

## EXTENDED ABSTRACT

### THE EFFECTIVENESS OF THE SUSTAINABLE LIVING LIFESTYLE CAMPAIGN FOR CHILDREN WITH SPECIAL NEEDS IN INCLUSIVE SCHOOLS USING ANIMATED VIDEO MEDIA

Callista Iola Locita

SMK N 11 Semarang, Animation Department, Semarang, Indonesia (iolacallista@gmail.com)

**Abstract.** In the midst of the threat of global warning which is a common problem throughout the world, humans are trying to reduce the rate of global warning by changing lifestyles which are often called sustainable lifestyles. The low awareness about sustainable lifestyles among children, both normal children and children with special needs, is caused by a lack of stimulus about the importance of sustainable lifestyles from adults. Based on previous research, the aim of this research is to create animated videos with the theme of sustainable living that can be used to teach children with special needs and determine the effectiveness of animated video media for sustainable living on children with special needs in inclusive schools. It is hoped that this development research will be able to help teachers instill sustainable living behavior in children with special needs through animated video media. To determine the accuracy of the material, ease of understanding and the ability of sustainable living animation videos to be applicable to children with special needs, an expert validation method using a questionnaire was used. The quality of the animated video media was based on the results of the development that had been carried out and the score was obtained. The initial analysis for need analysis used a pre-test and post-test to find out students' understanding of sustainable living lifestyle. The result of the study According to experts, 83.3% rated the material in this video as very appropriate to the theme of sustainable living. 100% of experts said that this animated video was easy to understand for students in grades 7-12 with special needs and 83.3% of experts assessed that this video could be enough to increase awareness of students with special needs at PKBM Lentera about sustainable living. The results of the students' pre-test and post-test analysis showed that there was an increase in the understanding of sustainable living, the goals, the attitudes that must be developed, the perception of the ease of living a sustainable life, In the end, children can identify which are sustainable living attitudes and the results are better during the post test.

**Keyword:** *sustainable lifestyles, children with special needs, animation videos*

#### 1. Introduction

In the midst of the threat of global warning which is a common problem throughout the world, humans are trying to reduce the rate of global warning by changing lifestyles which are often called sustainable lifestyles. In the context of environmental conservation, a sustainable lifestyle can be defined as an environmentally friendly lifestyle that tries to limit the use of earth's resources and products that have a bad impact on the environment. To make changes to sustainable lifestyle habits, there needs to be awareness and stimulus to reduce energy use and other habits that do not burden the environment.

The low awareness about sustainable lifestyles among children, both normal children and children with special needs, is caused by a lack of stimulus about the importance of sustainable lifestyles from adults. Apart from that, Children tend to use electrical energy excessively and it is not useful. A problem that often occurs in society and children is a lack of knowledge about the importance of electrical energy-saving behavior so that children assume that energy-saving behavior is not important and will reduce comfort (F. I. R. Dewi et al., 2021). In daily life, children, both normal children and children with special needs, are often seen as

not making an important contribution to efforts to reduce global warming with a sustainable lifestyle, even though on the contrary they have an important role in realizing sustainable living in their environment. Many parents try to accommodate their children's needs by providing comfort for them, where these children have limitations in daily life, so parents often ignore the importance of living sustainably for the sake of children's comfort, for example by turning on the AC all day to prevent children from having tantrums, using vehicles. privately rather than using school pick-up and drop-off transportation or public transportation to avoid children having tantrums in public places and many other reasons. Therefore, it is important to campaign on the importance of sustainable living for children, especially children with special needs, so that awareness arises to contribute to sustainable living.

An inclusive school is a school for children with special needs that allows children to have the opportunity to learn like a normal school. Inclusive schools can be attended by children with special needs, such as the blind, deaf, quadriplegic, speech impaired, learning difficulties, special intelligence, and hearing impaired. Inclusive schools have many advantages that can support the continuity of education for children with special needs. Inclusive schools provide opportunities for children with special needs to learn and interact with regular students so that they can interact naturally with each other in accordance with the demands of life in society. However, it is quite difficult for children with special needs to find a formal school that can accommodate their needs. Therefore, many children with special needs attend special schools or PKBM. The Community Learning Activity

Center, abbreviated as PKBM, is an institution formed by the community for people engaged in the field of Non-Formal education.

The development of information and communication technology (ICT) in the industrial revolution 4.0 era has brought changes to various aspects of human life. ICT media is widely used to improve various aspects of social education in learning. The use of ICT in education can be a strategic tool in teaching students' social education, including changing students' thinking patterns, behavior and actions (Pebriana, 2017). Currently, there are many ICT-based applications and media that can be used as learning tools, one of which is animated learning videos. Learning videos can significantly increase students' enthusiasm for learning. Wuryanti & Kartowagiran, (2016), conducted research aimed at (1) producing learning media; and (2) describe the effectiveness of animated video media to increase learning motivation and hard work character of fifth graders of SD Gugus Sodo, Paliyan District. This research and development draws on the ten steps developed by Borg & Gall. The development design is carried out from the first to the ninth step, namely: (1) preliminary study; (2) planning; (3) initial product development; (4) initial trial; (5) initial product revision; (6) field trials; (7) revision of the results of field trials; (8) operational field trials; and (9) final product revision. The product trial uses a quasi-experimental technique to test the product it has developed. The results showed that there was a significant difference in the score of learning motivation and the character of students' hard work between before and after using animated video media in learning. In line with previous research,

Kurniawati, et al (2019) also investigated the implementation of learning strategies and developing integrated animation video learning media on the value

of decent and effective independent characters in PAUD for the material for the theme of My Needs, Sub-theme of Hygiene. The type of research used by the researcher is development research using the ADHIE model. Data were analyzed using qualitative and quantitative methods. The results of the field test (large group test) totaling 20 children got very decent results. So cooperative learning strategies and animated video media are very feasible and effective to use in learning.

Based on previous research, the aim of this research is to create animated videos with the theme of sustainable living that can be used to teach children with special needs and determine the effectiveness of animated video media for sustainable living on children with special needs in inclusive schools . It is hoped that this development research will be able to help teachers instill sustainable living behavior in children with special needs through animated video media.

## **2. Design of the Research**

The research design uses a qualitative descriptive method which refers to the steps developed by Borg & Gall. The development design includes nine steps, namely: (1) preliminary study; (2) planning; (3) initial product development; (4) initial field trials; (5) initial product revision; (6) field trials; (7) revision of field test products; (8) operational field trials; (9) and final product revision.

Based on preliminary studies, students in grades 7-11 of PKBM Lentera, they like watching animated cartoon films. Apart from that, they have never heard of the concept of sustainable living. They also don't understand what must be done to create a sustainable life. Based on the preliminary study, it can be concluded that teachers need animated video media to improve understanding about how to live a sustainable life

### *2.1. Subject of the Research*

This research was conducted at PKBM Lentera Semarang City. PKBM Lentera is a non-formal educational institution that specializes as an inclusive educational institution for children with special needs. In the expert assessment, those who assessed whether this video was suitable for testing were 6 PKBM Lentera teachers. Meanwhile, students were tested for the effectiveness of this animated video 7-12 grade students of PKBM Lentera. Most students with special needs here fall into the categories of autism and learning difficulties. Even though in this inclusive school there are several types of children with special needs, from preliminary studies they have one thing in common, namely that they like watching animated films which they often call cartoon films.

### *2.2 Data of the Research*

The data in this research consists of 2 kinds, namely primary data and secondary data. Primary data in the form of interviews, observations, and questionnaires. secondary data in the form of literature study which is used as the theoretical basis for this research.

### *2.3 Techniques for Data Analysis*

To determine the accuracy of the material, ease of understanding and the ability of sustainable living animation videos to be applicable to children with special needs, an expert validation method using a questionnaire was used. The quality of the animated video media was based on the results of the development that had been carried out and the score was obtained.

The initial analysis for need analysis used a pre-test and post-test to find out students' understanding of sustainable living lifestyle, then the data in the form of numbers was converted into qualitative data with a scale of three

## **Table 1. Reference Conversion Score Scale Three**

Score	Categories
$X + 0.6 \times S_{bi} < X \leq X_i + 1.8 \times S_{bi}$	Good
$X - 0.6 \times S_{bi} < X \leq X_i + 0.6 \times S_{bi}$	Enough
$X - 1.8 \times S_{bi} < X \leq X_i - 0.6 \times S_{bi}$	Less

Note:

$X_i$  : Ideal Average =  $\frac{1}{2}$  (maximum score + minimum ideal score)

$S_{bi}$ : Ideal Standard Deviation =  $\frac{1}{6}$  (maximum score – minimum score)

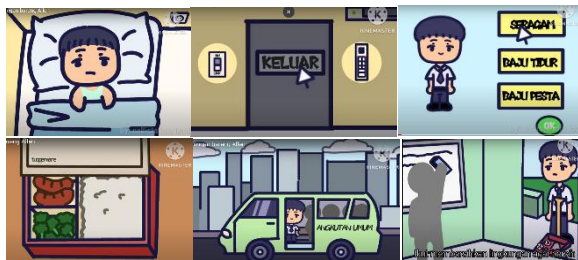
$X$  : Score obtained

To test whether there are differences in the character of cooperation and help before and after the animated video media uses the comparative analysis method of pre-test and post-test results.

### 3. Analysis and Discussion

#### 3.1 Animated Video Design

Animated videos with the theme of sustainable living were made taking into account the ease of understanding for children with the students with special needs so that it is expected to be effectively used to understand cooperation and mutual help materials. Animated videos were made with the help of mobile devices, the Ibis X Paint and KinMaster applications. The video was 2.46 minutes long, so it is considered still below the time limit for the concentration ability of students with special needs



**Figure 1.** Snippet Video of Sustainable Living Lifestyle Video Animation

The storyline of the animated video is based on the daily life of Allen, a 7th grade student. He woke up early as usual, then turned off the lights and air conditioning before leaving the room. Before leaving for school, Allen prepares lunch from home with a reusable food container. Then Allen goes to school using public transportation to reduce traffic jams and pollution. After school, Allen also helped clean the classroom before going home.

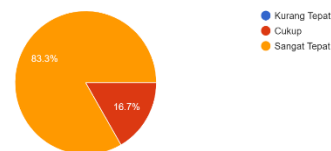
#### 3.2 Expert Validation

To find out what aspects are the advantages and disadvantages of this animated media, the researchers have distributed questionnaires to the teachers. There were 3 questions posed to teachers of PKBM Lentera as experts related to the suitability of animated videos with the theme of sustainable living.

##### 3.2.1 Accuracy of Material Content

The first question asks whether the material in this video is appropriate to the theme of sustainable living

Bagaimana ketepatan isi materi dengan tujuan kampanye Hidup Berkelanjutan bagi Sekolah Inklusi PKBM Lentera?  
6 responses



**Figure 2 .** Diagram and explanation of expert validation about the accuracy of video material with the theme of sustainable living

Of all the teachers who filled out the questionnaire, 16.7% (1 person) rated the material in this video **as quite** appropriate for the theme of sustainable living, while the remaining 83.3% (5 people) rated the

material in this video **as very appropriate** for the theme of sustainable living.

### 3.2.2 Ease of Understanding

The second question asks whether this video will be easy for students with special needs to understand?

Apakah video animasi Hidup Berkelanjutan mudah dipahami oleh siswa?  
6 responses



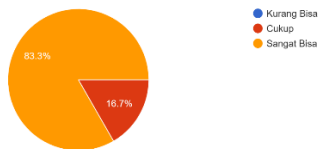
**Figure 3.** Diagram and explanation of expert validation about the Ease of Video Materials for Students to Understand

Of the six teachers who filled out the questionnaire, all 100% said that this animated video was easy to understand for students in grades 7-12 with special needs.

### 3.2.3 Video's ability to increase students' awareness of sustainable living.

The third question asked whether this video could be used to increase awareness of students with special needs at PKBM Lentera about sustainable living.

Menurut anda apakah video animasi Hidup Berkelanjutan dapat meningkatkan kesadaran Siswa mengenai kebiasaan ramah lingkungan?  
6 responses



**Figure 4.** Diagram and explanation of expert validation about Video's ability to increase students' awareness of sustainable living

All of the teachers who filled out the questionnaire, 16.7% (1 person) assessed this video **as Sufficiently** usable to increase awareness of students with special needs at

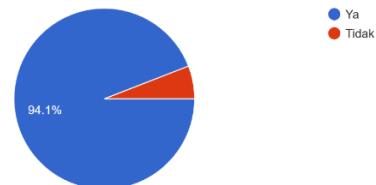
PKBM Lentera about sustainable living, while the remaining 83.3% (5 people) assessed this video as **Very Can** be used to increase awareness students with special needs at PKBM Lentera about sustainable living

### 3.3. Results and Discussion of Student Responses Before (Pre-Test) and After (Post Test) Watching the Sustainable living Video

Questionnaires were given to 7th-12th Grade of PKBM Lentera consisting of pre-test and post-test to determine student understanding before and after seeing the sustainable living video. The questionnaire consists of 5 questions

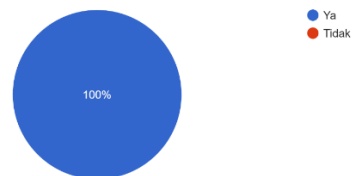
#### 3.3.1 Students' understanding of sustainable living

apakah kamu sudah mengetahui apa itu Hidup Berkelanjutan?  
17 responses



**Figure 5 . Student Understanding** Diagram about sustainable living (Pre Test)

Setelah kamu menonton video "Hidup Berkelanjutan", apakah kamu sudah mengetahui apa itu Hidup Berkelanjutan?  
17 responses

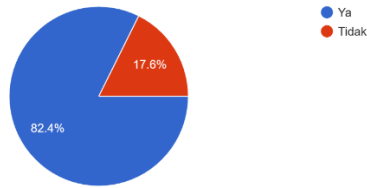


**Figure 6.** Student Understanding Diagram about sustainable living (Post Test)

Figures 5 and 6 show that there was an increase in students' understanding of sustainable living, from only 94.1% who understood sustainable living during the pre-test, increasing to 100% after watching the sustainable living video in the post-test.

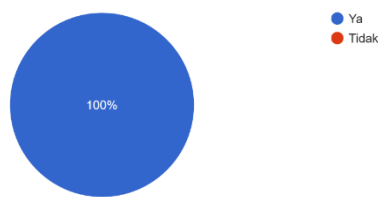
### 3.3.2 Students' understanding of the goals of sustainable living

Apakah kamu mengetahui tujuan dari Hidup Berkelanjutan ?  
17 responses



**Figure 7.** Diagram Students' understanding of the goals of sustainable living (pre test)

Apakah kamu mengetahui tujuan dari Hidup Berkelanjutan ?  
17 responses

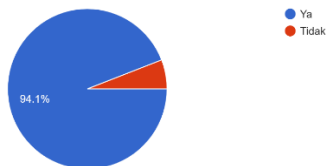


**Figure 8.** Diagram Students' understanding of the goals of sustainable living (Post test)

Figures 7 and 8 show that there was an increase in students' understanding of the goals of sustainable living, which previously only understood 82.4% during the pre-test, increasing to 100% after watching the sustainable living video in the post-test.

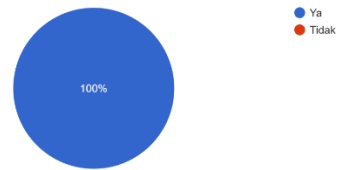
### 3.3.3 Understanding Attitudes that must be developed in sustainable living

Apakah kamu sudah mengetahui sikap apa yang harus dikembangkan dalam Hidup Berkelanjutan ?  
17 responses



**Figure 9.** Diagram Understanding of attitudes that must be developed in sustainable living (Pre Test)

Setelah kamu menonton video Hidup Berkelanjutan, apakah kamu sudah mengetahui sikap apa yang harus dikembangkan dalam Hidup Berkelanjutan ?  
17 responses

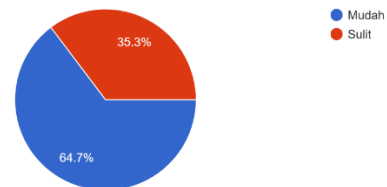


**Figure 10.** Understanding Attitude Diagram that must be developed in sustainable living (Post Test)

Figures 9 and 10 show that there has been an increase in the understanding of attitudes that must be developed in sustainable living, which previously only understood 94.1% during the pre-test, increasing to 100% after watching the sustainable living video.

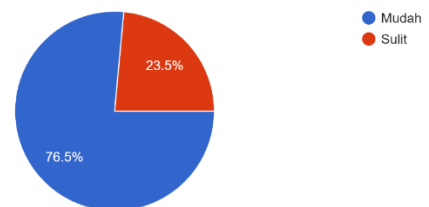
### 3.3.4 Perception of the ease of living a sustainable life

Menurut kamu, menerapkan hidup berkelanjutan itu mudah atau susah?  
17 responses



**Figure 11.** Diagram Perception about the ease of living a sustainable life (Pre Test)

Menurut kamu, menerapkan hidup berkelanjutan itu mudah atau susah?  
17 responses

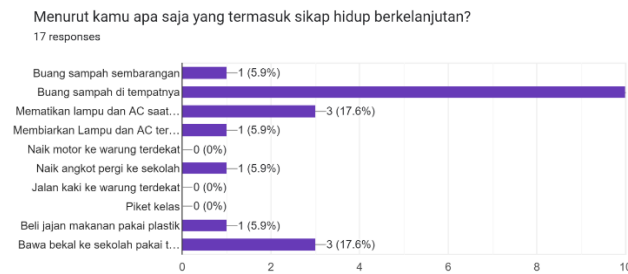


**Figure 12.** Diagram Perception about the ease of living a sustainable life (Post Test)

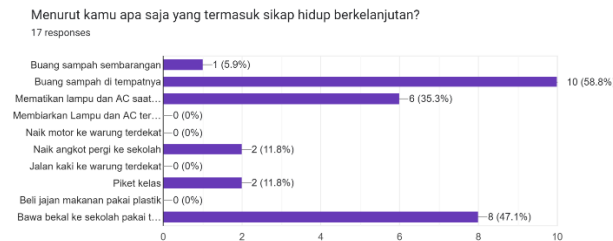
Figures 11 and 12 show that there has been an increase in perceptions about the ease of living a sustainable life, from only 64.7% who thought that living sustainably was easy during the pre-test, increasing to 76.5% after

watching the sustainable living video during the post-test.

### 3.3.5 identify sustainable living attitudes



**Figure 13 .** Sustainable living attitude identification diagram (Pre Test)



**Figure 14 .** Sustainable living attitude identification diagram (Post Test)

Figures 13 and 14 show that during the pre-test several children were able to choose whichever was a sustainable living attitude, however, the percentage of correct answers was still small and there were still answers that were not included in the sustainable living attitude. During the post test there were no wrong answers and the percentage who chose several other correct answers also increased. This shows that after watching the sustainable living video, students with special needs at PKBM Lentera were able to improve their ability to identify sustainable living attitudes

## 4. Conclusion and Suggestions

### 4.1. Conclusion

- a. The continuous live animation video created using the Ibis X Paint and KinMaster has a duration of 2.46 minutes. According to experts, 83.3%

rated the material in this video as **very appropriate** to the theme of sustainable living. 100% of experts said that this animated video was easy to understand for students in grades 7-12 with special needs and 83.3% of experts assessed that this video could be **enough** to increase awareness of students with special needs at PKBM Lentera about sustainable living.

- b. The results of the pre-test and post-test analysis on the effect of animated videos in understanding the concept of positive. Students' understanding of sustainable living, which previously only understood 94.1% during the pre-test, increased to 100% after watching the sustainable living video in the post-test. Students' understanding of the goals of sustainable living, which previously only understood 82.4% during the pre-test, increased to 100% after watching the sustainable living video in the post-test. Understanding the attitudes that must be developed in sustainable living, which previously only understood 94.1% during the pre-test, increased to 100% after watching the sustainable living video. There was an increase in the perception of the ease of living a sustainable life, from only 64.7% who thought that living sustainably was easy during the pre-test, increasing to 76.5% after watching the sustainable living video during the post-test. In the end, children can identify which are sustainable living attitudes and the results are better during the post test.

## 4.2 Suggestions

- a. It is necessary to develop other animated videos that can increase understanding about sustainable living so that children with special needs can adopt sustainable living attitudes.

- b. Assistance is needed from teachers for students to insert sustainable living habits more often, one of which is by playing videos, assigning students to view and resume videos that can help improve student lifestyle in sustainable living
- c. It is necessary to develop other analytical methods to assess lifestyle changes caused by any media.

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