Part 4, the presentation, participants presented their assignment within the class.

3.2.3 Data Collection and Data Analysis

In this study, data were collected in two forms: instructor-assigned scores based on students’ in-class presentations and students’ self-assessments conducted before and after the activity using a 5-point Likert scale. In the self-assessment, students rated their level of understanding of basic economic concepts, their knowledge of deflation, inflation, and interest rates, and the extent to which the activity “Designing a Monetary Policy” improved their understanding of monetary policy. The scoring criteria and questionnaire items were adapted from the framework of the Council for Economic Education. The survey also included questions about the skills students believed they developed through the activity, particularly those related to 21st-century learning skills. The collected data were then analyzed using a paired-samples t-test to examine changes between pre- and post-activity responses and to interpret the overall results of the study.

4. Result and discussion

4.1 Learning Achievement by Teacher Evaluation

Based on the evaluation of students’ presentations, three main components adapted from the Economic Reasoning Standards were assessed: identifying key economic issues, analyzing relationships, and critically evaluating the given simulated scenario in relation to the monetary policy that the students designed. Each component was rated on a 5-point scale. The results indicated that the students achieved mean scores of 4.47 ± 0.87 for identifying key economic issues, 4.31 ± 0.58 for analyzing relationships, and 4.53 ± 0.61 for critical evaluation, respectively (Figure 3).

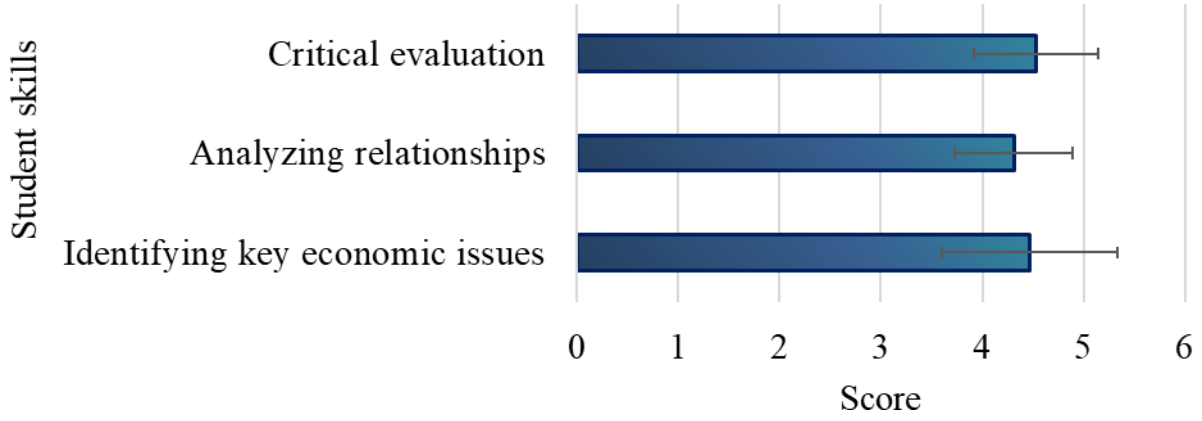

Figure 3. *Learning Achievement by Teacher Evaluation*

Table 1. Learning Achievement Score by Teacher Evaluation

Items	Mean score (10)	n
Digital literacy skill	8.37 ± 0.07	79
Communication skill	8.75 ± 0.05	79
Critical thinking skill	7.79 ± 0.11	79
Creativity skill	9.71 ± 0.21	79

4.2 Student- Self Assessment Score

4.2.1 The self-assessment scores in each dimension

A comparison of students' self-assessment scores before and after the activity showed that the mean scores for all items increased after the activity (Figure 4). When analyzed using a paired-samples t-test at the 95% confidence level, the results indicated that the increases were statistically significant. The detailed results are presented in Table 1.

Table 1. *Students' Self-Assessment Score*

Skill	Experiment	*n*	Mean±SD	*t*	*P*
1. Understanding of basic economic concepts	Before	78	3.09±1.17	11.28	<0.001
	After		4.23±0.36		
2. Knowledge of deflation, inflation, and interest rates	Before	78	3.41±0.79	10.38	<0.001
	After		4.33±0.54		
3. Improved their understanding of monetary policy	Before	78	3.10±1.15	9.91	<0.001
	After		4.22±0.59		

**P<0.05*

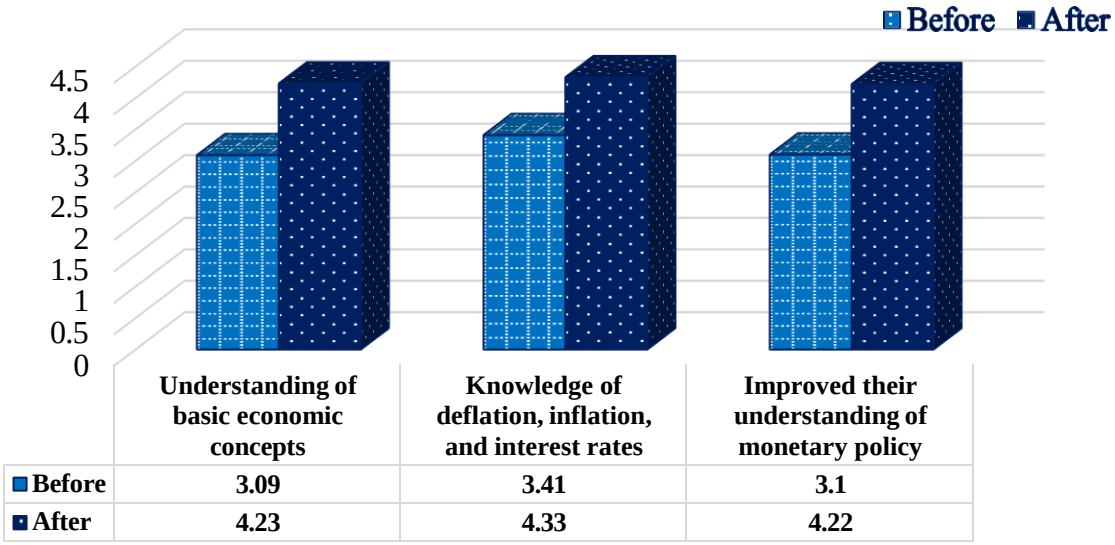

Figure 4. *Student Self-Assessment Score*

4.2.2 Assessment of the Development of 21st-Century Learning Skills

Based on the evaluation of 21st-century learning skills after completing the activity, which included critical thinking, communication, creativity, and collaboration, the results showed that students perceived critical thinking as the skill most strongly developed through this activity, accounting for 72%. This was followed by creativity at 14%, while collaboration and communication accounted for 8% and 6%, respectively (Figure 5).

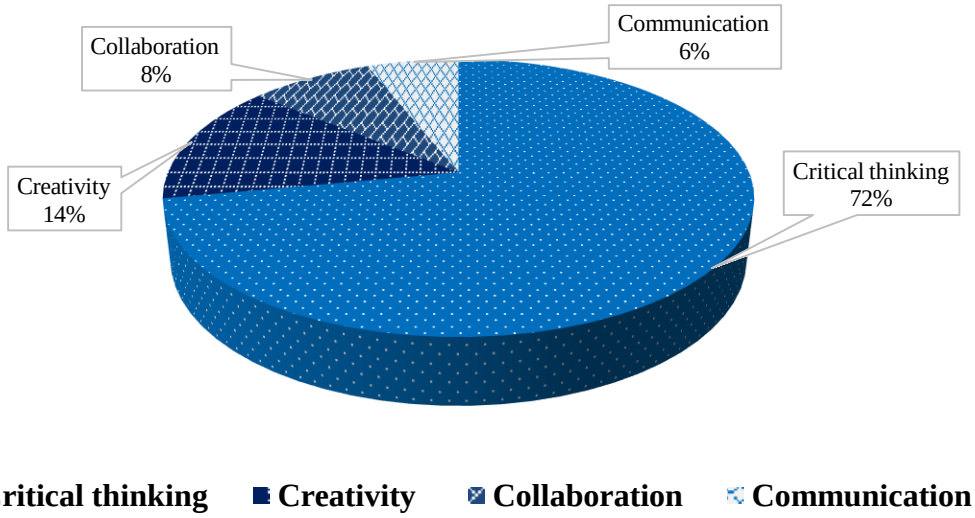

Figure 5. *Evaluation of 21st-Century Learning Skills*

5. Conclusion and Conclusion

Based on the overall findings, it can be concluded that applying Scenario-Based Learning in economics classes can help students understand the lesson content more clearly and effectively. This approach requires students to apply the knowledge they have learned to solve problems in assigned situations, which encourages deeper understanding through active engagement. This finding is consistent with the study conducted by Hassan et al. (2023), who applied Scenario-Based Learning in mathematics education and reported positive learning outcomes (Hassan et al., 2023). In addition, Scenario-Based Learning can reduce the boredom often associated with traditional lecture-based instruction that mainly focuses on content delivery. It also promotes essential 21st-century learning skills. Furthermore, beyond the benefits mentioned above, the results of this study suggest that Scenario-Based Learning supports students in developing a solid understanding of economic knowledge to the extent that they are able to construct and present a simulated monetary policy-making process in a meaningful and realistic way.

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