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DEVELOPMENT OF WEBSITE-BASED INSTRUCTIONAL MEDIA TO IMPROVE VOCATIONAL HIGH SCHOOL STUDENTS LEARNING OUTCOMES IN BASIC ECONOMICS

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ABSTRACT

This study was motivated by the low academic achievement of 10th-grade students at SMKN 48 Jakarta in the subject of Basic Economics, with an average score of 75.71 below the minimum passing score of 82.00 as well as the limitations of conventional and less interactive learning media. The application of the ADDIE model in the Research and Development (R&D) methodology served as the basis for this study to develop web-based learning materials using the Wix platform, while also assessing their feasibility, practicality, and effectiveness. The results showed that the media achieved an average feasibility percentage of 92.89% (highly feasible), a practicality percentage of 90.48% in the one-to-one test and 93.71% in the small-group test (highly practical), and an N -Gain value of 0.54 (moderate), with an increase in the average score from 70 to 86.46. Thus, the Wix-based website learning media is deemed feasible, practical, and effective for supporting the learning of Basic Economics at vocational high schools.

Keywords: *Instructional Media, Website, Learning Outcomes, Basic Economics*

ABSTRAK

Penelitian ini dilatarbelakangi oleh rendahnya hasil belajar siswa kelas X SMKN 48 Jakarta pada materi Dasar Ilmu Ekonomi, dengan rata-rata nilai 75,71, di bawah KKM 82,00, serta keterbatasan media pembelajaran yang konvensional dan kurang interaktif. Penelitian bertujuan mengembangkan, menguji kelayakan, praktikalitas, dan efektivitas media pembelajaran berbasis *website* menggunakan *platform* Wix. Metode yang digunakan adalah *Research and Development* (R&D) dengan model ADDIE. Hasil penelitian menunjukkan bahwa media memperoleh rata-rata persentase kelayakan sebesar 92,89% (sangat layak), persentase praktikalitas sebesar 90,48% pada uji *one to one* dan 93,71% pada uji *small group* (sangat praktis), serta nilai N-Gain sebesar 0,54 (sedang) dengan peningkatan nilai rata-rata dari 70 menjadi 86,46. Dengan demikian, media pembelajaran berbasis *website* Wix dinyatakan layak, praktis, dan efektif untuk mendukung pembelajaran materi Dasar Ilmu Ekonomi di SMK.

Kata Kunci: Media Pembelajaran, *Website* WIX, Hasil Belajar, Dasar Ilmu Ekonomi

A. Introduction

Technology and science are advancing at a rapid pace, demanding digital transformation to drive progress through technology. The rapid pace of technological development today will continue to create new approaches to the learning process and encourage rapid adaptation (Salsabila & Aslam, 2022). In improving the quality of human resources in Indonesia, education serves as a vital foundation, particularly at Vocational High Schools, which play a crucial role in preparing the younger generation to enter the workforce. To remain competitive in the era of globalization, education must function as a tool and medium that helps individuals develop and enhance their knowledge and skills (Suryandaru & Setyaningtyas, 2021).

Over time, educators need to adapt their teaching methods to keep pace with ongoing technological advancements (Saputra et al., 2023)). One important aspect of education that must keep pace with technological advancements in the learning process is the use of instructional media. Instructional media can be defined as tools used by teachers to deliver content in order to make the learning process more effective (Andrasari et al., 2022). To improve the quality of learning and achieve effective and efficient learning objectives, instructional media are needed to support the learning process by presenting material in an engaging way, thereby creating an interactive learning environment that is easy for students to understand (Audia et al., 2021).

Essentially, there are various types of learning media in this digital age. The use of digital learning media provides opportunities for personalized learning approaches and contributes to improving the overall effectiveness of the learning process (Abdul Sakti, 2023). One type of digital learning media that can be used is website-based learning media. Website-based learning media are learning tools that utilize the internet and are specifically designed to support and facilitate learning activities, thereby fostering educational communication between teachers and students (Suryanti, 2023). Learning experiences that utilize websites also provide students with new experiences, making the teaching and learning process more

varied, interactive, and creative (Rahman et al., 2021).

There are many types of website-based learning media that can be used as learning tools, one of which is the Wix platform. Wix was chosen as a website-building platform because it offers easy access to creating websites without requiring any programming knowledge (Diraya & Umamah, 2022). In addition, hosting and a domain are provided at no cost. Wix also offers a dashboard interface that is easy for users to understand, whether for creating posts or optimizing websites (Nur et al., 2021).

This need has become urgent in the teaching of Basic Economics at vocational high schools. Preliminary research findings among students at SMKN 48 Jakarta indicate that 61.5% of students (8 out of 13) consider this material the most difficult to understand, a finding supported by a remedial rate of 47.2% (17 out of 36 students) with an average learning outcome of 75.71, which remains below the Minimum Passing Score of 82.00. Furthermore, 69.2% of students assessed the instructional media used as ineffective and non-interactive. This issue was exacerbated by a curriculum shift that moved the “Fundamentals of Economics” material from 11th grade to 10th grade midway through the school year, leaving students without textbooks and forcing instruction to rely on concise presentation slides and lecture-based methods. These conditions underscore the urgent need to develop website-based learning media tailored to the theory-heavy nature of the material and the characteristics of the digital generation of students.

Limitations in instructional media and the lack of appeal in the media used can create problems in the teaching and learning process (Wijaya, 2025). To address this, instructional media that are interactive, adaptive, and aligned with the characteristics of the digital generation are needed. Selecting the appropriate instructional media based on the characteristics of the material and students’ needs is a way to achieve effective learning (Astuti et al., 2024). Therefore, to address these issues, the researcher believes that innovation is needed to support learning activities. In this context, the researcher assesses that website-based learning media using the Wix platform is highly suitable as an

effective and relevant learning tool, because utilizing a website as a learning medium will provide students with a new experience, thereby making the teaching and learning process more varied, interactive, and creative.

The effectiveness of website-based learning media has been demonstrated by a number of previous studies. Studies conducted by Salsabila & Aslam (2022), Adibowo et al. (2025), Prabowo et al. (2022), Ramadhan et al. (2024), Firmansyah et al. (2023), Rahmawati et al. (2021), and Dharma & Septiana (2023) generally only provided instructional materials, exercises, and interactive quizzes without pre-tests or post-tests, discussion forums, or reflection spaces; furthermore, none of them integrated the Wix platform, the ADDIE model comprehensively, and vocational high school level economics content into a single development. Given these gaps, the novelty of this research lies in the inclusion of pre-test and post-test features, exercises for each subtopic, discussion forums, reflection forums, and the latest economic news within a single platform features that are not yet fully available on similar platforms.

Based on this, this study was designed to analyze the process of developing learning media using Wix and the ADDIE model. This study also examines the effectiveness, practicality, and feasibility of this approach for improving the academic performance of vocational high school students in Basic Economics.

B. Research Methodology

The methodology used is based on Research and Development (R&D) and implements the ADDIE development model. The entire process is divided into five sequential steps, analysis, design, development, field implementation, and final evaluation. The ADDIE development model was chosen because of its systematic structure and ease of implementation. Febriansyah (2025) states that the inclusion of periodic evaluation and revision stages in each phase is a key advantage of this model. This allows researchers to identify potential product shortcomings more quickly.

The subjects of this study included three types of validators content validators, media validators, and instructional design validators to determine the feasibility of the media.

In addition, this study also involved 36 tenth-grade students in the Office Management Specialization Program at SMK Negeri 48 Jakarta, who were divided into one-to-one sessions (three students) and small groups (seven students) to assess the practicality of the media, as well as a large group of 26 students to assess the effectiveness of the media.

The feasibility and practicality of the approach in this study were assessed using validation forms and student response sheets. In addition, the effectiveness of the approach in improving learning outcomes was evaluated using pre- and post-treatment tests (pre-test and post-test). To assess the effectiveness of the developed instructional media, it was implemented in actual classroom settings using a one-group pretest-posttest design. A visualization of this design is presented in the table below:

Table 1 Visualization of Experimental Design

Pre-test	Treatment	Post-test
O1	X	02

Source: (Sugiyono, 2013)

Notes:

O1 : Pre-test administered before the intervention

X : Learning with a new instructional medium

O2 : Post-test administered after the intervention

The assessment of feasibility and practicality conducted with experts and students during one to one and small-group sessions used a four-point Likert scale based on Sugiyono's theory, as illustrated in the table below:

Table 2 Likert Scale for Evaluation

Score	Criteria
4	Very Good
3	Good
2	Not Very Good
1	Very Poor

Source: (Sugiyono, 2013)

After the quantitative data from the validation sheets and student responses were collected using a Likert scale, the percentages were calculated using the formula shown below:

$$\% = \frac{\text{Total score earned}}{\text{Maximum score}} \; X \; 100\%$$

The table below explains the formula used to calculate scores. The following are the feasibility categories based on percentage:

Table 3 Feasibility Categories

Percentage	Category
81% - 100%	Highly Feasible
61% - 80%	Feasible
41% - 60%	Moderately Feasible
21% - 40%	Not Feasible
0% - 20%	Highly Not Feasible

Source: (Riduwan, 2018)

Meanwhile, the table below shows the categories of media practicality generated using the same

formula as the feasibility test, including:

Table 4 Practicality Categories

Percentage	Category
81% - 100%	Very Practical
61% - 80%	Practical
41% - 60%	Fairly Practical
21% - 40%	Not Practical
0% - 20%	Very Not Practical

Source: (Riduwan, 2018)

The assessment of student learning outcomes will yield data consisting of pretest and posttest scores. The researchers then tested the improvement using a one-group design and the N-Gain formula. According to (Hake, 1998), the N-Gain test is calculated using the following formula:

$$\text{N Gain} = \frac{\text{posttest score} - \text{pretest score}}{\text{ideal score} - \text{pretest score}}$$

The following is a classification of N-Gain values based on the formula used to generate scores from the calculation results, as follows:

Table 5 Classification of N-Gain Values

Value	Classification
N-Gain ≥ 0,7	High
0,3 ≤ g ≤ 0,7	Moderate
g < 0,3	Low

Source: (Hake, 1998)

This study has several limitations. First, the study participants were limited to 10th-grade students in the Office Management Vocational Program at a single school, namely SMK Negeri 48 Jakarta, therefore, the research results may not necessarily be generalizable to students at other schools. The second limitation lies in the use of a one-group pretest-posttest design without a control group. As a result, it cannot be fully determined whether the improvement in student learning outcomes is solely attributable to the instructional media in question.

C. Results and Discussion

Result

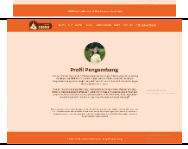
1. Development of Instructional Media

This study is a development research project that resulted in a website-based learning resource. The development of the media was carried out systematically using the ADDIE model. This framework integrates five sequential stages, analysis, design, development, field implementation, and conclusion. Through these stages, the developed learning media is expected to meet standards of suitability, practicality, and effectiveness in supporting learning activities.

The completed web-based learning resource can be accessed via the following link: https://ceciliazhara.wixsite.com/ecodu . This website can be accessed using

devices such as cell phones, laptops, or computers connected to the internet. A visualization of the results of the WIX website development can be seen in the following table:

Table 6 Visualization of Media Development Results

Image	Description
	Home Page
	ATP Page
	Course Materials Page
	Assignments Page
	Discussion Forum Page
	News Page
	Post-Test Page
	Developer Profile Page

2. Expert Validation

The feasibility review process was conducted by a group of validators consisting of content expert, media expert, and instructional design expert. Based on the results of the validators review, the feasibility rating of this instructional media is summarized as follows:

Table 7 Validator Assessment Results

No	Validator	Score	Category
1.	Content Expert	95,65%	Highly Feasible
2.	Media Expert	89,29%	Highly Feasible
3.	Instructional Design Expert	93,75%	Highly Feasible
	Average	**92,89%**	**Highly Feasible**

Based on the results in the table, the level of feasibility of this instructional media was determined to be 95.65% by content expert, 89.29% by media expert, and 93.75% by instructional design expert. Overall, the average score of 92.89% places this media in the “highly feasible” category.

3. One to One Test

One-to-one testing was conducted to gather useful suggestions and feedback for improving the product before proceeding to the small-group testing phase. The following are the results of the one-to-one testing with three students: Based on a limited trial conducted individually with three students, the following data were obtained:

Table 8 One to One Test Results

No	Student	Percentage	Category
1.	SAS	96,43%	Very Practical
2.	LFC	83,33%	Very Practical
3.	RS	91,67%	Very Practical
Total		**90,48%**	**Very Practical**

Based on the evaluations obtained from the three students during the one to one testing phase, the developed learning medium achieved a percentage of 90.48% and falls into the “very practical” category.

4. Small Group Test

The small group test aims to provide an overview of the practicality of the learning medium when used by a larger number of students. The assessment results from the small group test phase are presented as follows:

Table 9 Small Group Test Results

No	Student	Percentage	Category
1.	DR	96,43%	Very Practical
2.	APZ	94,05%	Very Practical
3.	ZR	88,09%	Very Practical
4.	SW	96,43%	Very Practical
5.	FA	96,43%	Very Practical
6.	EA	88,09%	Very Practical
7.	SR	96,43%	Very Practical
Total		**93,71%**	**Very Practical**

Based on the evaluations obtained from seven students during the small-group testing phase, the developed learning media received a score of 93.71% and falls into the “very practical” category.

5. Large Group Test

The researchers conducted this evaluation to determine the extent to which interactive learning materials can improve student learning outcomes based on pre-test and post-test scores. A summary of the students’ pre-test and post-test results is shown in the following table:

Table 10 Pre-Test and Post-Test Scores

Student	Pre-Test Score	Post-Test Score
ARM	56	88
AH	84	88
AF	52	72
AENA	64	84
CAA	60	84
DSH	68	88
KRP	56	80
KAM	60	84
KEQ	76	92
KHA	64	84
LA	56	76
MH	80	92
MFN	88	92
NS	68	84

Student	Pre-Test Score	Post-Test Score
NSR	72	88
NF	80	92
NAD	56	88
NAY	72	84
PAF	84	96
RZA	64	84
RAA	88	96
SP	68	84
SK	84	92
VA	80	88
WS	84	84
WPA	56	84
Total	**1820**	**2248**
Average	**70,00**	**86,46**

Based on the combined pre-test and post-test scores, an increase in the average student achievement score from 70 to 86.46 was identified. The next step involved analyzing these scores using the N-Gain test, the results of which are summarized below:

$$\text{N Gain} = \frac{\text{posttest score} - \text{pretest score}}{\text{ideal score} - \text{pretest score}}$$

$$\text{N Gain} = \frac{86{,}46 - 70}{100 - 70}$$

$$\text{N Gain} = \frac{16{,}46}{30}$$

$$\text{N Gain} = 0{,}54$$

The calculation results show an average N-Gain value of 0.54. According to the classification formulated by (Hake, 1998), this value falls into the “moderate” category.

Discussion

1. Feasibility of Instructional Media

Evaluations by experts in content, media, and instructional design yielded feasibility scores of 95.65%, 89.29%, and 93.75%, respectively. The average score of 92.89% classifies this web-based medium as “feasible”. These results demonstrate that this medium meets quality standards in terms of content, visual presentation, and instructional design, making it suitable for use as a teaching aid in the Basic Economics course. These results are consistent with research conducted by Suryaningrat et al. (2023), which found an feasibility percentage of 93.32% and fell into the “highly feasible” category.

2. Practicality of the Instructional Media

Based on the results of practicality testing conducted through one-on-one and small-group tests, the website-based instructional media achieved a score of 90.48% in the one-on-one test and 93.71% in the small-group test. These findings demonstrate that the designed learning materials are highly practical and very easy for students to use. The high practicality score indicates that the learning media successfully meets user needs. This finding is consistent

with the results of a study by Saputra et al. (2022), which showed a practicality rate of 82.8%, which falls into the “highly practical” category.

3. Effectiveness of the Instructional Media

Effectiveness testing on a large-group showed that students average scores increased from 70 on the pre-test to 86.46 on the post-test. These figures indicate an improvement in student learning outcomes after using the developed instructional media. The N-Gain-based analysis yielded a score of 0.54. This value places the media’s effectiveness in the “moderate” category. These results indicate that the instructional media were effective in improving students’ academic performance. This supports the scientific study by Rahmawati et al. (2021), which also found a positive correlation between the use of instructional media and improved learning outcomes.

Although these results fall into the moderate category, this does not mean that the teaching materials developed are ineffective. This is due to the testing conditions, which took place after the end of regular class time, when the learning environment was no longer conducive due to school events, student activities outside of class, and music playing in the school vicinity. However, the increase in scores from the pre-test to the post-test indicates that the website-based learning media remains effective, as it helps improve students’ learning outcomes in basic economics.

D. Conclusion

By applying the ADDIE model which consists of the Analysis, Design, Development, Implementation, and Evaluation phases, this study successfully developed a web-based learning tool using the Wix platform. Based on the results of the testing conducted, this learning resource was found to meet the feasibility criteria in terms of content, media, and instructional design, it is highly practical for use by students in both small and larger groups, and it is effective in improving student learning outcomes in the subject of Basic Economics. Thus, this website-based learning medium can serve as an alternative solution to the limitations of conventional learning media that have been used thus far, particularly for theory-heavy material

and for students of the digital generation.

The development of web-based learning materials produced in this study represents a contribution to the enrichment of literature and knowledge in the field of education. This study can serve as a reference for academics and researchers who wish to develop website-based learning materials for various subjects or educational levels. The learning materials developed using the Wix platform have been proven to meet the criteria of being appropriate, practical, and effective, and thus can serve as an example of digital learning material development using the ADDIE model.

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