

Design and Development of Econoplay-Based PowerPoint Media for Teaching Market and Price Formation Concepts

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A B S T R A C T

Technological advances in education demand innovation in learning media to make it more interactive. Observations at SMA Negeri 3 Blitar show that the method of learning economics is still with conventional lectures and full text PowerPoint, so that student interest and understanding are low. This research is Econoplay, developing PowerPoint-based interactive learning media with animation, video, educational games, and QR-Code evaluation using the ADDIE model. The research method is quantitative with data collection through questionnaires. The results showed that material expert validation obtained 96.6%, media expert validation 98%, small group trial 91%, and large group trial 92%, proving the effectiveness of Econoplay in increasing students' understanding and interest in learning. Thus, Econoplay is feasible to use as economic learning media in high school



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INTRODUCTION

Technology and information continue to experience rapid progress, especially in the education sector. These advancements make a great contribution to creating relevant learning according to the needs of the times. Educators have the challenge of realizing students' activeness, interest in learning, and motivation to learn (Putri et al. 2016). Moreover, educators are also able to integrate technology effectively in learning so as to ensure that students are not only able to utilize technology but are also able to think critically. Technology provides wide access to diverse learning information and resources, allowing the learning process to become more dynamic and engaging. It can help educators understand the learning needs of each student (Fatimah and Desyandri 2023).

The development of technological innovation needs to be carried out by utilizing creative and interactive learning media. Such learning media, correspond to the economics subject of Senior Secondary School (SMA) because it can support the delivery of materials that are more concrete and easy to understand by students so that students can be more active, motivated, and understand the material in depth. According to Epros & Aini (2024), educators and students prefer powerpoint media because it can increase students' learning concentration, as well as having the ability to visualize the material well and be easy to use by educators. Powerpoint learning media can also help educators in meeting the needs of each student from audio, visual as well as audio visual and kinesthetic

needs or called differentiated learning. Therefore, powerpoint learning media provides an effective approach in helping students understand economic learning (Wahyuningsari et al. 2022).

In the previous study by Maenah et al (2024), showed that interactive powerpoint learning media contains learning objectives and learning materials received an assessment of 83.3 % from teachers and students so that the media is very worth using in the learning process. The study of Epros & Aini (2024) also showed that interactive powerpoints that include orientation, material concepts, games, and evaluation are also feasible to apply to learning with a percentage of 100 %. Moreover, in a study conducted by Telaumbanua et al. (2023) showed that an interactive powerpoint presenting learning objectives, materials, and questions received a score of 90.95 % from the teacher's assessment as well as received a score from the students of 90.45% so that it was judged feasible to apply in the classroom. As for the study conducted by Sidauruk et al. (2024) showed that the interactive powerpoint presenting the material was feasible to apply in learning activities and obtained an assessment from students of 86.88 %. The development of powerpoint learning media will be carried out with a more diverse presentation and adapting the existing material, so that the results obtained become more maximum.

Based on the results of the preliminary study obtained through the activities of Teaching Assistantship and school observation on September 2, 2024, it shows that the low academic achievement of students is caused by the limitations of learning facilities, lack of effective learning strategies, and lack of communication between teachers and students. Although SMA Negeri 3 Blitar has excellent academic achievement and literacy level, but most of the educators in SMA Negeri 3 Blitar are less innovative in utilizing available learning media such as powerpoint and textbooks. Based on the information from the 10th grade economics teacher, the delivery of economics learning materials was done by lecture method. The use of powerpoints and textbooks are the primary learning resources. Consequently, students feel bored with the appearance of less interesting learning.

According to Susanti & Hamama Pitra (2019), active learning can improve students' understanding, evident from the evaluation results after applying the learning media used. From the results of the needs analysis that includes the demands of the curriculum, the limitations of the learning media, and even the characteristics of each student then there is a need for learning media that can help students to be more active and critical in understanding economic learning especially on market materials and the formation of market prices. This, makes the background of the researcher to conduct research and development entitled "Development of PowerPointBased Econoplay Learning Media on Market Materials and the Formation of Market Prices of Grade X Students of SMA Negeri 3 Blitar". With the hope of increasing students' active engagement, improving their understanding of complex material on economics courses, as well as creating a more engaging and enjoyable learning experience.

RESEARCH METHODS

The research location was conducted in SMA Negeri 3 Blitar by involving students in class X-1 of the academic year 2024/2025 to conduct observations, needs analysis, and as subjects to fill out product feasibility questionnaires. There were 33 student respondents. The research subjects are learners, educators, and expert validators, while the object in this study is a powerpoint-based econoplay learning media on market materials and the formation of market prices. While the product validation process is carried out by two experts, namely material experts and media experts. The study was conducted on January 6 to 10, 2025.

This type of research is developmental research or Research and Development (RnD). The design of this study adopted the ADDIE development research model consisting of five stages, namely analysis (analysis), design (design), development (development), implementation (implementation), and evaluation (evaluation). This development model is used to produce products that meet the needs of students and the applicable curriculum.

The development procedure begins with the needs analysis stage, that is, the analysis of the needs of students and teachers. The second stage is the design of the material structure, the preparation of the validation instrument, as well as the design of the econoplay media product design. The third stage, namely development or development, by realizing the design of media products into a powerpoint-based learning media that corresponds to the selection of materials, students' needs, picture illustrations, and other interactive elements. At this stage, the researcher created a powerpoint design as well as integrated media with various visual and audio elements to enhance the interactivity of learning. In addition, performing product validation, the developed media is tested for validation by media experts and material experts.

The fourth stage, which is implementation by conducting a small group trial with a total of 6 people having high, medium, and low levels and also conducting a large group trial to students of class X-1 by disseminating questionnaires. Student questionnaires with indicators of various aspects include media engineering, visual communication, and material content to determine the feasibility of the developed product. The fifth stage is the evaluation stage, by looking at criticisms and suggestions from both teachers and students to be the subject of further development evaluation.

Technical data analysis to find out the feasibility of powerpoint based learning media on market material and formation of market price by using quantitative. The analysis process was conducted in stages to facilitate the researcher in assessing the data of the study results. The conducted analysis includes the validity results of media experts, subject matter experts, as well as product trial questionnaires. The response outcome data in the form of questionnaires were assessed on a likert scale. There are five expert validation sheet percentage criteria based on research (Sukardiyono, 2017). (1) Very valid, 81-100; (2) Valid, 61-80; (3) less valid, 41-60; (4) Invalid, 21-40; (5) Extremely invalid, 0-20. Next is the assessment of the feasibility level of the learning media product. There are five media eligibility level criteria. The assessment of econoplay media can be said to be feasible if it obtains a feasibility score of $\geq 61\%$. Product eligibility criteria are based on research (Sukardiyono 2017).

RESULT AND DISCUSSION

Result

The development of powerpoint-based learning media products aims to provide innovation and effectiveness in the learning process. This powerpoint learning media was developed based on the results of field observation and the potential that exists in SMA Negeri 3 Blitar. Such potential is in the form of availability of infrastructural facilities such as LCD Projectors which are supportive facilities in learning. Before presenting the data of the results of validation and usage trials, it will then be exposed regarding the initial products that have been developed.



Figure 1. Initial view of econoplay
Source : Researcher documentation (2025)

Next, is the menu view. In this menu view you can choose what features to select such as windows, materials, games, and evaluation. For more details see the following picture.



Figure 2. Menu screen view
Source : Researcher documentation (2025)

If you choose the window feature, then the display will be equipped with a question and answer story question with a total of 5 questions.



Figure 3. Window feature view

Source : Researcher documentation (2025)

If selecting a material feature, then the display will be equipped with an audio and visual explanation of the material. In addition, there are also learning videos and QR barcodes of the material in full.



Figure 4. View of material features

Source : Researcher documentation (2025)

If you choose the games feature, then the display will be equipped with question cards numbering 5 questions along with clues that can be selected and answer options.



Figure 5. Games feature view

Source : Researcher documentation (2025)

If selecting the evaluation feature, then the display will be equipped with multiple choice questions and selecting answers by performing a barcode scan.

Validation Testing

The validation test stage is conducted by two validators, namely media and material experts. Then conducted an eligibility test on students in class X-1 SMA Negeri 3 Blitar. The percentages obtained from the validity test are as follows.

Table 1. Percentage of subject matter expert validation tests

Aspect	Presentation (%)	Category
Content Feasibility	92	Very Valid
Feasibility of Presentation	98	Very Valid
Language Assessment	100	Very Valid
Overall	96.6	Very Valid

Source : Author’s Data Processing, 2025

Based on the results of the material validation test, showed a value of 145 with a maximum number of 150. Then the data was calculated to know the percentage of material validation value. After calculating based on the formula the overall percentage is 96.6% and declared very valid.

Table 2. Percentage of media expert validation tests

Aspect	Presentation (%)	Category
Media Feasibility	96	Very Valid
Visual Communication	98.6	Very Valid
Overall	98	Very Valid

Source : Author’s Data Processing, 2025

Based on the results of the media validation test, it showed a value of 98 with a maximum number of 100. Then the data was calculated to know the percentage of media validation value. After calculating based on the formula of the overall percentage of 98% and declared very valid.

Table 3. Percentage of small group trials

Aspect	Presentation (%)	Category
Media Feasibility	90	Very Valid
Visual Communication	90	Very Valid
Material Content	92	Very Valid
Overall	91	Very Valid

Source : Author’s Data Processing, 2025

Based on the results of a small group test with a number of 6 people, showing a value of 91 with a maximum number of 100. Then the data was calculated to know the percentage of validity value. After calculating based on the formula the overall percentage of 91% and declared very valid so that it can be tested the product to a large group.

Table 5. Percentage of large group trials

Aspect	Presentation (%)	Category
Media Feasibility	90	Very Valid
Visual Communication	91	Very Valid
Material Content	92	Very Valid
Overall	92	Very Valid

Source : Author’s Data Processing, 2025

Based on the results of a small group test with a number of 6 people, showing a value of 92 with a maximum number of 100. Then the data was calculated to know the percentage of validity value. After calculating based on the formula the overall percentage is 92% and declared very valid so that the learning media econoplay is worth applying in the process of learning activities.

Discussion

Analysis

At the first stage in the ADDIE model is analysis. This stage of analysis aims to identify existing problems as well as specific needs covering product development. The needs analysis stage is conducted to identify the needs of teachers and students in economics learning in order for the learning objectives to be achieved. It is supported by the opinion of Anitasari et al. (2023) that needs analysis is an important step in formulating appropriate learning strategies. In this study, needs analysis was conducted through school observation, interviews with economics teachers, as well as identification of problems in schools. The results of the needs analysis showed that the low academic achievement of students was caused by several factors, including limitations of learning facilities, lack of effective learning strategies, as well as minimal communication between teachers and students.

Learning facilities are a major factor affecting the learning process. In this study, it was found that there are still limitations of learning facilities, especially the minimal access of students to computers in computer laboratories, so that learning can only be done in the classroom. Nevertheless, there are adequate supporting facilities for classroom learning, such as LCDs, projectors, and smartphones owned by each student. This is in line with the study of Kurniawan et al. (2023) stated that every school ought to have supporting devices, such as laptops or computers to support the use of technology-based learning media.

Not only the need for learning facilities, but also effective learning strategies become factors that influence the learning process. The minimal variation of methods used by teachers, who still relied on the lecture method without actively involving students, became one of the constraints in learning. Approaches such as group discussions, educational games, or the use of interactive media are often overlooked, leaving students feeling bored and less motivated to learn. It is in line with the study of Sidauruk et al. (2024) explained that the learning methods used by teachers are still dominated by one-way lectures, so students are less active in the learning process. Moreover, in the study of Dewi et al. (2024) stated that the learning methods used tend to be monotonous, i.e. only focused on reading textbooks.. Meanwhile, the study of A. M. Putri & Iskandar (2023) emphasizes that engaging learning strategies need to consider the differences in students' learning styles, such as visual, auditory, and kinesthetic learning styles.

In addition to the need for learning facilities and effective learning strategies, communication between teachers and students is also an important aspect that must be met. Lack of communication causes instruction or explanation of material to be one-way, without engaging students in in-depth discussion or providing opportunities for them to express opinions, ask questions, nor clarify understanding. This is in line with the study of Telaumbanua et al. (2023) stated that the classroom learning process is less interactive and less motivating for students in developing mathematical problem-solving skills. In addition, the study of Maenah et al. (2024) also explained that the lack of direct feedback from students during the learning process can hinder their understanding of the given material.

The second stage of analysis was to determine the material and information was obtained that the material on the market and the formation of market prices was considered difficult by some of the students of class X. This difficulty was caused by economic concepts which were abstract in nature, such as the theory of demand, supply and equilibrium price. In addition, the understanding regarding market mechanisms under various conditions, such as perfect competition markets, monopoly, and oligopoly found in the market structure subchapter, is also a challenge for students. Students often have difficulty relating economic theory to real conditions in the marketplace. Therefore, there is a need for a learning medium that is not only theoretical in nature, but also presents examples from real situations. This is in line with the study of Suyadi (2018) stating that learning regarding the market and the formation of market prices especially the concepts of demand, supply, and equilibrium price are often considered difficult to understand however, students' understanding can be improved through group discussions and active learning.

After determining the material to be used, an analysis is carried out to ensure its suitability to the learning

objectives that have been set. In this study, it was found that the school implemented the Independent Curriculum, specifically the learning achievements in phase E, which aims for students to understand the basic concepts of economics, including demand, supply, and the formation of market prices. Based on such analysis, the researcher ensured that the selected materials could support the achievement of the learning objectives. In addition, material analysis also aims to adapt the learning flow and indicators to the needs of students, so that the learning process becomes more effective. Thus, material analysis is an important step in formulating appropriate learning strategies as well as developing learning media that correspond to student characteristics and learning objectives.

Design

The second stage of planning (design) includes the collection of materials, the collection of learning images and video objects, the presentation of material design, as well as the preparation of research instruments. The stage of collection of relevant material, namely material about the market and the formation of market prices, which includes the subchapters of demand, supply, price equilibrium, and market structure. In addition, evaluation questions were collected in accordance with the material. This material will be used to build student motivation through powerpoint-based econoplay learning media. The process of material collection includes literature research, the study of applicable criteria, as well as economic references that explain the concept of markets, the mechanisms of supply and demand, as well as the process of formation of market prices. In line with the study of Rahmadi et al. (2020) stated that the use of powerpoint-based learning media proved to improve students' understanding of the concept of market prices in class X social studies.

The collection of visual objects, such as images and videos, aims to support the presentation of the material in an engaging way as well as facilitate student comprehension. The use of relevant images and videos helps students understand market concepts and market prices through interactive visualizations. The collection of images includes market illustrations, demand and supply curves, equilibrium prices, buying and selling transactions, pricing tables, as well as other relevant diagrams. Meanwhile, the collection of learning videos includes videos that are appropriate to the material, have good visual quality, are interesting, and are easy to understand for students. This is in line with the study of Rahmadi et al. (2020) developed a powerpoint-based learning media with the integration of images, animations, sounds, and accompanying music to improve students' learning outcomes on human digestive system material. In addition, it is also in line with Wardani (2024) study emphasizing the importance of collecting image objects in the creation of learning media to explain ecosystem concepts visually, help students understand the material better, and foster environmental literacy.

The design of powerpoint-based econoplay learning media includes the arrangement of slide layouts, the arrangement of visual elements (images, text, animations, and graphics), as well as the method of delivery of material through such media. The product includes econoplay cover design, researcher profile, app introduction, instructions for use, learning objectives, menu screen display, window feature, story question window feature, question and answer, preview of material, material, learning video, barcode for complete material, game feature, question cards, game instructions with rummy card design, game answer options, evaluation questions, evaluation questions, and evaluation features. This is in line with Epros & Aini (2024) study presenting orientation, material concept, material application, and material evaluation with a themed design of the collaborative nature of the environment. As for the study of Biologi et al. (2023) presented an interactive animation design regarding the blood circulation process in the human body clearly and visually. In addition to the three studies, there is a study by Telaumbanua et al. (2023) presented learning objectives, exposure to mathematical material, and evaluation questions with a real-life relevant design to improve students' mathematical problem-solving skills through a Problem Based Learning approach.

After media design then preparation of research instruments was done to conduct material validation, media validation, and learners' questionnaire. The validation of the material will be done by two people, namely the subject matter expert lecturer and the economics teacher in the school. In the preparation of the research instrument, various aspects were taken into account at each stage of validation. It is in line with the study of Sufa and Widyahening (2023) stating that validation of the instrument by experts is necessary to ensure the feasibility aspect, as well as the suitability to the users' needs before being applied in further testing stages.

Development

Product development focuses on more innovative solutions to address the problems of school needs analysis.

Product development results by collecting materials that will be used in the creation of econoplay such as materials, questions, canva design, backsound music, color pallet, and learning videos from the material

“market and the formation of market prices”. The look of the econoplay cover is made simple yet interactive and interesting. This view is equipped with “next” and “researcher profile” navigations. In addition, it is also equipped with the product name as well as the UM logo. An introductory view appears before entering the window, material, games, and evaluation menus. This introductory view includes the researcher’s profile, an introduction to the app, instructions for using econoplay, as well as the learning objectives. This window feature will display story questions and questions and answers. This story has 3 questions as a learning starter. The defense trigger was conducted before starting the lesson to find out how much students understood the learning material. This is in line with the study of Wardani (2024) who stated that learning triggers can increase students’ reading interest and provide students with motivation to follow learning.

On the material feature view this contains material demand, supply, equilibrium price, and market structure. In the material features there are explanations in the form of audio, so students can read and listen to the explanations. Audio and visual explanations can improve students’ understanding regarding market material and the formation of market prices. This is in line with the study of Hidayatulloh et al. (2020) explained the impact of audio visual-based powerpoint can improve students’ learning motivation. In addition to the explanation of the material, in this material feature also contains learning videos and full material so that students can learn independently without the presence of a teacher as a facilitator. In the game feature display in the form of question cards amounting to 5 questions and clues that can be selected and there are answer options. Gaming features in learning media are elements designed to increase student engagement and motivation in learning. Games serve as interactive aids that combine learning with entertainment, so students can grasp concepts in a fun way.

This is in line with the study of Hidayatulloh et al. (2020) showed that game-based learning media can improve student learning outcomes. Moreover, it is also in line with the study of Evandri (2024) stating that interactive game development can increase students’ learning motivation. Evaluation features in learning media are designed to measure the level of student understanding of the material that has been presented. This evaluation feature consists of 20 multiple-choice questions and students work by scanning a QR-Code barcode. Evaluation not only helps students to reflect on what they have learned but also provides direct feedback to improve the learning process. This is in line with the study of Yulianto et al. (2025) explained that the application of interactive evaluation features can improve student learning outcomes, measure the understanding of material concepts, and motivate student learning.

The results of media validation were found to be highly valid, so that this learning media is suitable for conducting both small-group and large-group trials. In line with the study of Kurnia et al. (2022) stated that powerpoint-based interactive learning media was found to be valid and worth using as an aid in the learning process. In addition, in the study of Gulo & Harefa (2022) it was also stated that powerpoint-based learning is valid and feasible to use. In addition, the material validation results were also found to be highly valid. This is in line with Azmi (2024) study showing that this medium is worth using, although there are criticisms and suggestions from subject matter experts related to the content of the material. As for the criticism and suggestions from the validation of subject matter experts that basic competencies should be learning achievements. This is because learning achievement reflects more on the ultimate goals to be achieved after the learning process, while basic competencies are more focused on the abilities that students should master on each learning topic or subject. In addition, there are also criticisms and suggestions that the learning done is in accordance with the learning objectives that have been set in the curriculum. However, to improve the effectiveness and quality of learning, it is important to intensify the application of collaborative learning methods. This is in line with Situmorang (2024) study stating that collaborative learning, which involves active interaction between students, can promote deeper understanding as well as improve social skills and teamwork among students. Therefore, a more vigorous application of collaborative learning to support the achievement of learning objectives and improve student learning outcomes.

Implementation

In the initial stage of learning media implementation, a small group experiment was conducted to test the effectiveness and feasibility of the developed media. This testing aims to get feedback from students directly, as

well as to see to what extent the learning media can support the learning process. Through pilot testing with a limited sample, researchers can evaluate the suitability of materials, design, and interactivity within such media, before proceeding to further testing on larger groups. This process is important to ensure that the learning media used are effective and meet the needs of the students. In this study, a small group pilot of 6 people SMA Negeri 3 Blitar with high, medium, and low levels was conducted. The type of data used in econoplay media development research is quantitative data. In this study, the small-group trial obtained highly valid results, and this learning medium is feasible to use for large-group trials with some revisions. As for the criticisms and suggestions from the small group testing that the background in the material section was slightly reduced or simply removed whereas the explanation of the material was exaggerated. By making these adjustments, it is expected that students can focus more on the explanation of the material without being distracted by unnecessary background noise, and students' understanding of the concepts taught becomes more maximized. This is in line with Afidah (2020) study stating that learning media need to be well designed, both in terms of visuals and audio, which should be tailored to the needs of students.

After conducting a small group trial, a large group trial was conducted in class X-1 of SMA Negeri 3 Blitar consisting of 33 students. This trial resulted in a highly valid assessment and the learning media was declared usable without the need for revision. This is evidenced by the application of powerpoint-based econoplay which successfully attracted students' interest and created an enjoyable learning atmosphere, as well as being easy to use by both students and teachers. The statement is in line with Ramadhani & Aristiawan (2023) study showing an improvement in student learning outcomes after conducting a large group trial on an interactive powerpoint learning medium. As for the study of A. M. Putri & Iskandar (2023)) showed the evaluation results experienced a significant improvement in student learning outcomes and powerpoint media was found to be effective as well as interesting for students.

Evaluation

The results of the evaluation after the large-group trial showed that the powerpoint-based econoplay learning media was well received by both students and teachers. The majority of the students found interest in the material presented through this medium, and they found it easier to understand the concept of markets and market prices. Teachers also appreciated the ease of use of this medium in delivering the material more interactively. However, although the response to this medium was overwhelmingly positive, there were some criticisms and suggestions from students and teachers for further refinement. Some students expressed that the visual display on some of the slides needed to be improved, especially for materials that had a lot of text, to be more engaging and not boring. This is in line with the study of Marlina et al. (2020) explained that the use of powerpoint media in learning can improve student learning outcomes however, some students expressed that materials that contain a lot of text on multiple slides need to improve their visual display, so as not to be monotonous and more interesting.

In addition, another criticism came from teachers who proposed the addition of more interactive elements, such as more varied quizzes or games to strengthen students' understanding and increase their participation during learning. In line with the study Faturrokhman (2024) stated that the addition of elements such as multiple-choice-based quizzes, educational games, or simulations in learning media can provide opportunities for students to test their understanding of the material first-hand.

Teachers also provide feedback so that the duration of presentations using this medium can be adjusted with more efficient time allocation so that students do not feel rushed or lose focus. Some students also desired features that allowed them to discuss or collaborate more with classmates through this medium. This is in line with the study of Wideasanti et al. (2023) stated that through collaboration, teachers can support each other and provide innovative ideas in integrating multimedia technology and internet media into the learning process. Students can also participate actively in providing their feedback and perspectives related to the use of technology in learning.

CONCLUSION

This study developed a PowerPoint-based interactive learning media Econoplay on the material "Markets and the Formation of Market Prices" for grade X students at SMA Negeri 3 Blitar. This learning medium is designed to overcome the problems in economic learning that tend to be monotonous and boring. Through the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model approach, the econoplay was

developed by presenting various interactive features such as learning videos, educational games, and QR Code-based evaluations. The validation results showed an average score of 98% from media experts and 96.6% from subject matter experts, both of which fall into the category of highly valid. The results of the pilot test on the small group of 91% and the large group of 92% also show that this medium is very feasible to use to increase students' interest and understanding of economics material.

The econoplay learning media proved to be effective in providing learning experiences that are interactive, innovative, and relevant to the needs of students as well as the learning curriculum. The use of visual, audio, and interactivity elements in this medium is able to make monotonous economic concepts easier to understand. In addition, this medium also provides convenience for teachers to deliver the material in a varied and interesting way. However, this study still has limitations, such as the reliance on internet access and the focus on only one material. Therefore, further research is recommended to develop similar media on various other materials as well as integrate more advanced technologies to support the flexibility and sustainability of these media in learning.

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