

Development of Digital Media with CapCut, Canva, and Remove-BG to Improve Students' Digital Competence in Innovative Learning Course for BIPA



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ABSTRACT: This study aims to describe the process of developing learning media based on CapCut, Canva, and Remove-BG applications, the quality of learning media produced, and the effectiveness of learning media in supporting learning improvement. This research uses the Research and Development (R&D) method with the 4-D model (Define, Design, Develop, Disseminate). The validation process was carried out by material and media experts, followed by a trial on 10 students. Data collection techniques in this study include interviews, observations, validation questionnaires, pretests, and posttests. Data analysis techniques in this study used quantitative and qualitative approaches. The learning media developed obtained an average feasibility score of 85.34% (Very Feasible) based on expert validation. The effectiveness of the learning media reached 86% (Very Good), which was indicated by an increase in student learning outcomes. In addition, all students participating in the trial produced 10 works recognized with Intellectual Property Rights (HAKI), reflecting success in developing creativity and technological skills. This research shows that CapCut, Canva, and Remove-BG application-based learning media can improve the quality of learning and encourage students to produce innovative works that are relevant to the needs of the digital era.

KEYWORDS: learning media; CapCut; Canva; Remove-BG; innovative learning

1. INTRODUCTION

Digital technology has become an important element in various aspects of life, including education. The presence of digital technology opens up new opportunities to create more innovative learning methods [1]–[3]. Technology supports teaching that is relevant to the needs of learners, especially in courses that require creative approaches such as Innovative Learning for BIPA (*Bahasa Indonesia bagi Penutur Asing*) or Indonesian for Foreign Speakers. This course aims to equip students with the ability to design applicable learning media. Interesting and relevant learning media can increase learning motivation and encourage the active participation of students.

In the digital era, digital literacy is an essential skill that enables individuals to create relevant and meaningful learning media [4]. Digital literacy integrates information analysis with technology to support the learning process. Technology-based media offers a more effective learning experience than traditional methods [5]. Technology-based media can create immersive learning and attract students' attention. Platforms such as Powtoon and Videoscribe attract and enhance student creativity [4], [6]. Platforms can combine visual, audio, and animation elements that support innovation in learning. Technology can simplify complex concepts to facilitate student understanding [7]. The simplification can make it easier for students. With this approach, the development of CapCut, Canva, and Remove-BG-based media is an important strategy to ensure students have adaptive digital competencies in the modern era.

The development of learning media in line with technological developments is essential to achieve effective learning [7]–[10]. Digital applications such as CapCut, Canva and Remove-BG offer great potential in creating engaging and dynamic learning media. CapCut supports the creation of interactive educational videos [11], [12]. Canva allows learners to design engaging visuals [13], [14]. Remove-BG helps manipulate image elements to produce optimal aesthetics [15], [16]. The combination of these three applications provides flexibility and efficiency in designing technology-based learning media.

The use of technology-based media can make learning more interesting and create a pleasant learning atmosphere [17]–[19]. By involving students directly in the media production process, the learning can improve their digital literacy and confidence. In addition, the experience provides added value that is relevant to learning needs in the 21st century. Mastery of technology is one of the main competencies.

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The results of this study are expected to make theoretical and practical contributions. Theoretically, this research enriches the literature on the utilization of digital technology in higher education. Practically, the developed learning media can be a useful reference for various other courses. By emphasizing innovation, relevance, and sustainability, the research is expected to improve the quality of higher education through digital application-based learning media. The resulting media is expected to enrich students' learning experience while increasing their adaptability to the challenges of the ever-evolving world of work.

2. LITERATURE REVIEW

2.1 Multimedia Learning

Multimedia approaches integrate visual, text and audio elements to convey information effectively [20], [21]. It allows learners to process information through multiple cognitive channels. The combination of multimedia elements not only enhances learning appeal but also optimizes long-term memory retention [22], [23]. This research utilizes CapCut, Canva, and Remove-BG applications to develop learning media that are engaging, interactive, and technology-based. These applications are designed to present material coherently, by multimedia principles.

2.2 21st Century Skills

Digital literacy, collaboration and critical thinking are essential 21st century skills that are increasingly important in the digital age [24], [25]. These skills can support individuals to adapt quickly to technological change and global challenges. Mastery of digital literacy, collaboration, and critical thinking allows individuals to be more innovative in solving complex problems [26], [27]. Thus, technology-based education should be designed to effectively integrate the development of digital literacy and critical thinking. This research trains students to design relevant learning media, improve conceptual understanding, and hone technology skills relevant to the world of work.

2.3 Education Technology

Technology in education strengthens the quality of learning by making it more flexible and personalized [28], [29]. Technology integration allows teaching to be tailored to individual needs, thus supporting a variety of learning styles. The use of technology also increases the accessibility of learning, making it more inclusive for learners from different backgrounds [30], [31]. Applications such as CapCut, Canva, and Remove-BG provide added value through interactive media design, increasing student engagement and motivation to learn. By integrating technology into learning, this research contributes to the development of relevant and effective media to meet the needs of modern education.

2.4 Research Questions

- RQ1: What is the process of developing learning media based on the App. CapCut, Canva, and Remove BG integratively that can improve the quality of lectures in the Innovative Learning for BIPA course?
- RQ2: What is the quality of learning media developed based on App. CapCut, Canva, and Remove BG integratively to improve the quality of lectures in the Innovative Learning for BIPA course?
- RQ3: How is the effectiveness of learning media developed based on an App. CapCut, Canva, and Remove BG integratively to improve the quality of Innovative Learning for BIPA courses?

3. RESEARCH METHODS

3.1 Research Design

This study used a Research and Development (R&D) approach by adopting Thiagarajan's 4-D model which includes four main stages: Define, Design, Develop, and Disseminate. This approach was chosen due to its relevance in the development of effective and applicable technology-based learning media. This research aims to create learning media based on CapCut, Canva, and Remove-BG applications that can improve the quality of innovative learning in the Innovative Learning for BIPA course. In addition, this research also evaluates the quality of the effectiveness of the media produced through expert validation and field trials.

3.2 Procedures

In the Define stage, the first step is to make observations to identify the potential problems faced by students in learning. Information from these observations is used to analyze the purpose of developing learning media, so that the media developed can answer student needs effectively.

The Design stage begins with designing the product design, including the storyboard and material presentation structure. This process is followed by the creation of content and display components, which include multimedia elements such as text and images. These components are designed using CapCut, Canva, and Remove-BG applications to create learning media that are attractive, interactive, and appropriate to the learning context.

In the Develop stage, the learning media is produced based on the design that has been designed previously. This production involves combining multimedia elements into a complete learning product. In addition, research instruments such as validation

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questionnaires are prepared to evaluate the quality and effectiveness of the media. After the media is produced, it is evaluated by material experts and media experts to ensure the quality of the media in terms of content and technical. Based on the input from the validation, revisions were made to improve the product.

The last stage is Disseminate, the revised learning media is tested on students. This process aims to measure the effectiveness of the media in improving students' understanding while collecting their responses regarding aspects of attractiveness, relevance, and ease of use. The results of the pilot test are used to assess the extent to which the learning media can improve the quality of learning and students' overall competence. The process ends with product dissemination for use in other innovative learning.

The following flowchart illustrates the research procedure.

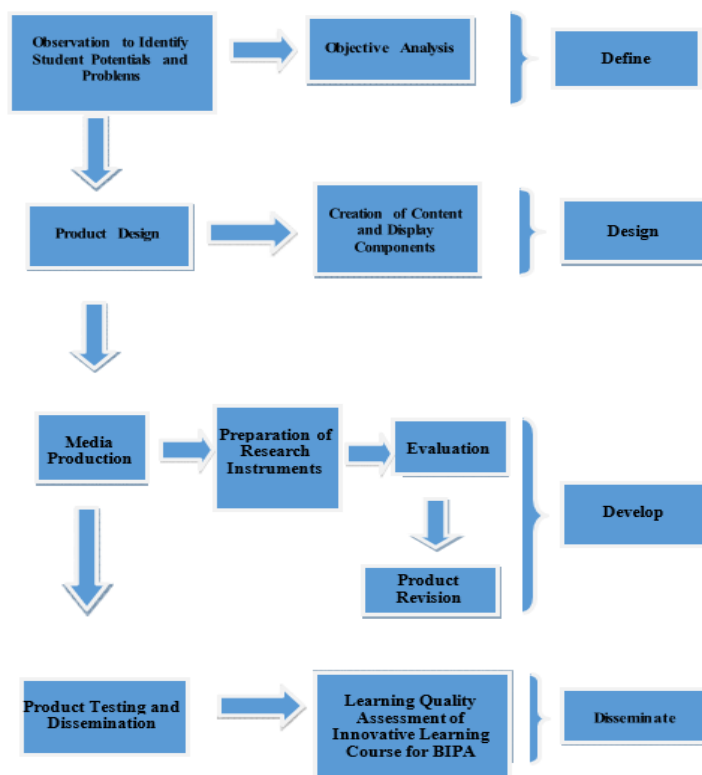


Fig. 1. Flowchart of research procedure

3.3 Data Collection Technique

Data in this study was collected using several techniques. Interviews were conducted to identify students' needs and characteristics, while observation was used to observe the potential and constraints in innovative learning for BIPA. A validation questionnaire was developed to assess the quality of learning media from the perspective of material and media experts. In addition, pretest, and posttest were used to measure the effectiveness of learning media on students' learning outcomes.

3.4 Instruments

The instruments used in this study include a validation questionnaire, pretest, and posttest tests. The validation questionnaire was designed to assess the feasibility of the media from the aspects of content, design, and technical, which were validated by material and media experts. The pretest and posttest tests were used to measure students' increased understanding of innovative learning materials before and after using the media. In addition, semi-structured interview and observation guides were also used to identify learning needs.

3.5 Data Analytics

The data obtained were analyzed using quantitative and qualitative approaches. Quantitatively, data from the validation questionnaire, pretest, and posttest were calculated in the form of percentages and averages to assess the level of validity and effectiveness of learning media. A comparison of pretest and posttest results was carried out to measure the improvement of student learning outcomes. Qualitatively, data from interviews and observations were analyzed descriptively to provide an in-depth picture of learning needs and context.

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Criteria for Media and Material Validation Assessment

Table 1. Media validation assessment using a scale of 1-5

No.	Scale	Category
1.	1	Invalid
2.	2	Less Valid
3.	3	Quite Valid
4.	4	Valid
5.	5	Very Valid

The average score was converted into a percentage using the following formula.

$$\text{Percentage} = \frac{\text{Total Score Earned}}{\text{Total Maximum Score}} \times 100\%$$

Table 2. Interpretation of percentage results based on feasibility categories

No.	Percentage	Category
1.	21%	Very Inappropriate
2.	21% — 40%	Not Feasible
3.	41% — 60%	Moderately Feasible
4.	61% — 80%	Feasible
5.	81% — 100%	Very Feasible

Media Effectiveness Assessment Criteria

The effectiveness of the media was measured based on students' pretest and posttest results. The change in value is calculated using the following formula.

$$\text{Percentage} = \frac{\text{Total Score Earned}}{\text{Total Maximum Score}} \times 100\%$$

Table 3. Interpretation of percentage results based on feasibility categories

No.	Percentage	Category
1.	21%	Very Less
2.	21% — 40%	Less
3.	41% — 60%	Fair
4.	61% — 80%	Good
5.	81% — 100%	Very Good

4. RESULTS AND DISCUSSION

This research uses the 4-D model (Define, Design, Develop, Disseminate) to develop learning media based on CapCut, Canva, and Remove-BG applications. The Define stage identifies the learning needs of students who face challenges in designing innovative media. The Design stage produces structured and attractive media, while the Develop stage validates the media with the results of the “Very Feasible” category from material and media experts. At the Disseminate stage, the trial showed an increase in student understanding with an average score of the “Very Good” category and high motivation that encouraged them to produce IPR-certified work. The results of these four stages prove that the learning media developed are effective in improving students' digital competencies.

4.1 Define, Identify Needs and Map Out Challenges

The Define stage in this research aims to analyze the needs and problems faced by students of the Master of Indonesian Language Education Study Program (S2 PBI) at State University of Surabaya (Unesa) in the Innovative Learning for BIPA course. Observations and interviews with 10 students revealed that the majority faced challenges in integrating digital technology to create interesting and interactive learning media. Students generally have difficulties in utilizing technology-based applications to effectively combine multimedia elements such as text, audio, and video. In addition, limited technical knowledge often hampers their creativity, resulting in suboptimal learning products.

Based on these findings, this research designs learning media development based on CapCut, Canva, and Remove-BG applications which are chosen for their simple features but able to produce quality products. The media designed includes

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infographics, interactive videos, and animations that are arranged to increase the attractiveness of learning while supporting active student involvement. The goal of this media development is to provide solutions that not only support students' understanding of learning materials, but also improve their skills in using digital technology as a tool to support innovation.

The development of this learning media is expected to be able to answer the needs of students by providing tools that are relevant, easy to use, and able to motivate them to be more creative in designing learning media. This approach is a strategic step to support learning that is more interactive, innovative, and relevant to educational needs in the digital era.

4.2 Design: Designing Interactive and Relevant Media

At the Design stage, this research focuses on developing an application-based learning media design that meets the needs of students in the Innovative Learning for BIPA course. The design process begins with developing a storyboard as the main framework that organizes the flow of material presentation. The storyboard ensures that multimedia elements such as text, audio, images, and animations can be structured so as to convey the material in an interesting and effective manner.

The design includes three main parts, namely the opening, content, and closing. The opening section is designed to give a good first impression by displaying the title of the material and the identity of the lecturer. The visual appearance utilizes image elements processed using the Remove-BG application to make it look clean and professional. Background audio elements are used to increase the attractiveness of the opener so that students are more enthusiastic about starting learning.

In the content section, the core material is presented through a carefully designed combination of multimedia elements. Short and informative texts are combined with infographics designed using Canva to strengthen the delivery of information. Transition animations are created using CapCut to make the presentation more interactive. This approach is designed to make it easy for students to understand the learning flow while increasing their interest in the material presented.

The closing section is organized simply but still gives a positive impression. Gratitude to students is displayed with a visual design that is consistent with the overall theme of the media. This closing gives appreciation while ending the learning with a pleasant atmosphere. The learning media produced is designed to be accessible through various devices such as smartphones, computers, and laptops so that the flexibility of use can be guaranteed.

This media design is not only designed for aesthetics but also to support students' in-depth understanding of the material. With a comprehensive design approach, the results show that this learning media is able to increase student engagement in learning while meeting the needs of education in the digital era.

4.3 Develop, Producing and Validating Learning Media

The develop stage begins with developing the production of media components such as graphics, text, video, animation, and audio. In addition, the materials, images, backgrounds, and concepts that have been determined in the previous stage are applied into videos according to the desired concept. The media will be implemented in real time using the CapCut, Canva, and Remove-BG application programs. After the preparation is complete, the text, graphics, images will be animated according to the script that has been made. After the raw animation is complete, the correction and editing process of the media will begin to avoid errors and ensure that the resulting files can be used smoothly. After completion, the media that has been made earlier is exported into mp4 or MKV format and will later be entered into a personal computer to make it easier to use, then an evaluation is carried out. Formative evaluation carried out at the develop stage is by conducting a learning media validation test. This validation test was conducted by expert lecturers in the field of learning media and expert lecturers on innovative learning materials for BIPA.

The following are the results of the development of learning media based on CapCut, Canva, and Remove-BG applications in Innovative Learning lectures for BIPA with material on the scope of innovative learning.

4.3.1 Opener

At this stage, the learning media made in the form of an opener consisting of the title of the material. The background is made with an attractive appearance/image accompanied by audio accompaniment. The opening display must be interesting so that students are interested and interested in seeing it. The following is the initial or opening image of the learning media that has been designed by **researchers**.



Fig. 2. Media Opening Stage

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4.3.2 Material Content

Learning media is filled with exposure to information or material to be discussed. The following is a display of Innovative Learning for BIPA course material that has been developed into media based on CapCut, Canva, and Remove-BG applications.



Fig. 3. Media Content

4.3.3 Video Closing

The closing section is filled with thanks to the students/users of the learning media.



Fig. 4. Media Closing

4.3.4 Product Validation

In this study, a product validation questionnaire instrument was used to measure the quality of CapCut, Canva, and Remove-BG-based learning media in Innovative Learning for BIPA lectures. There are two types of questionnaires developed, namely material validation questionnaires and media validation questionnaires.

4.3.4.1 Material Expert Validation Results

In testing the completeness of the material used in learning media based on CapCut, Canva, and Remove-BG applications, validation is carried out by material experts with aspects such as the suitability and accuracy of the material used, whether the material can encourage curiosity, how easy the language is and the conciseness of the flow of thought, whether the content of the material is contextual, and how the presentation technique is. The following are the results of validation by material experts.

Table 4. Material Expert Validation Results

No.	Aspects	Category				
		1	2	3	4	5
1.	Appropriateness of Material					√
2.	Accuracy of Material				√	
3.	Encouraging Curiosity					√

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4.	Coherence and Order of Thought				√	
5.	Way of Presentation				√	
6.	Contextual				√	
Total Validator Score		26				
Total Maximum Score		30				

From table 4 which shows the results of validation by material experts, the average data is obtained with a percentage of 86.6% (Very Feasible), which is obtained through the following calculation.

$$\text{Percentage} = \frac{26}{30} \times 100\% = 86.67\% \text{ (Very Feasible)}$$

4.3.4.2 Media Expert Validation Results

Validation conducted by media experts is a way to test the feasibility of learning media with aspects such as the presentation of infographics, audio, video, the use of words and language according to the rules, coloring, attractive appearance and screen, as well as animation and sound. The following are the results of validation from media experts.

Table 5. Media Expert Validation Results

No.	Aspects	Category				
		1	2	3	4	5
1.	Presentation				√	
2.	Coloring				√	
3.	Display and Screen				√	
4.	Use of words and language					√
5.	Animation and Sound				√	
Total Validator Score		21				
Total Maximum Score		25				

From table 4 above, the results of the media feasibility test obtained data on the average assessment score from media experts is the percentage of 84% (Very Feasible). This percentage is obtained from the following calculation.

$$\text{Percentage} = \frac{21}{25} \times 100\% = 84\% \text{ (Very Feasible)}$$

After the media is validated by media experts and material experts, then calculations are made from the results of the feasibility test validation by the two experts, in order to obtain the conclusion of the feasibility validation results contained in the following table.

Table 6. Media Feasibility Validation Results Table

Validator	Percentage	Description
Material Expert	86.67%	Very Feasible
Media Expert	84%	Very Feasible
Average Result	85.34%	Very Feasible

Based on table 6 above, it can be seen that the average results of media feasibility validation by media experts and material experts obtained an average percentage of 85.34%. This result is in the Very Feasible category. Therefore, it can be concluded that all components in each aspect of this learning media are suitable for use in the learning process in the classroom, both in terms of media design and in terms of material content.

4.4 Disseminate, Trial and Distribution of Learning Media

At the Disseminate stage, learning media based on CapCut, Canva, and Remove-BG applications were tested on ten students of the Master of Indonesian Language Education Study Program at Surabaya State University. The trial aims to evaluate the

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effectiveness of learning media in improving students' understanding and motivation. Before using the media, students' understanding of the material was low. After using the learning media, students' scores showed a significant increase.

Table 7. Student scores after using learning media

No.	Student Code	After Grade
1.	Student 1	80
2.	Student 2	90
3.	Student 3	80
4.	Student 4	90
5.	Student 5	100
6.	Student 6	80
7.	Student 7	80
8.	Student 8	100
9.	Student 9	70
10.	Student 10	90

Calculation of Media Effectiveness Media effectiveness is calculated using the formula. From the table above, the total score obtained by students is as follows.

$$80+90+80+90+100+80+80+100+70+90=860$$

The maximum total score for 10 students is:

$$100 \times 10 = 1000$$

Then, the percentage of effectiveness is:

$$\text{Percentage} = \frac{860}{1000} \times 100\% = 86\% \text{ (Very Good)}$$

Based on the eligibility category, the 86% score is included in the Very Good category, indicating that the developed learning media is very effective in supporting student learning.

Students' scores after using CapCut, Canva, and Remove-BG application-based learning media varied from 70 to 100. Students with a score of 100 showed exceptional ability in all aspects of the assessment. They are able to understand the material through the learning media very well. Students with a score of 90 reflect excellent mastery, although there is little room for improvement. A score of 80 indicates that students have a good understanding of the material and are quite skillful, but there are some shortcomings in some aspects of learning. Meanwhile, a score of 70 is given to students who still show sufficient understanding of the material, but need to further improve their mastery of knowledge of learning materials. Overall, the scores achieved by the students show that the learning media developed succeeded in improving their skills in using technology while supporting a deeper understanding of the material.

In addition to improving material understanding, this learning media also motivates students to produce creative and innovative work. Of the ten students who participated in the trial, all of them succeeded in producing learning media that were recognized with Intellectual Property Rights (HAKI) certificates. The HAKI certificate provided is proof that student work meets the standards of innovation, originality, and quality. The following is a list of HAKI certificate numbers received by students:

Table 8. List of IPR Certificate Recording Numbers

No.	Title of Creation	Recording Number
1.	Lembar Kerja Mahasiswa BIPA: Jendela Keunikan Budaya Indonesia	000661419
2.	Kalimat Tunggal Bahasa Indonesia	000802700
3.	Memahami Unsur-unsur Pembangun Teks Cerita Pendek	000661605
4.	Lembar Kerja Mahasiswa BIPA B1 Unit Mengenal Ragam Pekerjaan di Indonesia	000661414
5.	Menjelajah Dunia Fantasi	000661612
6.	Hubungan Semantis Antarklausa dalam Kalimat Majemuk Koordinatif dan Subordinatif	000808279
7.	Menyusuri Jejak Budaya Nusantara melalui Wayang	000661418
8.	Melintasi Generasi Pewaris Trauma Dalam Postmemory	000661434
9.	Eksplorasi Kesenian Tradisional Ludruk dan Cerita Sarip Tambak Oso	000661604
10.	Kalimat Majemuk Bertingkat	000808285

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This achievement shows that application-based learning media is not only effective in supporting students' understanding, but also able to encourage them to produce works of high intellectual value. With HAKI recognition, the media produced by students have the potential to be used more widely and have a positive impact on innovative learning.

5. CONCLUSION

This research confirms the importance of utilizing digital technology in supporting learning innovations that are relevant to the demands of the 21st century. Through the development of media based on CapCut, Canva, and Remove-BG applications, this research succeeded in producing learning media that are visually appealing and effective in improving student competence. The results show that collaboration between design elements, multimedia, and simple technology can create media that can bridge students' technical limitations with modern learning needs.

The use of integrated applications in the learning process is proven to have a positive impact on student engagement and motivation. In addition, the technology-based learning process provides direct experience for students to create works that can meet academic standards and get recognition through IPR certificates. This shows that learning is no longer just about delivering material, but also developing creative and innovative skills that are relevant to the world of work.

With the success that has been achieved, this learning media has the potential to be adapted to various other educational contexts. However, the sustainability of this media development requires further collaboration between academics, education practitioners and technology developers so that learning innovations can continue to develop dynamically. Through this approach, technology-based learning media is not only a supporting tool, but also a strategic foundation to improve the quality of education in the digital era.

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