

Development And Acceptability of the Economy Board Game for Macroeconomics Learners of Pangasinan State University

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Abstract – This study documented and determined the development of the Economy board game for Economics students of Pangasinan State University. The Economy Game is a detailed, challenging, and strategic expenditure trading game that is used as an instructional material in Macroeconomics course. The descriptive survey method was employed in this study to determine the level of acceptability of the developed game. The study's respondents were 42 second-year students enrolled in a Bachelor of Arts in Economics program at Pangasinan State University. These students were oriented on the objective and mechanics of the game and eventually they were able to play the board game for several sessions. Based on the results, students demonstrated positive responses to all dimensions in terms of perceived usefulness, the convenience of use, attitude toward usage, and intention to use, supported by an overall weighted mean of 4.56, descriptively rated as very highly acceptable. This suggests that the respondents involved appreciated the game and its content, purpose, and use.

Keywords – vision, mission, goals, objectives, awareness, acceptance, perception, stakeholders

INTRODUCTION

Educational games are gameplays plainly designed as instructional tools used in the classrooms. They are developed to help students learn about certain topics and subjects, enhance learning, improve motivation and develop skills. Game types include board, card, and other forms of game-based-learning which are interactive play that teaches students strategy, decision-making, rules, goals, problem solving, counting, interaction, among others. Some educators are using games for learning in their classrooms and games are becoming a key tool used in many learning environments today.

Should games be utilized in the classroom? Various researches have revealed that there are numerous benefits to playing games in the classroom. In the study of Dobbins (2012), games are argued to be an excellent supplement to standard lecture. As evidence, both computerized and non-computer based simulation and games are showing significant levels of growth in education. Benefits of games as teaching and learning tools were identified which include promoting greater student involvement, providing further integration of principles, providing students with experience in analysis and critical thinking and providing a vehicle

through which students can sharpen interpersonal and communication skills.

Educators are always challenged on how to provide a quality learning experience to students taking up Economics. Economics degree is designed to provide students with working knowledge in economic concepts and skills in performing economic analysis and modelling and economic policies necessary to understand the functioning of the economy.

According to Greenlaw (1999), the recommendation in many economics education studies is to adopt more active and collaborative learning methodologies. Simkins (1999) stated in his study that teaching practices, which rely heavily on the lecture format, are not doing enough to develop students' cognitive learning skills, attract good students to economics, and motivate them to continue coursework in the discipline". This is consistent with the results of a survey published in the American Economic Review by Allgood (2004) that shows that students rarely take economics as a free elective –especially beyond principles. More is needed to be done in the classroom to excite students about economics education. McHaney (2002) claimed that games are effective tool to teach economics that could reinforce the motivation and class

positivity and improve the learning experience of students.

Studying macroeconomics has paramount importance in analyzing the functioning and dynamics of the economy. It helps people understand the nature and pattern of the aggregate variables in the large and complex economic system.

Macroeconomics is a core subject of all students taking up an Economics course. It provides a thorough view on how the economy works and how different economic agents as a whole respond to changes in the economic environment contemplating numerous variables such as national income, consumption and investment, inflation, unemployment, aggregate demand and supply, monetary and fiscal policy, economic growth, poverty, income inequality and international trade.

The Bachelor of Arts in Economics is a program offered in the Lingayen Campus of Pangasinan State University. This program is designed to provide students with an educational background and experience which reflects the setting in the life of the economists in business enterprises and government agencies. The program is grounded on theoretical as well as applied economics which is intended to sharpen the student's analysis and understanding of the complexities of today's economy. In accordance with the CHED MEMORANDUM ORDER No. 32 Series of 2017, the program's new curriculum now features a curriculum that is designed to equip students with knowledge in economic theory and its applications and with essential skills for undertaking economic analysis.

The researcher sees the essential utilization of an educational resource thru a board game that may be used by Economics students in Pangasinan State University for effective and simplified learning of complex ideas in macroeconomics course. The game is supposed to boost active learning and develop the critical thinking, problem-solving, and analytical skills of students.

In line with the intent of developing a an educational board game in macroeconomics cours, the researcher would like to determine the acceptance of the of game among Economics students.

OBJECTIVES OF THE STUDY

The purpose of this study is to introduce the developed board game, The Economy Game, in terms of its game description, ojective, player composition, playing time game equipment, game preparation, and mechanics. The study also gauge respondents' acceptability of the game using four constructs, including (1) perceived utility; (2) ease-of-use percentage; (3) attitude toward utilization, (4) perceived intent to use.

MATERIALS AND METHODS

Design and Procedure

The descriptive survey method was employed in this study to determine the level of acceptability of the developed game. The study's respondents were 42 second-year students enrolled in a Bachelor of Arts in Economics program at Pangasinan State University. These students were oriented on the objective and mechanics of the game and eventually They were able played the board game for several sessions.

RESULTS AND DISCUSSION

Development of the Game

Game Description

Economy Game is a detailed, challenging, and strategic expenditure trading game that is used as an instructional material in Macroeconomics subject. Here, the players may act or represent as household, firm, government and foreign sector to buy, trade or acquire expenditures such as consumption spending, investment spending, government spending and net export spending. By performing the roles of the economic sectors and taking into consideration various macroeconomics concepts such as consumption, income, production, inflation, deflation, employment, unemployment, underground economy, business cycle, Gross Domestic Product, recession, depression, money and taxes, the goal is to dominate the play by acquiring expenditure items as many and high as possible to become the richest player at the end.

Objective of the game

The objective of the game is to earn the most value of expenditure items acquired and money possessed on the board at the end. This is achieved by acquiring expenditure items as many and high as possible through carrying out the roles of economic sectors, performing wise economic decisions and using strategically macroeconomic concepts and variables, supported by luck from the dice and the cards.

Player Composition and Playing Time

This game can be played by 2 to 6 players. Ideally, the game is played by 4 players. Set-up time ranges from 5 – 10 minutes. The playing time is about 1 – 3 hours.

Game Equipment

The Economy game consists of a board, 2 dice, 4 pieces (tokens), 2 decks of playing cards, play money, a facilitator's tray and a transaction pad.

The gameboard consists of 100 spaces numbered from 1 to 100. Sixty (60) of these spaces are expenditure items which are designated with a corresponding name, listed price and color type. There are 15 each of consumption spending, investment spending, government spending and net export spending which can be acquired by players. The non-expenditure spaces have a composition of 40 consisting 8 distribution, 4 scarcity, 2 depression, 2 recession, 2 economic development, 2 economic growth, 6 financial institution, 3 corporate tax, 3 income tax, 4 underground economy and 4 exchange.

There are two decks of cards. The first deck of cards consists of the economic sector cards and the other deck of cards consists of economy cards. Playing cards are used by players to buy or acquire expenditure items, collect money bills, earn bonuses and incur fines. The front cover of the logic card is depicted below.

Game Preparation

The preparation of the game involves the following procedures: (1) Place the board preferably on a table and put the playing cards in their allotted spaces on the board. (2) Each player chooses one token to represent him/her while traveling around the board. (3)

Each player is provided with P50 million divided as follows: 10 P500 T bills, 5 P1 M bills, 5 P2 M, 4 P5 M bills and 1 P10 M bill and two each of economy cards. (4) Select an Economy Facilitator (EF).

Game Mechanics

1. Players will get a piece or token to represent themselves as they move around the Economy gameboard.
2. Each player starts with P50 million amount of money on hand and 2 cards each of household card, firm card, government card and foreign sector card.
3. Players will roll a die to determine who moves first. The player who gets the highest point will go first, the second highest pointer goes next, and so on and so forth.
4. Every turn consists of three steps: (1) roll the dice and place the token on the landed space; (2) acquire an expenditure item or do other things and (3) draw economic sector card and economy card from two decks of cards and decide strategically what economic card will be used.
5. A player rolls 2 dice when it is his turn to act. The die indicates the direction of the token or to know how many spaces he moves on his turn.
6. The spaces on the board typically correspond to various expenditure items that players can acquire such as consumption spending, investment, government spending and net export spending. The board also consists of non-expenditure spaces where a player may get bonus or incur fine consisting distribution, scarcity, depression, recession, economic development, economic growth, financial institution, corporate tax, income tax, underground economy and exchange.
7. The player moves his token to the number of spaces. When he lands on an expenditure item space, he has the chance to acquire this using the appropriate economic sector cards (household card, firm card, government card and net export card). The player gives a corresponding economic sector card to the economy facilitator every time he acquires an expenditure item.
8. A player who lands on a consumption expenditure item can acquire it by using a household card and paying it with its

- corresponding listed price. The consumption expenditure items on the economy gameboard are: purchase a sports car (9.5 m), buy a condominium unit (10 m), consume meat products (5 m), purchase clothing (7 m), buy grocery items (8 m), purchase home appliances (9 m), buy mineral water (3 m), demand for jewelry (7.5 m), consume dairy products (3.5 m), demand for fast food meals (5.5 m), avail salon spa services (6 m), demand for movies (4 m), demand for home care services (7 m), demand for hotel services (8.5 m) and consume internet services (6.5 m).
9. A player who lands on investment expenditure item can acquire it by using a firm card and paying the item with its corresponding listed price. the investment expenditure items on the economy gameboard are: construct a textile factory (4.5 m), produce processed fish products (4.5 m), buy farm inputs (5 m), purchase delivery trucks (4 m), build an automobile assembly plant (7 m), buy manufacturing equipment (8 m), buy raw materials (3 m), invest on industrial robots (7 m), supply shoes (6 m), sell liquor products (7.5 m), supply web development services (6.5 m), manufactures toiletries consumer products (9.5 m), manufacture ships (10 m), manufacture furniture products (8.5 m) and supply transportation services (9 m).
 10. A player who lands on government expenditure item can acquire it by using a government card and paying the item with its corresponding listed price. the government expenditure items on the economy gameboard are: build bridges and highways (9.5 m), construct public hospitals (5 m), compensate government employees (10m) provide conditional cash transfer program (7.5 m), purchase military weapons (5 m), purchase police cars (3 m), spend on social welfare (9 m), construct school buildings (8.5 m), construct dams (4.5 m), provide affordable housing program (5.5 m), pay debt (5 m), spend on health insurance program (8 m), provide social security benefits (6.5 m), spend on social welfare (7 m) and provide energy subsidies to firms (6 m).
 11. A player who lands on net export expenditure item can acquire it by using a net export card and paying the item with its corresponding listed price. the net export expenditure items on the economy gameboard are: import oil products (10 m), export pharmaceutical products (7 m), export gold (8 m), import plastics (3 m), import organic chemicals (5.5 m), export iron and steel (6.5 m), export semiconductors (7.5 m), export vehicles (8.5 m), import computers (9.5 m), import smartphones (9 m), import wheat (6 m), import coffee (5 m), export refined sugar (4 m), export corn (4.5 m), export labor services (6 m).
 12. When a player lands on distribution (distribution of income or output among individuals or factors of production) space, he can use this to move freely on the board horizontally and vertically to acquire any expenditure item of choice.
 13. When a player lands on financial institution (provides financial services or loans to economic sectors) space, he receives a financial loan of P5 m (low), P10 m (medium) or P15 m (high) from game facilitator.
 14. When player lands on an income or corporate tax (financial charge imposes by the government to households and firms to fund various public expenditures) space, he pays a fine of P5 m (low), p10 m (medium) or P15 m (high) from the game facilitator.
 15. If a player lands on underground economy (part of the economy that is purposely hidden from the view of the government to avoid taxes and regulations or where economic activities are unreported, thus it is omitted from (GDP) space, the player cannot acquire expenditure items and cannot do anything until his next turn.
 16. If a player lands on scarcity (fundamental economic problem) space, he loses 1 turn and requires to pay P5 million.
 17. If a player lands on economic growth (the ability of an economy to increase the level of production as measured by real GDP) space, he moves 5 or 10 spaces forward on the board.
 18. If a player lands on economic development (economic growth plus the attainment of standard of living) space, he moves 15 or 20 spaces forward on the board.
 19. If a player lands on recession (general slowdown in economic activity due to fall in GDP) space, he moves 7 or 11 spaces backward on the board.
 20. If a player lands on depression (severe recession) space, he moves 16 or 21 spaces backward on the board.

21. If a player lands on exchange (process of trading goods and services among economic sectors) space, he engages in an expenditure auction. the economy's facilitator will bid on the expenditure item chosen by the player. the highest bidder will eventually acquire the expenditure item. A player draws one card each from two decks of cards in every turn.
22. A player draws one card from the deck of economic sector cards. the economic cards include household (buys and consumes goods and services) card, which is used to acquire consumption expenditures, firm (produces goods and services and buys capital goods) card which is used to acquire investment expenditures, government (collects taxes and provides public goods and services) card, which is used to acquire government expenditures and foreign sector (exports and imports goods and services) card, which is used to acquire net export expenditures and economy (the result of a set of processes and economic activities including production, distribution, trade and consumption of goods and services by different economic agents/sectors) card which is used to acquire any of the four expenditure items.
23. A player draws also one card from the deck of economy cards in every turn. the economy cards can be used by a player to collect money bills, get bonuses and incur fines when acquiring expenditure items. the cards consist of money, free spending, production, consumption, boom phase, slump phase, inflation, deflation, household's wage, firm's revenue, government's revenue, foreign sector's revenue, satisfaction, profit maximization, government's taxes, net export, low GDP, high GDP, employment, unemployment, consumption spending, investment spending, government spending and net export spending.
24. If a player draws a money (medium of exchange which is generally accepted as payment for goods and services) card, he can generally use this as additional bills for the payment of expenditure items to be acquired. the money cards have a composition of 5m, 10m, 20m and 30m.
25. If the player draws a free spending card, he gets the chance to acquire any expenditure item without pay by selecting an item horizontally or vertically on the landed space. The player needs an appropriate economic sector card to acquire the expenditure item.
26. If the player draws a production (process of transforming inputs into outputs) card, he can use this to be a producer giving him the opportunity to produce and eventually acquire an expenditure item. this card is only used to acquire investment, government and net export expenditures. the player pays 3m as incurred cost for the item to be produced.
27. If the player draws a consumption (process of buying goods and services for the purpose of maximizing utility) card, he can use this to be a consumer giving him the opportunity to consume and eventually acquire the consumption expenditure item expenditure item. This card cannot be used to acquire investment, government and net export expenditures. The player pays 3m as payment for the item to be consumed. If the player draws a boom phase (a period of rapid economic growth) card, he uses this in order to acquire two expenditure items at the same time.
28. If the player draws a slump phase (widespread drop in spending) card, he uses this in order to give up or forego an acquired expenditure item at any rate. when the player fails to use this card at the end of the game, the player is forced to sacrifice the expenditure item with the highest value acquired.
29. If the player draws inflation (sustained increase in the price level of goods and services) card, he gets a fine or bonus by increasing or decreasing the price of the expenditure item to be acquired by 25%, 50% or 100%.
30. If the player draws a deflation (sustained decrease in the price level of goods and services) card, he gets a fine or bonus by increasing or decreasing the price of the expenditure item to be acquired by 25%, 50% or 100%.
31. If the player draws a household wage (the income payment or monetary compensation paid by the firm to a household worker in exchange for labor services done) card, he receives a cash bonus of p5 m, p10 m or p15 m to be used only for acquiring consumption expenditure items.

32. If the player draws a firm's revenue (the income that a business firm derives from the sale of goods and services) card, he receives a cash bonus of P5 m, P10 m or P15 m to be used for acquiring investment expenditure items.
33. If the player draws a government's revenue (the income that the government receives from taxes and non-tax sources) card, he receives a cash bonus of P5 m, P10 m or P15 m to be used for acquiring government expenditure items.
34. If the player draws net export's revenue (the income that the foreign sector gets from imports and exports) card, he receives a cash bonus of P5 m, P10 m or P15 m to be used for acquiring net export expenditure items.
35. If the player draws satisfaction (consumers' ultimate goal) card, he uses this to increase the value of the consumer expenditure item acquired by 25%, 50% or 100%.
36. If the player draws a profit maximization (business firms' ultimate goal) card, he uses this to rise the value of the investment expenditure item acquired by 25%, 50% or 100%.
37. If the player draws government taxes (government's major source of funds) card, he uses this to raise the value of the gov't expenditure item acquired by 25%, 50% or 100%.
38. If the player draws the next export (difference between the value of exports and the value of imports) card, he uses this to increase the value of the net export expenditure items acquired by 25%, 50% or 100%.
39. If the player draws low GDP (low total output/production level in the economy) card, he incurs a fine by decreasing the value of points acquired by 10 m.
40. If the player draws high GDP (high total output/production level in the economy) card, he uses this to increase the value of points acquired by 10 m.
41. If the player draws employment (total number of people currently employed in the economy) card, he incurs a fine by increasing the value of points acquired by 5 m.
42. If the player draws unemployment (total number of people currently unemployed in the economy) card, he incurs a fine by decreasing the value of points acquired by 5 m.
43. If the player draws consumption spending (expenditure made by household on consumer goods and services) card, he uses this card to acquire a consumption expenditure item.
44. If the player draws investment spending (expenditure made by firms on capital or investment goods) card, he uses this card to acquire an investment expenditure item.
45. If the player draws government spending (expenditure made by the government on public goods and services) card, he uses this card to acquire a government expenditure item.
46. If the player draws net export spending (expenditure made by the foreign sector on imported and exported goods and services) card, he uses this card to acquire a next export expenditure item.
47. If a player lands on an expenditure item which is already acquired or owned by another player, he must pay the owner a corresponding fine amounting to 50% of the expenditure item's listed price.
48. If the player reaches the last space (100th space), he obtains 10 m additional value points and goes back to the 1st space.
49. For the standard game, if the stock of cards runs out, the play stops. For a short game, the player may set a time limit for the game, say 1 hour, and after the set playtime, the game ends.
50. The economy facilitator will calculate the accumulated total value of all the expenditure items acquired by each player. the amount of remaining money bills on hand by the players will be counted and be divided by two corresponding to obtain the money value. he will also calculate the necessary point deductions for unused fine cards during the game.
51. The winner would be the player with the highest combined value of total expenditure acquired and amount of money bills possessed.

Acceptability of the Students Using the Economy Board Game

There was a total of 43 students who played and evaluated acceptability of the Economy Game. The level of acceptability is presented in the following table:

Acceptability Indicator	Mean	Descriptive Interpretation
Perceived usefulness	4.75	Very highly acceptable
Perceived ease of use	4.33	Very highly acceptable
Attitude towards usage	4.55	Very highly acceptable
Perceived intention to use	4.61	Very highly acceptable

Based on the results, students demonstrated positive responses to all dimensions in terms of perceived usefulness, the convenience of use, attitude toward usage, and intention to use, supported by an overall weighted mean of 4.56, descriptively rated as very highly acceptable. This suggests that the respondents involved appreciated the game and its content, purpose, and use.

The first dimension, “Perceived utility and attitude toward usage obtained the highest mean of 4.75, suggesting that students strongly believe the Economy board game is beneficial to simplify concepts and theories in Macroeconomic course, create a fun and engaging learning environment and enhance learning motivation.

CONCLUSION AND RECOMMENDATION

The developed educational board game – The Economy Game”, is a detailed, challenging, and strategic expenditure trading board game that subject is a fun and challenging. The findings applies different concepts and principles of Macroeconomics. The game uses a game board, concept cards, dice, play money and transaction pad. The game board, question cards, and game instructions. The objective of the game is to earn the most value of expenditure items acquired and money possessed on the board at the end. This is achieved by acquiring expenditure items as many and high as possible through carrying out the roles

of economic sectors, performing wise economic decisions and using strategically macroeconomic concepts and variables, supported by luck from the dice and the cards.

Based on the results, students demonstrated positive responses to all dimensions in terms of perceived usefulness, the convenience of use, attitude toward usage, and intention to use, supported by an overall weighted mean of 4.56, descriptively rated as very highly acceptable. This suggests that the respondents involved appreciated the game and its content, purpose, and use.

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