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## **Designing Electronic Comics to Develop Students' Reading Comprehension of Narrative Text**

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### **Abstract**

This study aims to investigate the design of Electronic Comics to enhance students' reading comprehension of Narrative Text, and to identify the strengths and weaknesses of Electronic Comics in this regard. This study uses the Design and Development Research (DDR) method by Richey and Klein (2009), which involves three main phases: analysis, design, development, and evaluation. Data were collected through observation, interviews, and comic trials. The research participants were three English teachers, one media expert, and eleventh-grade MIA students. The findings obtained in designing were: In the analysis stage, researchers conducted observations and interviews to understand students' constraints and preferences for learning media. In the design and development stage, two narrative texts were transformed into electronic comics and validated by experts. Validation results showed that the first electronic comic achieved a score of 83%, and the second achieved a score of 96%. After that, an electronic comic trial was conducted in the eleventh grade of MIA for the evaluation section to find strengths and weaknesses. The strengths of electronic comics include visual appeal that increases students' interest in reading and the ability to present information interactively and engagingly. However, the weakness is the limited access to technology for some students, which can affect the effectiveness of its use.

### **Key words**

Design Research, Electronic Comics, Narrative Text, Reading Comprehension

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## **Introduction**

English is one of the languages taught in today's Education system. English Language Teaching can prepare students in international terms. This is also in line with Rose and Galloway (2019), who said that English is a world language that is widely used in various countries and various fields (p.1). In Indonesia, English is a compulsory subject, especially in the "Merdeka Curriculum". In the Merdeka Curriculum, teachers are allowed to choose the learning resources or references to strengthen literacy. The Merdeka Curriculum policy emphasises the importance of literacy-based learning in all subjects, especially English. Learning resources that are easily accessible and can be easily understood by students in English lessons are electronic comics.

Electronic comics are comics published in digital format that contain a single panel or a series of interdependent images (Aggleton, 2019). It also refers to a type of comic that can be accessed and enjoyed digitally through electronic devices such as computers, tablets, and smartphones. This is also in line with Maity (2022), who says that digital comics are comics that can be enjoyed digitally on various devices. Jen (2019) also said that comics published in digital format are considered digital comics or electronic comics. Electronic comics are also a series of images inserted into a box that contains an entire series of stories digitally (Hobri et al., 2019).

Electronic comics can help understand narratives. Narrative texts use words to describe events and characters, while e-comics provide visuals for the text. This makes electronic comics able to present a strong narrative with visual support, increasing understanding and reader appeal. This explanation is also in line with McCloud (2008), who puts forward the concept that comics are an art form that combines images and text to convey stories, facilitating easier understanding of the text.

This research has been conducted previously, such as those conducted by Winarti (2018), Saputra and Pasha (2021), and Nopita (2022). This research has been conducted previously, such as by Winarti (2018), Saputra and Pasha (2021), and Nopita (2022). The study by Winarti (2018) found that the use of digital comics provides a positive contribution and is believed to be effective in delivering material. This is because digital or electronic comics are designed to be engaging and accessible, making them understandable for all levels of learners. The second study was conducted by Saputra and Pasha (2021). The results showed that the comics are easily accessible via mobile phones and can be accessed online or offline without requiring a large internet quota because they are in JPG and PDF formats. The third study was conducted by Dewi Nopita (2022). The results showed that electronic comics for English reading materials are engaging and motivating for students. Furthermore, electronic comics can be used for independent learning without the need for teacher explanations and are also practical.

The research conducted by the researcher this time is similar to the previous research, but the researcher made it different. Researchers fill in the gaps from previous research, namely, to find out how to design and to find out the strengths and weaknesses of electronic comics to develop students' understanding of reading Narrative Text. This kind of research is very important and necessary because it aims to fill in the gaps in previous research and also obtain data that is useful for further research.

Based on the description above, the researcher is ultimately interested in conducting research with the title " Designing Electronic Comics to Develop Students' Reading Comprehension of Narrative Text". Researchers use the "Design and Development Research" or DDR method.

## **Literature Review**

English as a Foreign Language (EFL) is a term referring to the learning and use of English in countries where English is not the native language or regional language. As an international language, English has undergone significant changes due to cultural, political, and economic influences (Halliday, 2020). Its impact on these areas has prompted many countries to incorporate EFL into their educational curriculum.

In EFL learning, four main skills are taught: speaking, writing, listening, and reading. Reading has a subskill, namely reading comprehension. Reading comprehension is the process of understanding a text as a whole, and in addition, readers will derive ideas or meaning from the text (Nurdiana & Rizki Amelia, 2017). This is also in line with Woolley (2011), who stated that reading comprehension is the process of interpreting a text (p. 15). Lahagu, Pangaribuan, and Prayuda (2020) also stated that reading comprehension is a complex process involving the interaction of many components, where readers construct meaning from a text and connect it with their background knowledge to gain a clear understanding of the message. One such text is narrative.

Narrative text is a text that tells a series of events sequentially from beginning to end and is interconnected. This type of text has an imaginative or imaginary nature that aims to entertain the reader. According to Abbott (2020), a narrative is a text that presents a story and thus entertains or provides information to the reader (p. 13). Adiyani (2022) also stated that a narrative paragraph is a type of story text that is imaginative and also describes a series of events over time, presented from beginning to middle to end. In short, a narrative text is a text that contains a story that has a series of interconnected events and is usually imaginative. Narrative text has several aspects. Muliani et al. (2018) stated that the generic narrative text structure consists of four aspects: orientation, complication, resolution, and reorientation. This narrative text can be used as reading material and transformed into technology-based media, namely e-comics.

Electronic comics can attract students' enthusiasm for learning and teach them to translate stories into images, helping them retain the material longer. The material contained in e-comics can explain the entire story because it contains illustrations that make it easier for students to understand the meaning of sentences in the narrative text. The purpose of illustrations provided by digital reading materials is to improve learning abilities (Brante & Holmqvist, 2017). Frechette and Williams (2016) also explained that today's young generation is highly exposed to electronic devices, such as computers, tablets, and smartphones. This also presents learning opportunities using technology, as technology is currently considered a solution to optimise the learning experience, with digital devices and online platforms providing greater access to materials and interaction (Dudeney & Hockly, 2020). Therefore, researchers created media, namely electronic comics containing narrative text, as reading material to develop students' reading comprehension.

## **Research Method**

The researcher used the "Design and Development Research" (DDR) method. Richey and Klein (2009) say that "DDR is the systematic study of the design, development, and evaluation process to establish an empirical basis for the creation of instructional and non-instructional products and tools and new or improved models for development." In summary, the researcher chose the Design and Development Research (DDR) method to create the product in the study because this method provides a process that involves design, trial, evaluation, and revision, resulting in a more valid, effective, and relevant product. This method also focuses on research and Education. DDR involves design, development, and evaluation to create or improve instructional products effectively.

Analysis is the first part of product development, which involves collecting data to inform product development and provide evidence of cost-effectiveness. In collecting this data, the researcher must investigate the problems in the school through observation and analyse the needs of students and the product by interviewing teachers. The researcher also explains the evidence of cost-effectiveness incurred during the product design and development process.

Design and development is the second stage carried out after seeing the results obtained in depth and starting to design products based on existing data. After conducting interviews, researchers obtained data to create narrative texts and electronic comics. Researchers did several things, such as making narrative texts based on the conclusions of the previous analysis and making prototypes. If the prototype is deemed good, the researcher proceeds to make a product that is worth presenting. This stage is accompanied by a validation sheet and an assessment sheet that includes a section for providing suggestions.

The evaluation stage is the final stage of this research design. In this stage, researchers test the product in a variety of situations, identify key lessons, and publish development data to facilitate the use of the product in other environments. Researchers tested the product in a small-scale learning situation, namely one class. In its implementation, the teacher assisted, where previously the researcher explained how to use the product that had been made. Not only that, product trials were also carried out to determine the strengths and weaknesses of products that had been made as part of this research. After conducting trials, researchers evaluate and determine the lessons learned. Finally, researchers publish this development data in journal form.

Participants in this research were three teachers at Bawari Islamic High School, one media expert, one content expert, and twenty-one eleventh-grade MIA students. Three teachers participated in collecting information regarding suggestions to inform the design of a product. Meanwhile, one media expert was involved to validate the media. Also, one content expert was involved to validate the content. Lastly, twenty-one eleventh-grade MIA students participated in the implementation to find out one of the objectives of this research.

## **Findings**

This research aims to explore the design of Electronic Comics to enhance students' reading comprehension of Narrative Texts and to identify the strengths and weaknesses of Electronic Comics in this context. The researcher conducted three stages to achieve these

objectives: the Analysis phase, the Design and Development phase, and the Evaluation phase.

### 1. The Analysis Phase

The analysis phase involved data collection to support product creation and assess cost effectiveness. Researchers investigated problems at schools, observed student needs, and conducted interviews to gather relevant data.

**Observation:** Conducted during the "Asistensi Mengajar" program in 2022, observations revealed that most teachers used traditional books without engaging material, leading to students' lack of interest and difficulty in understanding reading materials. The students expressed boredom and low motivation due to the minimal use of technology in teaching.

**Interview:** Interviews with teachers revealed that the electronic comics would consist of two narrative stories blending students' daily lives with inspiring fiction. These stories will be simple, with natural dialogue, bright illustrations, and elements of fantasy to maintain interest and improve reading comprehension.

**Cost Effectiveness:** The development of the product incurred no costs, as the researcher did not outsource any services for writing, illustration, or technical support.

**Table 1.1 Cost Effectiveness**

No	Details	Cost
1	Story writing process	Rp 0-
2	Illustration process using the application (Cat Medibang)	Rp 0-
3	Use of electronic devices (Smartphones)	Rp 0-
<b>Total</b>		Rp 0-

### 2. Design and Development phase

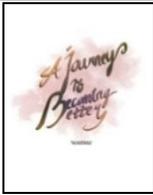
The researcher created two narrative texts, which served as the foundation for the electronic comics, and designed multiple-choice questions for each story. Both stories were validated by three English teachers and one content expert, with the first story receiving scores of 93%, 90%, 84%, and 81%. The second story received 93%, 84%, 84%, and 84%, indicating it was suitable for the electronic comic development. Validators, namely, media experts, have validated this electronic comic. The electronic comic of the first story scored 83%, and the electronic comic of the second story scored 96%. Following the validation, the researcher has started to make sketches, line art, colouring,

adding bubble text, and arranging panels. Here is the process for making a sketch:

**Table 2.1 Electronic Comic Sketch**

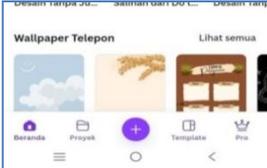
Information	Picture	
<p>First, the researcher created characters based on the story. The characters from the first story were two people, Tasya and Arin. They were the main characters in the first story. For the characters of the second story, there are also two people, namely Bimo and Alera. They are the main characters in the second story.</p>	<p><b>First story</b></p> 	<p><b>Second story</b></p> 
<p>After that, the researcher sketched from the first paragraph to the last. The researcher made a sketch consisting of characters, places, and even details such as books, blackboards, and school buildings. This was done to clarify further the story about the location, objects, and character expressions.</p>	<p><b>First Story:</b></p> 	<p><b>Second Story:</b></p> 

**Table 2.2 Line art, Colour and Bubble Text**

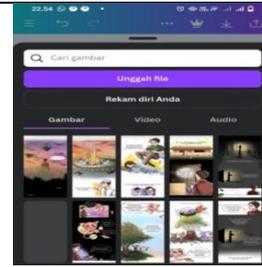
Information	Picture
<p>The researcher digitally created titles with bright colours, preferring to draw them manually rather than using templates to match the comic's visual style.</p>	
<p>After the title, the researcher made the sketches by adding line art, which clarified and organised the images, making them easier to colour.</p>	
<p>After creating the line art, the researcher continued to colour the image. The colouring process began with base colours, followed by colour gradients, shadows, textures, and lighting to make the visuals more vibrant and detailed.</p>	

<p>After the colouring process was complete, the researcher continued by providing colour and images on the background. Backgrounds were added to connect the panels visually, with colours and images aligning between panels for continuity.</p>	
<p>After creating the background, the researcher added small details, such as glitter, clouds, flowers, and grass, to make the illustrations more dynamic.</p>	
<p>After that, the researcher added bubble text for character conversations and narrative sections, ensuring clarity with appropriate backgrounds for the text.</p>	

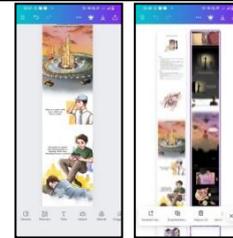
**Table 2.3 Arranging and Saving Panels into an Electronic Comic**

Information	Picture
<p>In compiling panels into electronic comics, researchers use an application called Canva.</p>	<p><b>The Application:</b></p> 
<p>First, open the Canva application. When opening the application, there are various options in the menu. In the menu section, the researcher chose the purple plus symbol at the bottom because the researcher wanted to create a special size for the panel to connect various comic panels. After pressing the plus symbol, the researcher continued filling in the special size, namely 800 for the width and 7500 for the height.</p>	<p><b>Menu:</b></p>  <p><b>Custom Size:</b></p> 
<p>Second, after filling in the desired size, this application takes the researcher to a previously requested panel. This white panel is the basic panel connecting several panels created in the Medibang Paint application.</p>	

The third is to continue by looking for the upload file feature at the very bottom. The researcher presses the feature, and the application will provide the option to search for images and upload files. The researcher uploads the comic panels to Canva to connect them.

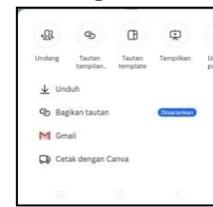


The fourth part is the part of connecting panels from one to another. Here, the researcher has connected several image panels into one. It can be seen that the images from the two panels that were previously separated can be connected. The researcher does this until all the panels are finished.

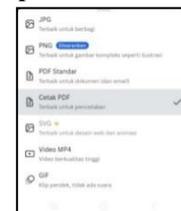


The fifth step is saving the connected panels into a PDF file. After all the panels have been connected, the researcher continues to save them in PDF format. Look for the "download" option, then press the "download" button, and the application will display a choice of formats to download. The researcher chose print PDF as the format to download. After that, the application will display the download option again, and it can then be downloaded.

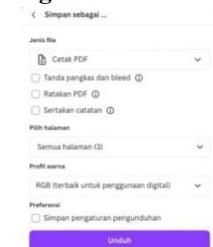
**Look for the "download" option.**



**Select PDF in the download format options.**



**The application will display something like this:**



After carrying out various processes, starting from creating a text narrative containing questions, making sketches, providing line art, colours, and bubble text, and finally combining and saving panels into an electronic comic in PDF file format. Electronic is ready to be read anywhere, offline or online. This electronic can be accessed on all smartphones, laptops, computers, and tablets. The narrative text also includes questions, so the electronic comic features a question section that

students can complete after reading. This is a unique feature demonstrated by the electronic comic.

### **3. Evaluation Phase:**

At this stage, researchers tested the product in one class (XI MIA) with the assistance of teachers who had been given prior guidance. Teachers explained how to use electronic comics to students, then students read and answered questions together. After implementation, researchers interviewed teachers/MA to find out the strengths and weaknesses of the product. The results obtained were:

#### **MA (1a)**

The strengths of electronic comics include being a different reading medium from traditional print media, especially in schools. Then it can increase students' interest in reading, and make it easier to understand reading, especially English texts, because it combines text and visuals. Students also better understand what is conveyed in narrative texts.

#### **MA (1b)**

The second strength is that students' reading comprehension skills improve because of the visuals that support the text, which helps them better understand the content. For example, if the text mentions "school" as the setting, the images displayed also show a school. This helps students better understand the setting, time, plot, and character movements. This makes the plot clearer than just reading the text. This is particularly beneficial for students who are not yet proficient in reading English texts. Thus, students who are not yet proficient can be assisted by the use of electronic comics.

#### **MA (1c)**

The weaknesses of electronic comics include limited access to technology among students because not all students have gadgets, and not all schools allow their students to bring cellphones.

#### **MA (1d)**

The second is that students may be distracted by other applications, so they cannot read them properly.

After the evaluation, the researcher can conclude that the key takeaway is the importance of appropriate media to build interest and enthusiasm in students. The use of technology and distraction management is also very important. Finally, the school policy should also consider policies on the use of personal devices to support the use of electronic-based media in learning without disrupting the learning process.

## **Discussion**

The findings of this study show the process of creating electronic comics, from narrative text to storage in PDF format, and reveal their strengths and weaknesses. The results of this study reinforce previous research conducted by Harsuni Winarti (2018), Very Hendra Saputra and Donaya Pasha (2021), and Dewi Nopita (2022), who stated that digital comics are an important innovation in supporting English language learning.

The strength of using electronic comics is that they contribute positively to students' understanding, as teachers agree, emphasising that electronic comics can attract students' interest in reading. Harsuni Winarti's (2018) research demonstrates that digital comics have a significant impact on the delivery of learning materials. Meanwhile, research by Very Hendra Saputra and Donaya Pasha (2021) shows that comic designs in JPG and PDF formats can be accessed without requiring significant internet data, demonstrating how comics can serve as an efficient medium both online and offline. Furthermore, there are also relevant theories regarding the relationship between reading comprehension and narrative text within electronic comics. This Theory is called Schema Theory. Applebee and Langer (2014) explain that readers use their prior knowledge and experience (schemas) to understand the texts they read. When readers are exposed to narrative texts, they utilise their existing schemas to make predictions and identify patterns within the text. When reading narrative texts, readers activate schemas related to elements such as characters, setting, plot, and theme. Therefore, narrative texts provide a clear and integrated framework for readers to connect new information with their existing knowledge. With narrative texts as material and used as a medium for electronic comics, narrative texts not only provide entertainment but are also an effective tool in developing reading comprehension skills.

Then the last strength is that electronic comics can create more independent and interactive learning, following the principles of student-centred learning. This is also in line with research by Dewi Nopita (2022), which emphasises that electronic comics are not only interesting and motivating for students, but also provide opportunities for independent learning with minimal teacher intervention.

However, despite the benefits of digital comics, several shortcomings and challenges must be faced. As explained earlier, the weaknesses of access to technology are still an obstacle for some students, especially for those who do not have adequate devices such as smartphones, tablets, or laptops. This creates a gap in learning opportunities, where students with access to technological devices will find it easier to take advantage of digital learning. In contrast, students without access will be left behind. In addition, the challenge of distraction or interference from other applications on digital devices also needs to be considered. When students use devices such as smartphones or laptops to access digital comics, they are often tempted to open other applications, such as social media or games, which can distract them from learning activities.

## Conclusion

In conclusion, this research highlights the process of creating electronic comics as learning materials through three main phases: Analysis, Design and Development, and Evaluation. The Analysis phase revealed that the lack of varied learning materials contributed to students' low interest in reading English texts, thus prompting the development of electronic comics as a more engaging alternative. During the Design and Development phase, researchers created and validated two narrative texts, turning them into digital comics. The final Evaluation phase involved classroom trials, where students showed increased interest and better understanding of the narrative material. Overall, electronic comics proved to be a flexible and accessible tool that can be used on digital devices, despite some challenges such as limited access to technology and distractions from other applications.

In conclusion, this study shows that a lack of variety in teaching materials can reduce students' interest in reading, especially in English texts. Therefore, it is recommended that: Researchers develop other digital materials, find solutions to technological access limitations, and explore the most effective forms of comics and narrative texts. The second issue concerns teachers. Teachers are expected to consider using electronic comics in their daily teaching as supplementary material to improve students' reading comprehension. Teachers can use electronic comics at the beginning of a lesson as a warm-up exercise for reading. Furthermore, teachers need to teach students how to use digital devices wisely to minimise distractions from other applications and monitor their use during lessons. Participating in learning technology training will also help teachers maximise the use of electronic comics and other technology-based materials. For students, it is recommended to use digital comics to aid comprehension, minimise distractions during learning, and provide feedback to teachers to optimise educational media.

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