



Design of 2D Animation as an Educational Medium to Increase Saving Interest of Elementary School Students at SD Negeri 2 Candimas, South Lampung

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ABSTRACT

This study aims to design and develop animation-based educational media as a means to support more interactive and engaging learning. The background of this research is based on the low learning interest of students when using only conventional methods such as lectures and static media. The method employed is Research and Development (R&D) with a multimedia design model, which includes the stages of analysis, design, production, and testing. The development process involves scriptwriting, character design, animation production, and integration into the educational media format. Validation by content and media experts indicated that the designed educational animation is highly feasible for use, with a feasibility percentage above 80%. Limited trials with students showed that this media can enhance learning interest, student engagement, and understanding of the learning material. Therefore, animation can be considered an innovative alternative learning medium to support the improvement of education quality.

1. Introduction

The rapid growth of the global economy requires people to be more cautious in managing finances. In Indonesia, money is generally distributed through consumption, savings, and investment (Florensa et al., 2024). Financial literacy education is therefore essential to raise awareness and provide deeper understanding of wise money management tailored to individual needs. It should begin in childhood, especially at the elementary school level. Teaching financial concepts early not only supports future financial well-being (Fajriah et al., 2024). Also strengthens children's knowledge and understanding. Since children's cognitive abilities are still developing, this stage is the most effective period for introducing financial literacy, making it necessary to integrate it into the school curriculum (Motimona & Maryatun, 2023). Financial literacy cultivates financial mindset and intelligence while motivating people to plan and manage their finances. One important form of financial literacy is introducing the habit of saving to children from an early age.

Saving is a valuable habit passed from parents to children (Doha et al., 2024). Teaching children to save fosters frugality, supports future financial prosperity, and boosts motivation, happiness, and personal growth. A strong saving spirit encourages students to actively practice saving. The lack of saving and frugal habits among children is largely due to limited parental involvement in financial literacy education. As a result, money is often spent on snacks and online games, preventing the development

of frugal behavior from an early age. Raising awareness requires more than advice it needs persuasive educational media with engaging visuals to attract children and instill the importance of saving from a young age. In the context of globalization and the advancement of information technology, animation media is considered an effective educational tool to enhance children's interest and understanding of the concept of saving (Melati et al., 2023). Therefore, this study is expected to contribute positively to efforts in improving financial literacy among children in Indonesia. The use of appropriate learning media not only helps teachers deliver ideas effectively but also stimulates students' interest and motivation to better understand the concepts being taught.

Animation on saving interest can begin by illustrating its importance for the future. Teaching children to save through fun animation is an effective way to introduce money management and financial responsibility (Sarinastiti et al., 2023). Animated videos are more easily understood than other media, influencing students' thoughts, emotions, and psychology (Damayanti et al., 2020). Designing educational animation requires more than creativity; unlike entertainment, it must present knowledge through dynamic visuals that align with cognitive information processing (Laiya et al., 2023). Each school applies different saving methods depending on agreements between the school and parents. At State Elementary School 2 Candimas, there are two types of savings: student savings and personal savings. Student savings are mandatory for grades 1, 2, and 3, with funds deposited directly into Bank Lampung every Thursday. Meanwhile, personal savings are voluntary, allowing students the freedom to manage their own money. Initial observations at State Elementary School 2 Candimas revealed that students in grades 4, 5, and 6 tend to spend their pocket money daily on snacks, indicating a lack of awareness about frugal living and saving. Attractive educational media have not yet been implemented by teachers at State Elementary School 2 Candimas, mainly due to limited knowledge of engaging learning media, particularly in the form of 2D animation. Animation can be used to present concepts such as money, saving, and financial planning in a way that is easily understood by children.

Concrete visualizations like piggy banks and mini-banks help children grasp that saving has value for the future. This study aims to examine students' interest in saving at the school. Based on this background, the author took the initiative to develop an educational medium that has the potential to foster students' saving interest from an early age. The design of 2D animated educational media offers the benefit of integrating technology into education, making schools appear more modern and relevant. It can serve as an added value for institutions in providing creative learning methods that keep pace with current developments. For elementary school students, it helps foster an interest in saving to anticipate future needs, avoid debt, and promote a frugal lifestyle.

2. Method

Production stage includes planning, which begins with data collection and analysis using a qualitative descriptive approach. This method aims to describe and capture phenomena in depth through non-numerical data obtained from observations, interviews, and a 5W+1H analysis, without manipulating variables (Moussadecq et al., 2023). Afterward, the animation project was carried out through three main stages. The pre-production stage consisted of formulating the concept. The production stage involved the creation of visual elements and animation assets. Finally, the post-production stage included editing, rendering, and trial testing. These stages are further elaborated in the results and discussion section.

2.1. Observation

Observation is a research method carried out through in-depth monitoring of a particular condition or situation. In this study, the author conducted direct observation at the research site to obtain the required data (Novica & Hidayat, 2019), namely at Public Elementary School 2 Candimas, South Lampung.



Figure 1. Student Activities at Public Elementary School 2 Candimas

2.2. Interview

Interview is a conversation conducted for a specific purpose. It involves two parties: the interviewer, who asks questions, and the interviewee, who provides answers (Karmeliya Firdaus & Ayu Puteri Hadayani, 2021). The author conducted an interview with an elementary school teacher at Public Elementary School 2 Candimas, Mrs. Lela Safitri, on Monday, November 4, 2024. From this interview, the author obtained information that there is an agreement between the school and parents at Public Elementary School 2 Candimas, Natar, stating that student savings are mandatory for grades 1, 2, and 3, with the funds deposited directly into Bank Lampung every Thursday. Unfortunately, many students in grades 4, 5, and 6 disagreed with the practice of saving at the bank. The teacher explained that these students tend to spend their pocket money on snacks rather than setting it aside for savings.

2.3. Problem Analysis with the 5W + 1H Approach

The 5W + 1H problem analysis approach is a method used to explore information in a complete and systematic manner. 5W stands for What, Who, Where, When, and Why, while 1H stands for How. This method is often applied in news writing, reports, or problem analysis. These questions help uncover what is happening or being discussed. The results of the problem analysis are presented in Table 1 as follows:

Table 2. Results of 5W+1H Analysis

5W + 1H	Question	Answer
What ?	What is the problem that requires 2D animation?	The lack of interest in saving among children leads to the absence of frugal habits from an early age. To raise children's awareness of the importance of saving, giving advice alone is not sufficient.
Why ?	Why should 2D animation media be created?	Animated visual media is more effective in attracting attention and simplifying the delivery of messages to elementary school children.
Who ?	Who is the target audience?	Children, particularly elementary school students, as they are the group that needs to be educated about the importance of saving from an early age.
When ?	When did the problem occur?	Many children do not have an interest in saving and are unaware of its importance. This is directly related to future problems, such as a lack of knowledge about managing finances at SDN 2 Candimas, where many students still do not understand the benefits of saving.
How ?	How is the problem solved?	By designing an animation that educates children about the importance of saving from an early age in elementary school.

Based on the analysis, the identified problem is the lack of knowledge about the benefits and importance of saving from an early age. Saving has future goals and advantages, especially in facing risks. Therefore, educators must choose appropriate learning media, as the right media not only helps deliver ideas but also stimulates students' interest and motivation to understand them. Based on the analysis conducted, the proposed solution is the design of a main medium in the form of 2D animation as an educational tool and problem-solving approach. In addition to the main medium, supporting media such as stickers, tote bags, and piggy banks are also designed to reinforce the message about the low interest in saving among elementary school students. This educational campaign will also be expanded through above-the-line media, particularly social media platforms like Instagram, to reach a wider audience.

2.4. Design Strategy

The design strategy focuses on the target audience, communication goals, and creative strategy. The target audience is segmented into three aspects: demographically, children aged 9–12 years, both boys and girls, from middle social class; geographically, children in Candimas Village, Natar District, South Lampung Regency, Lampung Province; and psychographically, children who are curious about animation media, enjoy engaging visuals, cheerful characters, and need a better understanding of the importance of saving from an early age for a more secure future. The communication goal of this animation design as an educational medium is to educate children, especially students of Elementary School State 2 Candimas, about the benefits of saving, while also being accessible to a wider audience interested in learning the concept of saving. The creative strategy involves two main components: message content and message form. The core message highlights the importance of financial literacy and saving habits for children aged 9 and 12, emphasizing that setting aside money regularly can lead to meaningful outcomes. This message will be delivered in a simple, engaging, and child-friendly way. In terms of form, the message will be conveyed visually and interactively through appealing 2D animation with cheerful, cute, and charming illustrations to maintain children's interest. The characters, designed in a “chibi” cartoon style, will be funny, recognizable, and relatable for elementary school children, each with distinct personalities that make the storyline more engaging. The dialogues will use simple, easy-to-understand language with a fun teaching approach, where the main character directly encourages children to understand financial literacy and develop the habit of saving from an early age.

3. Results and Discussion

3.1. Result

3.1.1. Pra Production

The 2D animation design program carries the theme of improving financial literacy among elementary school children through engaging and interactive educational media, as children at this stage are in the concrete cognitive phase and require visual, attractive, and easy-to-understand learning tools, making animation the right choice. The concept incorporates with mind mapping is a visual technique for organizing information by placing one main idea at the center and branching out into subideas, keywords, images, or symbols. It helps the brain work more effectively, boosts memory, creativity, and understanding, and makes planning and problem solving easier by presenting ideas in a structured yet flexible way. (Moussadecq et al., 2024). Mapping as a method to enhance creativity, memory, and collaboration while clarifying learning objectives, and a moodboard to guide the visual style and atmosphere of the project.

A moodboard is a visual collection of images, colors, text, typography, and design elements arranged to represent an idea, concept, mood, or style. It serves as a visual guide for designers or creative teams to ensure clarity, consistency, and alignment with the intended concept. The animation is titled “Menabung Bersama Nana dan Abra: Rahasia Menuju Impian”, reflecting the magic of simple saving habits that teach discipline, patience, and the benefits of saving. The animation runs for 1 minute and 50 seconds, a duration considered effective for delivering educational messages clearly and engagingly without losing children's focus. The message is presented emotionally, using everyday life elements to build closeness with the audience, supported by bright, expressive, and imaginative visuals. The storyline follows Nana, a cheerful girl who longs for a rabbit-shaped bag, and her patient brother Abra,

who introduces her to a magical piggy bank given by their grandmother. Through saving, they learn patience, cooperation, and the joy of achieving dreams, with the climax showing their realization that the true value lies in the saving process itself. Characters are designed in a chibi cartoon style, cheerful and easy for children to recognize, supported by simple, fun dialogues that encourage financial literacy in a natural, non-patronizing way. The visual style uses contrasting tones, with warm and fresh colors like yellow and red to capture attention, while typography combines friendly Cartoon fonts with bold Sans Serif to ensure readability and appeal for children aged 9 and 12 years. This design ensures that the animation is not only visually captivating but also educational, inspiring children to develop the habit of saving from an early age.

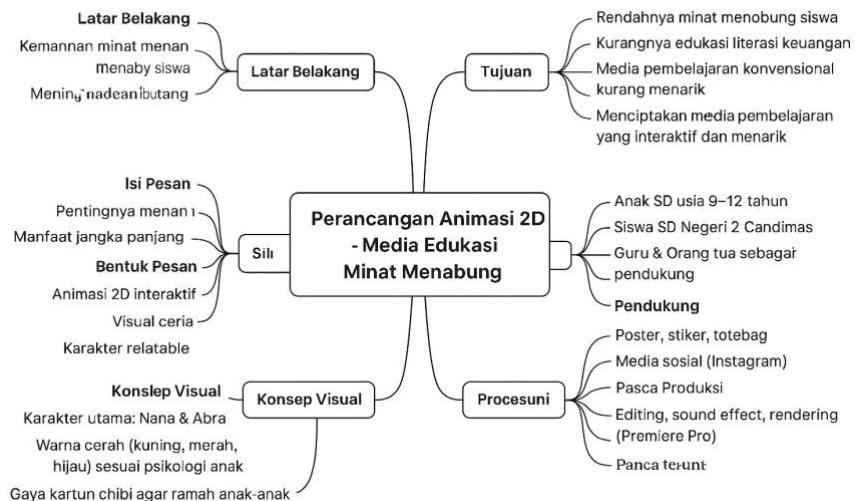


Figure 3. Mind Mapping of Saving Educational Animation



Figure 4. Mood Board of Saving Educational Animation

3.1.2. Production

The production stages begin with the creation of the storyline, storyboard, and sketches, which are explained from Storyline and Storyboard. The storyline is the sequence of events or plot that serves as the main framework of a work, such as a film, animation, book, or video (Salahuddin, 2020). In this project, the storyline illustrates the series of events from the beginning to the end of the animation, including the conflicts faced, character development, and the resolution of problems. Meanwhile, the storyboard is a sequence of drawings or sketches arranged in order to design the visual flow of a story, video, film, or animation (Januari & Yuliansyah, 2018). Each scene in this saving educational animation is visualized in a structured manner and is usually accompanied by additional notes, such as dialogue, camera movements, or sound directions in the storyboard. The Storyline of the animation is “Menabung Bersama Nana Dan Abra; Rahasia Menuju Impian”.

The title was chosen to illustrate the small wonders that can arise from the simple habit of saving and to introduce new experiences about the importance of discipline, patience, and the benefits of saving to achieve dreams alongside the characters Nana and Abra. The animation has a duration of 1 minute and 50 seconds, designed to deliver concise yet meaningful educational content that is easy to

understand, engaging, and able to maintain children's attention without causing boredom. The message delivery strategy uses an emotional approach and elements from children's daily lives to build a sense of closeness with elementary school audiences. The visual style is intentionally bright, expressive, and imaginative to attract attention and sustain concentration, while the storyline is delivered with a positive and inspiring tone through relatable main characters. The concept of saving is woven naturally into the plot through light conflicts and simple resolutions, making the narrative feel natural rather than didactic. The story begins with Nana, a cheerful girl who enjoys buying toys, and her calmer sibling Abra,

Who prefers saving, playing happily together when Nana suddenly longs for a rabbit-shaped bag she sees another child carrying but cannot afford. At home, Abra remembers a magical piggy bank given by their grandmother, who once said that if they saved diligently and patiently, the piggy bank would grant one wish. Inspired, Nana and Abra begin their saving mission, collecting coins through small daily actions such as recycling bottles, with every deposit producing a magical "ting!" sound. After days of saving, the piggy bank glows and speaks, rewarding their patience and hard work by granting their wish. In the end, Nana joyfully obtains her dream bag, realizing that the true value lies not only in the object but also in the process of saving, working together, and learning patience.

The synopsis emphasizes Nana as a lively and determined girl with big dreams, yet often hindered by limitations, and Abra as her supportive, patient, and disciplined older sibling who guides her toward good habits. The character descriptions further reinforce their traits Nana as spirited but challenged by obstacles, and Abra as brave, patient, and encouraging. Together, they embody the moral of the story that persistence and saving lead not only to achieving personal goals but also to valuable life lessons. The formulated storyline was converted into a storyboard to serve as a guide during the production process. The storyboard is presented in Figure 5, as follows.



Figure 5. Storyboard of Saving Educational Animation

3.1.3. Production

The production stage began with the creation of sketches. In creating the character sketches for Nana and Abra, the author carefully planned and designed illustrations that were aligned with the predetermined storyline and storyboard. The sketching process served as a crucial foundation for defining the characters' physical appearance, personality, movements, and expressions, ensuring they conveyed emotions and messages effectively to the audience. These early sketches also played an important role in establishing the visual tone of the animation, from consistency in style to the overall mood that supports the educational theme. The asset development was carried out using Medibang Paint Pro. This software its flexible brush tools, layering features, and ease of use for creating clean digital sketches. Through this process, the characters were visualized with clear outlines, playful proportions, and expressive details that highlight their personalities. The sketches also define the visual style, mood, and consistency of the animation, acting as a guide for the next stages of coloring, asset refinement, and final animation production.



Figure 6. Animation Production with MediBang Pro

3.1.4. Post Production

The post production stage is the final phase in the animation-making process. At this stage, the arranged and animated sequences are exported in PSD rendering format. Subsequently, the final editing process, such as adding sound, transitions, and visual effects, is carried out using Adobe Premiere Pro software. For the animation editing and rendering stage, transitions, background music, sound effects, and voice-over were added using Adobe Premiere Pro to support the design process. At this stage, the overall flow of the animation was refined to ensure smooth scene changes, an appropriate emotional tone through sound design, and clear narration delivered by the voice-over. The integration of these elements not only enhanced the visual quality but also reinforced the message and educational purpose of the animation, making it more engaging and effective for the target audience. Once these processes were completed, the final step was rendering, in which the animation was exported into a finished video format ready for presentation and distribution.

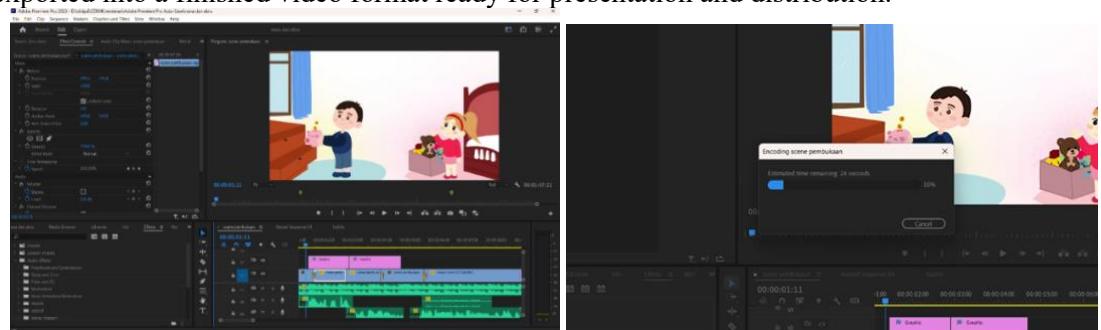


Figure 7. Editing Animation With Adobe Primera

A trial screening of the animation video “Saving Together with Nana and Abra” was conducted at SD Negeri 2 Candimas to evaluate its effectiveness as an educational medium. The screening was carried out in a classroom setting with the participation of fifth grade students. During the activity, the students watched the entire animation and were observed for their level of engagement, attention, and emotional responses throughout the viewing. After the screening, the students were asked to share their opinions and provide feedback on various aspects of the video, such as the storyline, illustration style, color choices, background music, and overall message. This trial served as an important step in assessing how well the animation could capture students’ interest and deliver the intended educational message about the importance of saving.



Figure 8. Animation Trial at School and Post-Test Completion

To evaluate student responses to “Menabung Bersama Nana dan Abra” and to gather feedback for future improvements, a feasibility test was carried out by distributing a post-test to 25 fifth-grade students of SD Negeri 2 Candimas. The post-test consisted of eight questions designed to assess how well the animation aligned with students’ understanding. The questions addressed several aspects of the educational animation, including illustration style, color, overall appearance, impact on students, and suggestions for improvement. Responses were rated using a simple scale, and the overall results showed average scores of A = 14.25%, B = 6.625%, and C = 3.125% across all questions. These findings indicate that the majority of students were able to engage with the animation effectively and demonstrated a good level of comprehension of its content.

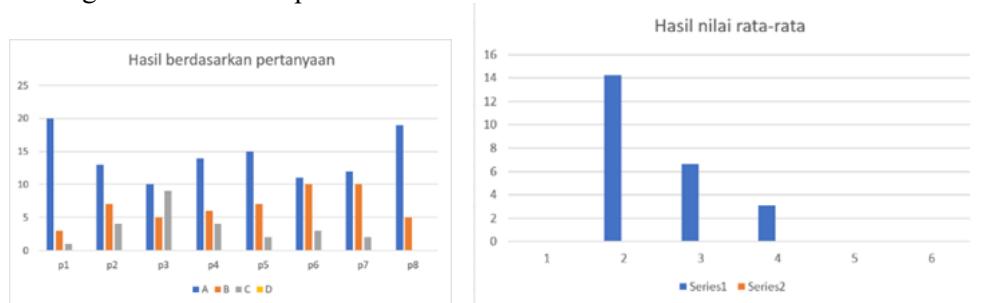


Figure 9. Results of the Questionnaire and Average Scores

Furthermore, the positive response toward elements such as the illustration style and use of color suggests that the visual design successfully captured the students’ attention, which is crucial in maintaining engagement in educational media. Although there is still room for improvement based on the feedback provided, the data supports the conclusion that the animation is a feasible and effective learning medium. The insights gained from this trial serve as an important foundation for refining both the narrative and technical aspects of future animations to better support student learning outcomes.

3.2. Discussion

The final output of this project is a completed 2D animation entitled “Menabung Bersama Nana Dan Abra; Rahasia Menuju Impian”. The animation was developed through the full stages of production pre-production, production, and post-production and is now ready to be presented and utilized for various purposes, such as publication, presentations, media distribution, and as an educational tool aligned with the project’s objectives.

Designed as an educational medium, the animation aims to raise awareness among elementary school students about the importance of saving. The video, with a duration of 1 minute and 48 seconds, combines visual illustrations, voice over narration, and background music to create an educational yet communicative atmosphere. The production process employed Medibang Paint Pro for illustration, Adobe Photoshop for frame-by-frame animation, and Adobe Premiere Pro for final editing and audio processing. To ensure the quality of the animation, various supporting media and tools were used throughout the design process. On the hardware side, a laptop with adequate graphic specifications was utilized to handle both design and rendering processes, while a pen tablet facilitated the creation of character and background illustrations.

A headset and microphone were employed for recording the voice over to maintain clear and high-quality audio. In addition to the animation as the main media, several supporting and promotional materials were designed to strengthen the educational message and make the concept of saving more appealing and memorable for children. The final work results can be explained based on Table 2, as follows.

Table 2. Explanation of the Final Work Scene Descriptions

No	Scene	Duration	Description
1.		1,20 second	Introduction of the Characters Nana and Abra
2		1 Second	Abra, who enjoys saving diligently in order to buy toys.
3		1 Second	Nana, who enjoys buying dolls.
4		1,5 Second	Nana is writing
5		2 Second	Abra is playing with his favorite toy.
6		2 Second	Tagline: Saving Together with Nana and Abra
7		6 Second	Nana and Abra are depicted playing together in the park
8		7 Second	Nana notices another child carrying a rabbit-shaped bag, and she wishes to have one like it.
9		3 Second	Nana And Abra's House
10		7 Second	Abra searches for a piggy bank.
11		1 Second	The piggy bank is finally discovered.

12		1 Second	Nana is peeking at Abra.
13		1,5 Second	Abra thinks back to the time when his grandmother gave him the piggy bank.
13		8 Second	Grandmother gives a piggy bank to Abra.
14		6 Second	Abra gives the piggy bank to Nana.
15		6,2 Second	Will saving money help Nana get the rabbit-shaped bag she dreams of ?
16		5 Second	How will Nana be able to earn money ?
17		5 Second	Nana explains that she can get money from collecting her used drinking bottles.
18		4 Second	She puts them into the trash bin, which magically turns them into coins.
19		3 Second	Nana is putting a bottle inside.
20		2 Second	A coin emerges from the box.
21		2 Second	Nana is saving money.

22		4 Second	Nana is given money by her mother.
23		3 Second	Nana receives money from her mother to save.
24		2 Second	Nana's piggy bank is already full.
25		2,5 Second	Can Nana now buy the rabbit bag she likes?
26		5,3 Second	Finally, Nana can buy the rabbit bag she wanted.

Among the supporting media, a tumbler featuring the tagline “*Menabung Bersama Nana Dan Abra; Rahasia Menuju Impian*” was developed as both a promotional item and an educational tool. Designed with cheerful illustrations and a short motivational message about saving, the tumbler not only functions as an attractive visual product but also encourages children to adopt frugal and environmentally friendly habits. Similarly, a piggy bank in the shape of a pig was introduced as a practical medium to motivate children to start saving in an engaging and enjoyable way. With its playful design, the piggy bank fosters enthusiasm and gives children a tangible method to collect their own money, reinforcing the practice of saving through direct experience. Another supporting medium includes stickers featuring the Nana and Abra characters. These stickers can be placed on books, bags, or pencil cases, ensuring that children are constantly reminded of the importance of saving in a fun and visually engaging manner.



Figure 10. Supporting Media for Educational Animation on Saving for Children

4. Conclusions

The 2D animation “*Menabung Bersama Nana Dan Abra; Rahasia Menuju Impian*”, designed as an educational medium at SD Negeri 2 Candimas, South Lampung, was developed in response to students’ low interest in saving caused by limited early financial literacy education. By using engaging visuals, relatable characters, and simple interactive storytelling, the animation effectively encouraged children aged 9–12 to understand and practice saving. Questionnaire results showed that most respondents considered the animation easy to understand, informative, and appealing, with a 59.38% average

positive rating, highlighting its potential to deliver messages more persuasively than conventional methods.

Beyond entertainment, the animation functions as a creative tool for improving financial literacy and fostering saving habits from an early age. Future improvements include expanding content, enhancing visual and audio quality, testing with more diverse audiences, and ensuring continuous updates. With sustained development, the animation is expected to serve as a widely useful educational medium for children.

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