

# Development of Teaching Materials Based on Podtoon Animation Film on Introduction To Macroeconomics Course in The Economics Study Program Universitas Negeri Medan

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**Abstract.** The creation of instructional resources into film form and hinge on podtoon is a newness. This action is a creative concept to deal with relatively easy learning during the COVID-19 pandemic. Animation is used as a learning medium based on two objectives. The first objective is to attract the attention of students. Animation makes students increase the seriousness of learning compared to learning when compared to static animation. This animated media is also effective in helping students construct cognitive facts that are factual and conceptual. This study aims to determine the level of feasibility and effectiveness of Poodton animated film-based teaching materials in introduction to macroeconomics courses that can improve student learning outcomes. This study uses research and development (R&D) methods using the ADDIE model. This research was conducted on third-semester students taking an introduction to macroeconomics course in the economics study program in the 2023/2024 academic year. For the small trial sample, 10 students were taken by random sampling. To determine feasibility, teaching materials based on Poodton animated films will be tested for feasibility by expert validators (material experts, media experts, and lecturers in charge of the subject), as well as to test the practicality and effectiveness of teaching materials based on Poodton animated films produced will be tested on students. The data analysis technique used is quantitative data analysis techniques. The results of the research and development carried out are in the form of teaching materials based on Poodton animated films which can be accessed from smartphones via the YouTube and Google Drive applications which can also be accessed offline by downloading. The teaching materials developed received good ratings from experts with an average feasibility score of 4.0 which is in the appropriate category. In the practical test, students also gave a positive response with an average overall score of 5.66 entering the practical category as well as the effectiveness test using the t-test table for a significance level ( $\alpha$ ) = 5% = 0.05 and  $df = 9$ , then  $t$  was obtained at  $t_{count} = 12,48$  and  $t_{tab} = 1,833$  with the conclusion that  $t_{count} > t_{tab}$  so that it can be said that there is effectiveness (significance). The development of teaching materials for introduction to macroeconomics courses based on Poodton animated films with a significance level of 5% is very effective.

**Keywords:** macroeconomics, animated films, teaching materials

## 1 Introduction

With the advancement of computerized period training, students can gain abundant knowledge quickly and easily. Educators and students can more easily find references, encourage creativity and independence, as well as media for storing information. Educators and students can more easily find references, encourage mastery of foreign languages, encourage creativity and independence, as well as media for storing information. Computerized innovation can likewise be valuable in changing human way of behaving, including training and understudies, in looking, gathering, archiving, handling, and yet again moving showing materials as per needs. Blending showing materials in the growing experience with computerized innovation can be really fascinating and give learning inspiration since blending showing materials isn't dull. Training in the time of globalization implies the coordination of public schooling into world training. Understudies should be outfitted with sufficient skills so understudies can foster in the exceptionally cutthroat advanced time. There are a few issues and difficulties confronting the universe of training in the computerized time, including the nature of schooling, impressive skill of training staff, culture (assimilation), learning procedures, challenges for further developing administration, as well as difficulties for propels in science and innovation. Innovation in the realm of training is a framework that is utilized to help realizing so that ideal outcomes are accomplished.

In view of this, one of the leap forwards is to make fascinating instructing materials that are not just restricted to normal perusing and the improvement of these showing materials will likewise be computerized based; that is, showing materials can be gotten to through understudies' cell phones. The improvement of early on material for macroeconomics is as a vivified film which will be created with a storyline in the material in light of a podtoon application and can be gotten to without utilizing an application. This is viewed as significant as a half breed learning arrangement as of now since it is viewed as more effectively open on understudies' cell phones both during ordinary class gatherings and online gatherings.

Study on the blooming of animated film-based teaching materials already been studied previously. According to Hadi Sutopo (2008)[1], Safira Humairoh and Maryam Isnaini Damayanti (2012)[2], Nabiela Dini Agatha (2013) [3], the general consequences of this research verify that the progress of animated film-based teaching materials is effective for student learning outcomes. Apart from that, students' excitement for learning is increased because they can access current and useful information through their cell phones which are available on the YouTube channel and Google Drive.

The development of this teaching material is a newness. This action is a creative concept to open up the boundaries of study space and time for students. Podtoon-based learning animation videos are animation activity recordings that can be loaded up with learning material and can be used as learning media because of their interesting nature. The development seeks to determine and analyze the impact of podtoon animated film-based learning media teaching materials in introduction to macroeconomics courses to enhance the learning result of students, test and determine the level of suitability of podtoon animated film-based learning media teaching materials in introduction to macroeconomics courses able to enhance the learning outcomes of students.

## **2 Theoretical Studies**

### **2.1 Teaching Materials**

Showing materials are types of materials used to help educators/educators in doing instructing and learning exercises in the study hall. The material being referred to can be composed or unwritten material [4]. Materials are a set of subject matter that refers to the curriculum used as a framework for achieving unspecified standards of competence and basic competencies [5]. Teaching aids are all materials (information, tools, and texts) that are arranged systematically, presenting a complete picture of the skills that students will master and use in the learning process for planning and learning to carry out academic work. For example: manuals, modules, documents, worksheets, models or simulations, audio teaching materials, interactive teaching materials, etc [6].

According to Majid (2006) [7], learning resources are described as curriculum-based knowledge that is provided and maintained in a variety of mediums to support students' learning. The formats are endless whether it is print, video, software, or on the other hand a blend of different configurations that can be utilized by understudies or instructors. Learning materials are a bunch of materials containing learning material or content intended to accomplish learning targets. Meanwhile, according to other experts' opinions, teaching materials are information, tools, and texts that teachers or instructors need for planning and reviewing learning implementation. These views are also complemented by Pannen (Prastowo, 2014) [6] who expresses that showing materials will be materials or subjects that are organized deliberately, and utilized by educators and understudies in the educational experience. According to Hamdani (2011) [8], his book it is expressed that showing materials capability as Direction for educators who will coordinate every one of their exercises in the growing experience, as well as the ability content that should be educated to understudies. Direction for understudies, which will coordinate every one of their exercises in the educational experience, as well as content skills that need to be learned or mastered. Tools for measuring achievement or linking learning outcomes.

### **2.2 Learning Media**

Gagne (1970) [9] said that showing materials are all teaching materials that help students. Likewise, Briggs (1977) [10] explains that media is a tool used to communicate subjects to students. Furthermore, Gerlach & Ely (1971) [11] said compounded series of learning media, including people, documents, or research allows students to understand so they can acquire information, abilities, and perspectives. Strengthened by Asyhar (2012) [12] who said that learning materials are viewpoints required for the instructing and educational experience, both programming and equipment.

Multimedia learning involves the senses of sight and hearing through the media of text, still images, moving images, and sound, as well as interactive computer media and information, news, and communication technology. With regards to interchanges, computerized implies utilizing a framework that can be utilized by PCs and other electronic hardware. Computerized media will be media whose items are a blend of information, text, sound, and pictures put away in advanced structure and disseminated through networks based on fiber optic systems to broadband, satellite, and microwave [13].

Advanced media is additionally characterized as electronic media used to store, send, and get computerized data. Radio and TV are the original of advanced media. Advanced media is inseparable from the Web on the grounds that computerized media is frequently shared, broadcast, or distributed through the Web. Nonetheless, advanced media can likewise be seen without the web after the media document is downloaded or saved money on a PC or cell phone.

### **2.3 Development of Teaching Materials for Animated Films Introduction to Macroeconomics**

Animation media is communication in the form of moving images accompanied by sound and is a step in the development of science and technology. According to Furoidah (2009) [14], animated learning media is media that contains a collection of images that are processed into motion and equipped with sound so that it is easy to remember and capture the learning message. Animated learning materials can be used as ready-to-use teaching tools whenever they are used to communicate a topic.

The concept of developing Podtoon cartoon-based educational materials has influenced the transition of learning to digital form, both in terms of content and system. Podtoon animated film-based educational material is a development that makes a major commitment to changing the growing experience, the growing experience is at this point not simply paying attention to the teacher explain the material, but students also practice doing other activities such as observation, realization, and demonstration. Surjono (2013) [15] believes that computerized learning materials, which are right now extremely famous in light of their adaptability and productivity, are a method for giving learning materials by means of the Web that can be gotten to whenever and anyplace. With advanced learning materials and complete assets, learning materials can be gotten to whenever, anyplace.

## **3 Research Methods**

### **3.1 Research Approach**

The design of this research is research and development (R&D). As stated by Sugiyono (2016) [16], Research and development is an examination strategy used to deliver specific items and test the viability of these items. In this research, the product produced is the advancement of showing materials in light of podtoon animated films in the introduction to macroeconomics courses.

### **3.2 Time and Place of Research**

This research was carried out for 6 months at the economics study program, Medan State University in the 2022/2023 academic year.

### **3.3 Research Subjects**

The research subjects as data sources in this research are economics lecturers and students in the third semester of the Introduction to Macroeconomics course for the 2023/2024 academic year.

### **3.4 Data Collection Techniques**

Information assortment strategies use polls. Polls are utilized to survey media quality in light of material specialists, media specialists, and understudies.

### **3.5 Research Instruments**

There are a few instruments required in this examination, beginning from the media improvement cycle to the learning media investigation process. The instruments that will be utilized in the exploration incorporate: Clip Studio Paint (CSP), and Expert Validation Questionnaire.

### **3.6 Data Analysis**

The development of podtoon animated film-based teaching materials in the Introduction to Macroeconomics course has good quality if it meets the aspects of validity, practicality, and effectiveness.

## **4. Results and Discussion**

### **4.1 Analysis**

#### **a. User Analysis**

User analysis is adjusted to students' ability to master the media because the users of this animated video learning media are students who like animation, with interesting shapes and interesting stories. Development researchers study cartoons. According to its characteristics, students' thinking stage is at the imaginative and creative thinking stage.

#### **b. Curriculum analysis**

Analyze the curriculum to determine which materials require teaching materials. Several courses have difficulty conveying material in class. One of the courses is an introduction to macroeconomics. The introduction to macroeconomics is difficult due to a lack of examples and teaching materials, so understudies find it hard to understand content of the substance being taught.

#### **c. Means Analysis**

Finally, analyze the needs for existing facilities and infrastructure in the field. Researchers found that it has quite complete facilities in the form of LCD screens, computers, laptops, and smartphones to support learning through animated learning video media.

### **4.2 Design**

#### **a. Learning Animation Video Media Design**

The second stage is the design stage or designing a predetermined product. This product design was carried out in two stages. First, choose and determine the software that will be used. The software that will be used to create this learning animation video includes Podtoon,

Pinnacle Studio, Format Factory, and Audacity. Second, design and develop a script in the form of a flow chart and storyboard and create a GBIM (Media Content Outline).

Character Scripts



Script Material Manuscript 1: BASIC CONCEPTS OF ECONOMIC SCIENCE

### 1. Core Material

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Nomi : So some of the terms you mentioned earlier are part of the scope of economics, especially macroeconomics

Eko : What? Macroeconomics? Does that mean it's a big economy?

Nomi : Macroeconomics also known as introduction to macroeconomics is a branch of economics that studies economic events in aggregate.

Eko : Bah, from ice cream to macro, back to aggregate, what is this aggregate?

Nomi : The aggregate concept in observing economic events can be interpreted as the total activities of economic actors, such as producer activities, government activities, and foreign economic activities.

Eko : eh, my ice is already finished...  
That's macro, the opposite is micro, I think it's micro, what's the difference between macro and micro economics?

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### 4.3 Development

The improvement completed by specialists is making computerized comic-based learning media items. Execution of the item brings about the type of learning media that can be gotten to utilizing cell phones and workstations. At the development stage, researchers realize the designs that have been created. To create digital comics, several stages through Pre-production, Production, and Post-production

Product Description:

Digital technology-based learning makes it easier for students to find access to scientific information. Hence, this is the foundation for the presence of Poodton animated video-based learning media.

Poodton animated videos are the latest innovation for the world of education, especially for lecturers who teach introduction to macroeconomic theory courses. Since it depends on Poodton animated videos, aside from making it more straightforward for speakers in the web based growing experience, it additionally makes it simpler for understudies to get to gaining content from anyplace and whenever.

Product print screen:

There is material consisting of 8 chapters in 8 episodes, directly accessible without using a registration account on YouTube or Google Drive, readers/students are free to access each chapter (material) by uploading from YouTube with the link <https://www.youtube.com/@putrisarimjsilaban8022/about> and Google Drive: [https://drive.google.com/drive/folders/1sGz1vO2GANlq - ZxFKdZHpWhVvWC?usp=share link](https://drive.google.com/drive/folders/1sGz1vO2GANlq-ZxFKdZHpWhVvWC?usp=share_link)

Material 1 basic concepts of macroeconomics



Fig. 1. Animation display

#### 4.4 Implementation

Poodton animation-based material expert validation was carried out by Dr. Dede Ruslan M.Si. Validation is carried out so that Poodton animation-based teaching materials can be used or are valid. Apart from that, validation aims to obtain information, criticism, and suggestions for the teaching materials being developed.

a. Validation 1 In stage 1 validation, the media is assessed by material experts and media experts to determine the suitability of the material created and the suitability of the media developed. Input and suggestions from material experts and media experts are used as the basis for media improvements.

Table 1. Material Expert Test Results

No	Assessment Aspects	Assessment Score
1	Material	3.87
2	Language	4.10
	Average Score	3.98

In the material aspect, the average score is 3.87, which in the conversion table is categorized as adequate. Meanwhile, in the linguistic aspect, the average score is 4.10, which is included in the adequate category. The average score overall across all categories is 3.98 and is categorized as adequate. Hinge on the outcomes of the material expert test, no revisions need to be made so that validation of the appropriate category can be carried out and continued to the media validation stage.

b. Media expert assessment

**Table 2.** Media expert assessment

No	Assessment Aspects	Assessment Score
1	Visual	3.89
2	Integration	3.91
	Average Score	3.9

In the table of assessment results, media experts get an average score of 3.9, whereas in the conversion table, it is categorized as very feasible. Next, the research continued with assessments by course lecturers in validation 2.

c. Validation 2

Phase 2 validation was carried out by Dr. Khairani Matondang, M.Pd., as an introductory practitioner of macroeconomics at the Unimed Faculty of Economics. Assessments carried out by lecturers include assessments of learning materials and media. Coming up next the are the outcomes of the lecturer's assessment of the Introduction to Macroeconomics course regarding the development of Poodton animation-based teaching materials:

**Table 3.** Results of Course Lecturer Assessment of Learning Materials

No	Assessment Aspects	Assessment Score
1	Material	4.20
2	Language	4.16
	Average Score	4.22

The table shows that the average score from the learning material assessment is 4.18. Based on the value conversion table, the learning material is included appropriate category.

**Table 4.** Results of Course Lecturer Assessment of Learning Media

No	Assessment Aspects	Assessment Score
1	Visual	4.20
2	Integration	4.18
	Average Score	4.19

The table shows the average score from the learning media assessment of 4.19, whereas in the conversion table, the score is included in the feasible category. Apart from that, course lecturers also want physical forms of media as an alternative learning method when there is no internet connection.

The following is a summary of all aspects assessed in validation 1 and 2:



**Table 5.** Summary of Expert and Lecturer Tests on Digital Comic Learning Media

No	Aspect	Expert Material	Expert Media	Lecturer	Average	Category
1	Material	3.87	-	4.20	4.03	Worthy
2	Language	4.10	-	4.16	4.13	Worthy
3	Visual	-	3.89	4.20	4.04	Worthy
4	Integration	-	3.91	4.18	4.05	Worthy
Overall average					4.0	Worthy

Hinge on the average validation test of 2 experts and 1 lecturer, an average validation of 4.0 was obtained in the conversion table which was categorized as feasible. It tends to be close that the development of animated film-based teaching materials is worthy of trial.

#### 4.5 Evaluation

At this step, an assessment is completed on the reasonableness and adequacy of the showing materials and learning media that have been created, by examining ease of use information, viability information, and eventual outcomes.

##### 1. Effectiveness

To test the effectiveness of this teaching material, a trial will be done in little, restricted gatherings with a before-after (one-to-one) experimental design using a paired sample t-test. The effectiveness trial of podtoon animated film-based teaching materials was carried out on a little example of 10 understudies who had finished an introduction to macroeconomics course. This before-after-experimental design tested the effectiveness of teaching materials based on podtoon animated films on learning outcomes before and after treatment utilizing showing materials in view of podtoon animated films so that the research hypothesis was tested using the t-test (Sugiyono, 2019).

By using the t-test table for the significance level  $\alpha = 5\% = 0.05$  and  $df = 9$ , the t in the table is obtained, namely  $t_{tab} = 1.833$ .

Comparing tcount with ttab:

$$t_{count} > t_{tab} \rightarrow 12.48 > 1.833$$

Conclusion: The value  $t_{count} > t_{tab}$ , so it can be said that there is a real influence (significance) on the development of macroeconomic theory teaching materials based on Poodton animation with a significance level of 5%.

##### 2. Practicality Test

The reasonableness test for the advancement of Poodton activity based showing materials was completed to figure out the degree of comfort, ease of use, and time adequacy for understudies. The practicality test results for this product were obtained by conducting

usability tests on ten participants who were studying economics at the Faculty of Economics, Universitas Negeri Medan, in the field. This number is based on the minimum criteria for usability testing of the questionnaire method with users. The following are the results of the usability test on digital comic learning media:

**Table 6.** Usability Test Results

No	Assessment Aspects	Average Score	Decision
1	Media uses	5.67	Worthy
2	Media quality	5.65	Worthy
	Overall average	5.66	Worthy

The usability test results table shows an overall average of 5.66. Based on the value conversion table for teaching materials based on Poodton animated films, they are included in the feasible category.

## 5. Conclusion

The outcome of this research and development is a set of teaching resources for macroeconomic theory that are based on the Poodton animated film. Expert validity test results indicate that creating instructional materials is doable. Similarly, the outcomes of the practicality test, which was administered by the instructor, were useful.

The effectiveness test assessment's findings indicated that the respondent data's outcomes were satisfactory. This demonstrates that the instructional materials created based on the animated films that were produced were successful in raising student learning outcomes. They were also practical, effective, and feasible.

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