

Local Wisdom Board Game Based on the Concept of STEAM Education to Promote Innovator Skills

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Abstract

The objectives of this research were: 1) to develop local wisdom board game media based on the STEAM education concept to promote efficient innovators' competency; and 2) to study the level of satisfaction of students towards the local wisdom board game media. Based on the STEAM education concept to promote innovators' competency. The tools used in the research were: 1) learning materials for board games of local wisdom based on the concept of STEAM education to promote innovators' competency; 2) handbooks for learning materials for board games of local wisdom based on the concept of STEAM education to promote innovators' competency; and 3) a questionnaire to measure students' satisfaction towards learning media for local wisdom board games based on the STEAM education concept to promote innovators' competency. The sample consisted of fifth-grade students. One study group of 30 students was obtained by simple random sampling. The results showed that evaluation results of the quality of learning media, board games, and local wisdom based on the concept of STEAM education promote innovators' competency. The quality is very good. And the students were satisfied with the learning materials, board games, and local wisdom based on the concept of STEAM education to promote innovators' competency. At the most satisfactory level.

Keywords: Board Game, STEAM Education, Local Wisdom

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Introduction

Thailand is changing swiftly today. It is a continuous consequence of entering the era of the industrial revolution. Adaptability to change is a challenge the world faces. Therefore, the drive for Thailand's 4.0 policy (Thailand 4.0) is of vital importance. Human resource capital that is able to adapt to such changes will be the determining factor in the ability to deal with global change. Australia, the United Arab Emirates, and Israel ranked first, second, and third, respectively, in the 2017 International Institute of Management's International Entrepreneurial Skills Rankings, while Thailand placed twenty-first. Thailand ranked 34th in terms of quality of life, while Norway, Switzerland, and Austria rated first, second, and third, respectively (IMD: 2017). In 2018, it was determined that Lithuania, the United Arab Emirates, and Israel ranked first, second, and third, respectively, while Thailand ranked twenty-fourth. Thailand was ranked 37th in terms of quality of living, behind Austria, Norway, and Switzerland. First, second, and third, with Thailand falling in both categories. It was also determined that the country ranked 53rd in terms of national income deficit and 49th in terms of investment impact. (IMD: 2018) Thailand's prior national development has emphasized economic prosperity. The development of information technology by placing a premium on innovation and introducing new products. Promoting scientific process skills is the starting point for developing science teacher students' practical skills and critical thinking skills in order to extend to the creation of learning materials. Educational Board Game Design Learning Management Design Science Learning Activities to Expand Youth Access Therefore, it should be encouraged to integrate the development of scientific process skills into the process of learning management. For young people to recognize the significance of honed practical skills and imaginative thinking abilities So as to integrate and apply the design of learning management in daily life. Therefore, learning management that emphasizes empirical process skills should be prioritized. As a result of enhancing the skills of higher education students in the field of education.

Educational resources Educational board games Students pay close attention to board games as a form of learning media. Because the game's content is challenging, entertaining, and enticing, it also serves to promote the players learning in the following ways: 1) Develop pondering skills (pondering skills) Board games can aid in the development of learners' information-gathering skills. From comprehending the objective of the activity to remembering the norms and engaging in critical thinking while playing. 2) Develop problem-solving abilities. (Aptitude for Problem Solving) Board games frequently simulate situations in which participants must solve problems with limited resources and time. When a participant repeats an action at the optimal rate, their abilities will be effectively enhanced, and their self-esteem will also be bolstered. 3) Develop social competencies (social emotional learning competencies). The board games that are played in partnerships or teams which students must be able to divide the tasks and listen to one another's perspectives Consider your own motives. Encourage children to discover the feelings and motives of others. 4) Developing morals (ethical characteristics) Players must adhere to the rules of play during play. When he became corrupt, whether intentionally or unintentionally, he had the courage to acknowledge his error. This is an internal responsibility. and result in self-respect (self-esteem). 5) Developing self-esteem (high self-esteem) when first discovering something Indecisiveness may not be clearly known because not all data can be collected. However, by playing continuously, learners will be able to improve their performance until they reach their objectives (Wachirawit Iamwilai, 2020).

The researcher intends to conduct a study to develop learning media and a board game to investigate local wisdom. to promote innovators' competence As part of the development of a set of STEAM learning management activities, investigate the promotion of innovators' competency through the use of indigenous knowledge. For upper elementary students.

Literature Review

An educational game is an activity designed to help students develop their observational and logical reasoning skills. that are distinct from common games Generally, games will emphasize the importance of enjoyment. relationship and delight, but an educational game Will emphasize the significance of transformations within the individual. and cause external modifications. There are a variety of game-based learning formats, including board games, introduction games, assessment games, and recreational games, among others. The educational value of board games After the students have completed playing the game, a transcript of their reasoning will be provided. that throughout the game Why each character determines to act, why, and how events in the game can be related to real life to see each other's perspective (Nuchanat Nuchmee, Naruemon Sirawong, Kanokkorn Chantarunghak, 2021). The majority of board games foster decision-making skills, communication, interpersonal relationships, and a desire to hear others' perspectives.

Using board games as an instructional medium is a method for achieving learning objectives with students. By having students play board games according to the rules and conveying the contents and information of board games, you can teach them about board games. The learners' playing behavior, playing methods, and board game results were used to summarize their learning in the discussion (Napasri Sueng and Tiparat Sitthiwong, 2020). entertainment for students Players must adhere to the established guidelines. Encourage students to learn, remember, and reflect. Lessons are simple, and abilities for learning how to collaborate are acquired rapidly. The process of working and living together is ongoing. Evaluation of player accomplishments There could be a loss, a triumph, or no match. And there might be positive incentives to participate, such as points, candies, etc., as rewards. In the process of integrating lessons, teaching, or lesson summaries, board games can be used to support instruction. Board game advertising improves intelligence. Students should be able to play board games individually or in groups with straightforward rules. Board games will help students observe, reflect, and reason (Sueng, Sueng, & Sittiwong, 2020).

Utilizing board games for education It highlights the significant potential of the game. To answer the query, learning is enjoyable when it requires action or a decision. and feeling engaged in the conditions, constraints, and outcomes of that decision This is not something easily gleaned from standard lectures. but engaging educational games It's not for pleasure alone. But must still prioritize answering the essential concerns of learning. 1) Knowledge: the learner has acquired the expected knowledge, such as an understanding of the theory of economic cooperation. 2) Attitude: As a result of playing the game, the learner's perspectives on certain topics, such as the limitations of certain actors in society, have shifted. 3) Procedures. Issues learned, for instance, can influence whether or not other participants cooperate (Chananann Areekul, 2020).

Examine the perspectives of those who contribute to local wisdom. Examining the perspectives of local wisdom practitioners and educational personnel involved in learning management in educational institutions It is the application of study outcomes, document analysis, and document synthesis as guidelines for examining opinions. By developing an

interview form and a survey to collect opinions on local wisdom. In order to attain in-depth knowledge, it is necessary to provide specifics. The northern, central, northeastern, and southern regions comprised the four research divisions.

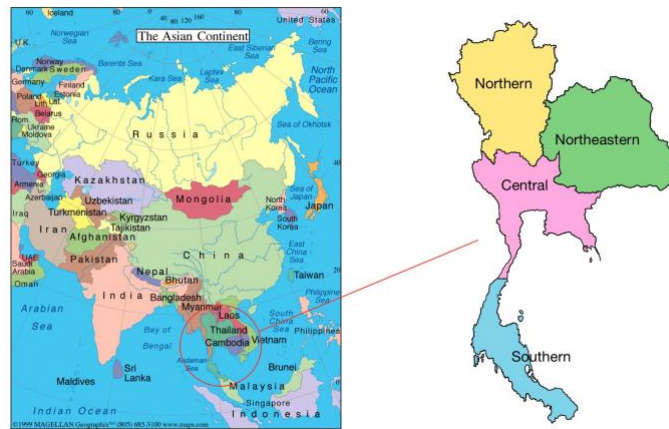


Figure 1: Local wisdom map

Conceptual Framework

Utilizing a learning management system that emphasizes student participation, the researcher has applied the concept of learning development to learners. Learn through enjoyable activities. Active learning management, which involves interacting with a diversity of learning activities through hands-on activities, serves as a conceptual framework for the following research:

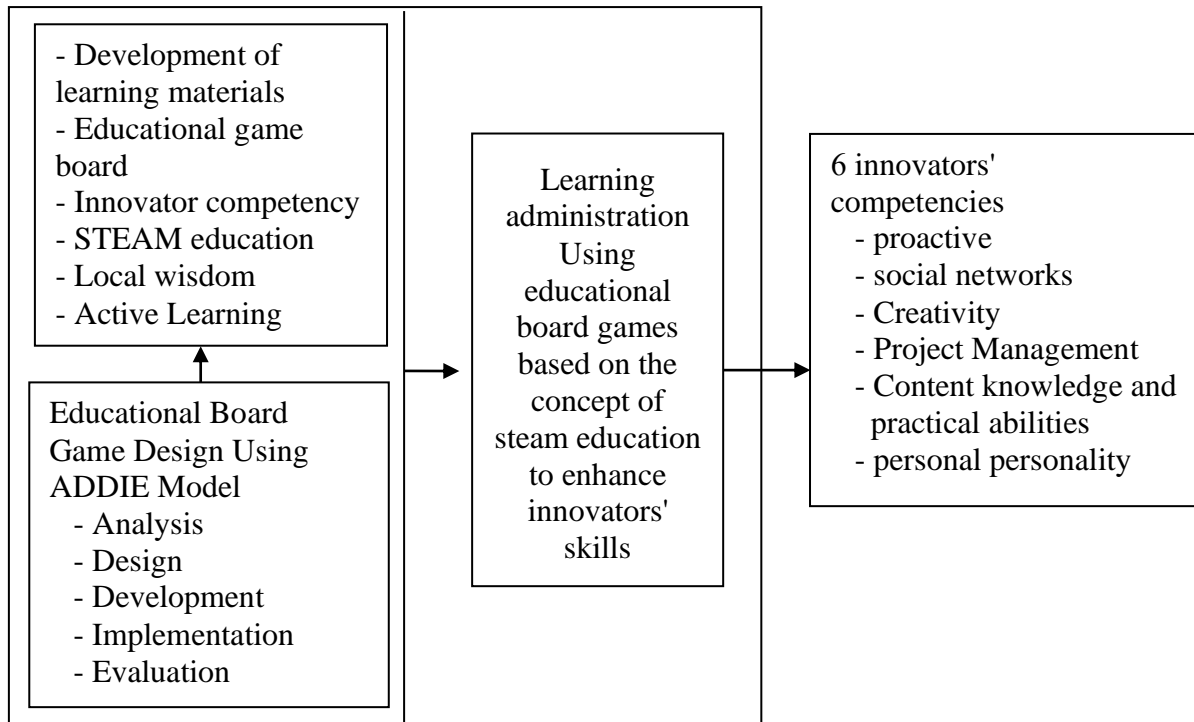


Figure 2: Conceptual Framework

Methodology

Procedure

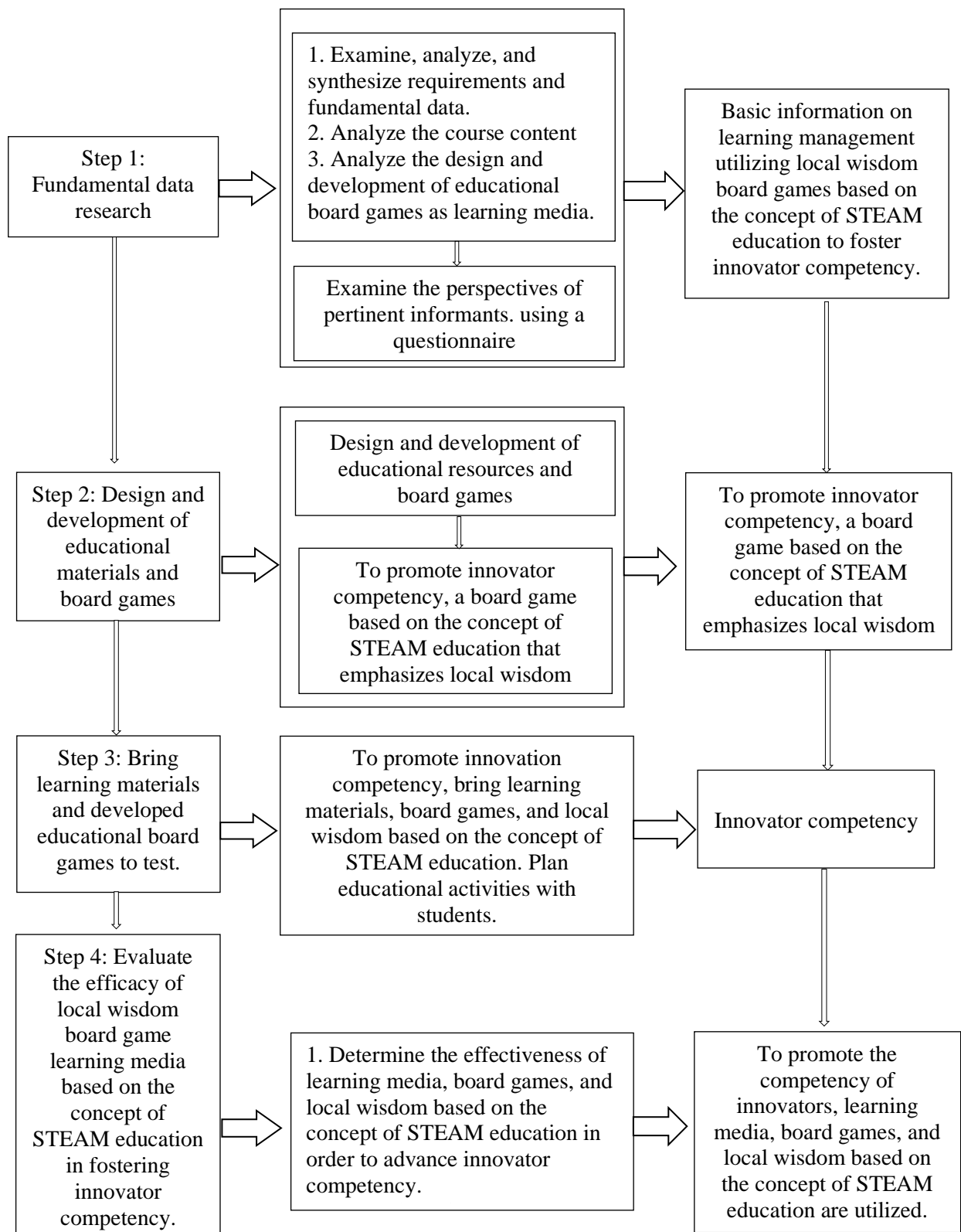


Figure 3: Procedure

Procedure

This research consisted of four steps: 1) a fundamental information study; 2) the design and development of educational board game learning media; 3) the trial use of educational board game media; and 4) the evaluation of learning materials for educational board games.

Steps: 1 A fundamental information study.

1. investigate the concepts, theories, and principles underlying the development of educational materials and board games.
2. Examine the content of indigenous knowledge and the guidelines for creating learning media and educational board games.
3. Examine the perspectives of those involved with educational board game learning materials. To investigate the perspectives of individuals involved with educational materials and board games.
4. Utilize the study's findings, analysis, and synthesis of documents as guidelines for researching the opinions of those involved in learning media and educational board games. And educational personnel engaged in learning management in educational institutions via educational materials and board games Creating interview forms and questionnaires to collect feedback on educational materials and board games Number of interviewees: 30 individuals 30 participants responded to the survey. Gather information in order to construct the next game board.

Steps: 2 The design and development of educational board game learning media.

The research tools consisted of 1) educational board game learning media and 2) a questionnaire to measure students' satisfaction with the board game educational media. The steps are as follows:

Educational board game learning media

1. Examine documents and research pertaining to the creation of educational materials and board games. and planning educational activities using instructional materials and educational board games.
2. Examine the content specifics.
3. Development of educational materials and board games.
4. Using the ADDIE Model, this investigation developed an educational board game.
5. Bring along educational materials and game boards. Validate the content's appropriateness, the language's usage, the coverage, and the objectives' conformity. then make improvements.
6. Bring learning materials and educational board games for evaluation by five specialists. The specialists are experts in the creation of instructional materials and pedagogical board games.
7. Bring learning materials and revised educational board games to test with sixty students in order to improve.
8. Introduce instructional materials and educational board games.

Examples of local wisdom board games



Figure 4: Examples of local wisdom board games

A questionnaire to measure students' satisfaction with the board game educational media

The satisfaction survey was used as a measure of sentiment. Students have both positive and negative opinions of learning materials and educational board games. which seeks to measure the satisfaction assessment form's behavior The researcher determined the behavior to measure based on five factors: 1) learning media components, educational board games; 2) learner performance; 3) STEAM education concepts; 4) local wisdom; and 5) classroom environment. Using instructional materials, educational board games, and number 25 items in accordance with the steps below:

1. Examine the concept of developing a satisfaction evaluation form. and developing a satisfaction survey covering the content and objectives.
2. Develop a satisfaction evaluation form that expresses emotions. Students have both positive and negative opinions of learning materials and educational board games. The researcher establishes the measurement of behavior based on 5 factors with 5 items for each category, for a total of 25 items.

3. Present the satisfaction evaluation form to the research project consultant for verification of its contents.
4. Utilize the customer satisfaction evaluation form to evaluate the Index of Concordance by having five experts evaluate the questions' validity in terms of their content and clarity.
5. Twenty questions from the revised satisfaction assessment questionnaire were administered to 60 students, per the recommendation of the expert.
6. Using Cronbach's alpha coefficient procedure, the confidence value of the entire version of the satisfaction rating was calculated; this yielded the confidence value of the entire version. and to truly use the customer satisfaction survey.

Steps: 3 The trial use of educational board game media.

This research is a quasi-experimental research in the form of One group pretest-post test design.

Steps: 4 The evaluation of learning materials for educational board games.

1. The fundamental statistics used to interpret the satisfaction survey were: 1) mean, 2) standard deviation, 3) percentage, and 4) learning media effectiveness. Using E1/E2 formulas, comprehend the educational game board.
2. To calculate the content validity index (IOC) and to calculate the confidence value of the satisfaction questionnaire, the statistics were used to determine the quality of the instruments.
3. t-tests for dependent samples and t-tests for a single sample were used to verify the hypothesis.

Discussion

The results indicated that student satisfaction with the local wisdom board game in all five categories was as follows: The first aspect of learning media components, educational board games, was at a satisfactory level; the second was learner performance; the third was STEAM education concepts; the fourth was local wisdom; and the fifth was the classroom environment.

Conclusion

The objectives of this research were: 1) to develop local wisdom board game media based on the STEAM education concept to promote innovators' competency; and 2) to study the level of satisfaction of students towards the local wisdom board game media. Based on the STEAM education concept to promote innovators' competency. The tools used in the research were: 1) learning materials for board games of local wisdom based on the concept of STEAM education to promote innovators' competency; 2) handbooks for learning materials for board games of local wisdom based on the concept of STEAM education to promote innovators' competency; and 3) a questionnaire to measure students' satisfaction towards learning media for local wisdom board games based on the STEAM education concept to promote innovators' competency. The sample consisted of fifth-grade students. One study group of 30 students was obtained by simple random sampling. The results showed that evaluation results of the quality of learning media, board games, and local wisdom based on the concept of STEAM education promote innovators' competency. The quality is very good. And the students were satisfied with the learning materials, board games, and local wisdom

based on the concept of STEAM education to promote innovators' competency. At the most satisfactory level. The results indicated that student satisfaction with the local wisdom board game in all five categories was as follows: The first aspect of learning media components, educational board games, was at a satisfactory level; the second was learner performance; the third was STEAM education concepts; the fourth was local wisdom; and the fifth was the classroom environment.

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