

# Website-Based Flipbook Model on Changes in Adolescents' Dental and Oral Health Care Behavior

Gladys Dian Parenta<sup>1</sup>; Bedjo Santoso<sup>2</sup>; Endah Aryati Eko Ningtyas<sup>3</sup>  
Semarang Ministry of Health Poltekkes  
Jl. Tirto Agung Padalangan Banyumanik, Semarang

**Abstract:-** One of the risk factors that causes high levels of dental and oral problems is behavior. To overcome these problems, media is used as a tool, with a model website-based flipbook. It is hoped that this will be a solution to facilitate the education process to help teenagers improve their dental and oral health maintenance behavior. This research is to produce a website-based flipbook model that is feasible and its application is effective in changing the oral health care behavior of adolescents. The method used in this research is Research and Development (R&D) and the research design used is a Quasy Experiment Pretest-Posttest with a Control Group Design. Research subjects were 2 groups: The intervention of 42 people was modeled website-based flipbook control 40 people were given an animated video on dental and oral health. The research results show that website-based flipbooks are suitable as a model for improving adolescent dental and oral health maintenance behavior with expert validation results: 90.8% and p-value = 0.858. The results of the unpaired test stated that its application was effective in increasing knowledge ( $\Delta 0.001$ ), attitudes ( $\Delta 0.001$ ), actions ( $\Delta 0.001$ ), and reducing debris index scores ( $\Delta 0.010$ ) compared to the control group. The conclusion is the development of the website-based flipbook model and its implementation of effective changes in adolescent dental and oral health maintenance behavior.

**Keywords:-** Website-Based Flipbook, Teenagers, Dental and Oral Health.

## I. INTRODUCTION

Achieving optimal physical health is supported by dental and oral health. Preserving dental and oral health will contribute to raising human resource productivity and quality of life. While maintaining good dental and oral health is crucial to maintaining overall health, it is also a highly troubling issue [1], [2].

The nationwide prevalence of oral dental disorders rose from 25.9% in 2013 to 57.6% in 2018, according to RISKESDAS data. Teeth deterioration, cavities, and illness account for the greatest percentage of dental issues in Indonesia (45.3%, 2018). In the 10–14 year old age group, caries prevalence was 73.4%; in the 15–24 year old age group, it was 75.3%.

The proportion of correct tooth brushing behavior is only 2.8% of the population, while the target for a Caries Free Indonesia by 2030 is for the DMF-T index of children aged 12 to reach 1. In 2018, the average DMF-T index for permanent teeth in Indonesia was 7.1 while for the 12-year age group, it was 1.9. This figure still does not meet the RAN target for Dental and Oral Health Services in 2020-2025, namely a DMF-T index of 4.1 at all ages and a DMF-T index of 1.26 in the 12-year age group [3], [4].

The risk factors that cause high levels of dental and oral problems are stated to be (1) excessive sugar consumption, (2) smoking, (3) alcohol consumption, (4) lack of maintaining dental and oral health, namely poor behavior in maintaining dental and oral health [4]. Behavior is a person's psychological reaction to their environment [5]. Behavior is the action and reaction of an organism to its environment. Behavior will take shape if there is something needed to cause a response, which is called a stimulus [6]. RISKESDAS in 2018 stated that the proportion of cavities or damaged teeth in West Sulawesi was 56.25%, while in Majene Regency it was 55.14%. There were 53.34% in the 10-14 year age group, and 53.88% in the 15-24 year age group [7].

Good dental and oral hygiene may be achieved by behavior and knowledge of maintaining appropriate oral and dental health. One element that affects how someone behaves is knowledge. Lack of understanding will lead to incorrect attitudes and behaviors toward preserving dental health [8].

Oral and dental health are still not major factors in why people seek medical attention. To ensure that the various service initiatives are carried out as efficiently as possible and meet predefined goals and targets, it is necessary to enhance dental and oral health services, particularly promotive and preventive health efforts, boost the capacity of health workers, and improve the quality of existing recording and reporting [9].

Work Which In order to address dental and oral health issues, the government has taken action. Specifically, the UKGS program now promotes dental and oral health. With the assistance of curative measures for children in need of treatment, UKGS (School Dental Health Efforts) is a dental health initiative to maintain and enhance the oral health of students in target schools.

Even though this program has been put into place, a number of issues remain. For example, there is still a shortage and unequal distribution of medical professionals, which leaves less time and opportunity for communication. Conventional media is still used to provide dental health education, but this media still has drawbacks, such as its susceptibility to damage. When there are simply visuals present, the message is not always fully transmitted [10].

At the age of 10-14, dental and oral health problems often occur such as canker sores, cavities, broken teeth, inflammation of the gums, and untidy teeth. So it requires various methods and approaches to produce healthy knowledge, attitudes, and behavior, especially for children's teeth and mouths [1]. There are several approaches to solving this issue, such as using multimedia as a teaching tool [11]. Adolescent dentistry and oral health education will be significantly impacted by the choice of learning resources and media. In order to promote access that is focused on individual health quality by the Industrial Revolution 4.0, educational services on teenage dental and oral health must be enhanced. This means that it must be controlled thoroughly using integrated technology [12].

This research will develop a website-based flipbook model to change oral health maintenance behavior in adolescents. A flipbook is a virtual format for displaying book learning materials. Flipbook is an electronic book developed as a substitute to aid in education. Flipbooks are

electronic books that combine text, images, audio, video, animation, and navigation to create interactive simulations. This feature makes the application more engaging for users and enhances the enjoyment and interest of learning. Flipbooks are a kind of vintage animation where a process is shown on each page that eventually appears to be moving or animated. They are produced from a stack of paper that resembles a thick book [13].

The research team developed a model website-based flipbook in the hopes that it would help streamline the educational process and encourage teenagers to maintain better oral and dental hygiene. While there are many website-based flipbooks used in the education sector, efforts to improve health care, particularly dental and oral health, have not been fully utilized in the health sector.

**II. RESEARCH METHODS AND SAMPLES**

The method used in this research is Research and Development (R&D). This research aims to develop a dental and oral health learning model for adolescents. The R&D method is a research method used to produce certain products and test the effectiveness of these products. The research design used was a Quasy Experiment Pretest-Posttest with a Control Group Design. Research subjects were 2 groups: The intervention of 42 people was modeled website-based flipbook control 40 people were given an animated video on dental and oral health.

**III. RESEARCH RESULT**

➤ *Expert Validation Test Results*

**Table 1 Expert Validation Test Results**

Expert Validation					
Name	N	F (%)	Average	p-value	Category
Health Promotion Expert	25	83	90.8%	0.858	Very Worth It
Media Expert	25	97.5			
Dental and Oral Health Education Expert	25	92			

*\*Interclass Correlation Coefficient*

Based on the results the assessment of 3 expert validators revealed the frequency of data distribution by health promotion experts at 83%, media experts at 97.5%, and dental and oral health education experts at 92%. The average feasibility score is 90.8% with the Very Eligible

category. The results of expert validation show that p-value = 0.858, which means that the website-based flipbook model is worthy as an educational model to improve behavior and maintain adolescent dental and oral health.

➤ *Test the Effectiveness of Adolescent Knowledge*

**Table 2 Effectiveness of Adolescent Knowledge**

Group	Mean±SD Pre-Test	Mean±SD Post-Test	p-value
Test Paired Data*			
Intervention	6.15+0.671	7.20+0.894	0.001
Control	3.95+0.887	4.25+0.786	0.130
Unpaired Data Test Change Value (Δ)** Mean±SD Pre-Post Test			
Intervention	1.05 ± 1.229		0.001
Control	0.30 ± 0.255		

\*Wilcoxon \*\*Mann-Whitney

The efficacy of the test findings on teenage knowledge reveals that the model website-based flipbook successfully enhances adolescents' knowledge of oral and dental health care, as evidenced by the p-value of the intervention group being 0.001 (p<0.05). The model utilized in the control group was ineffective in raising knowledge of maintaining teenage oral health, as indicated by the p-value of the control group's knowledge, which was 0.130 (p>0.05).

According to the effectiveness test results for unpaired data, there is a significant difference in the pre-post-test change value (Δ). The p-value for this test is 0.001 (p<0.05), indicating that the flipbook based on the model website is more effective than the control group in raising adolescents' awareness of maintaining oral health. This is demonstrated by the fact that the intervention group's average change value (Δ) was 1.05 while the control group's was 0.3, indicating that the intervention group's model outperformed the control group's.

➤ *Test the Effectiveness of Adolescent Attitudes*

**Table 3 Effectiveness of Adolescent Attitudes**

Group	Mean±SD Pre-Test	Mean±SD Post-Test	p-value
Test Paired Data*			
Intervention	16.45+1.572	27.85+1.496	0.002
Control	16.25+0.851	16.70+1.218	0.011
Unpaired Data Test Change Value (Δ)** Mean±SD Pre-Post Test			
Intervention	11.4 ± 1.577		0.001
Control	0.45 ± 0.375		

\*Wilcoxon \*\*Mann-Whitney

The model website-based flipbook significantly improves teenagers' attitudes toward preserving their oral and dental health, as evidenced by the effectiveness test of paired data on attitudes, which found that the intervention group's p-value was 0.002 (p<0.05). The model utilized in the control group was successful in enhancing the attitude toward preserving teenage dental and oral health, as evidenced by the p-value for the control group's attitude of 0.011 (p<0.05).

According to the effectiveness test results for unpaired data, there is a significant difference in the pre-post-test change value (Δ). The p-value for this test is 0.001 (p<0.05), indicating that the website-based flipbook model is more effective than the control group in modifying teenagers' attitudes towards maintaining oral health. This is demonstrated by the fact that the control group's model, which had an average change value (Δ) of 0.45, was not as good as the intervention group's, which was 11.4.

➤ *Test the Effectiveness of Adolescent Actions*

**Table 4 The Effectiveness of Teen Actions**

Group	Mean±SD Pre-Test	Mean±SD Post-Test	p-value
Test Paired Data*			
Intervention	4.30 + 1.174	7.90 + 1.971	0.001
Control	3.95 + 0.759	4.20 + 0.696	0.025
Unpaired Data Test Change Value (Δ)**			
Mean±SD			
Pre-Post Test			
Intervention	3.60 ± 1.075		0.001
Control	0.25 ± 0.130		

\*Wilcoxon \*\*Mann-Whitney

The efficacy test of paired data on children's activities reveals that the intervention group's p-value is 0.001 (p<0.05), indicating that the website-based flipbook model significantly enhances teenage dental and oral health maintenance actions. The control group's activities had a p-value of 0.025 (p<0.05), indicating that the model employed was successful in enhancing the dental and oral health maintenance behaviors of teens.

change value (Δ). The p-value for this test is 0.001 (p<0.05), indicating that the website-based flipbook model is more effective than the control group in enhancing the oral and dental health maintenance actions of adolescents. This is demonstrated by the fact that the intervention group's average change value (Δ) was 3.60 and the control group's was 0.25, respectively, better than the model employed in the control group.

According to the effectiveness test results for unpaired data, there is a significant difference in the pre-post-test

➤ *Effectiveness Test Youth Index Debris*

**Table 5 Effectiveness Youth Index Debris**

Group	Mean±SD Pre-Test	Mean±SD Post-Test	p-value
Test Paired Data*			
Intervention	0.764 + 0.496	0.458 + 0.326	0.041
Control	0.532 + 0.218	0.262 + 0.152	0.041
Unpaired Data Test Change Value (Δ)**			
Mean±SD			
Pre-Post Test			
Intervention	0.306 ± 0.206		0.010
Control	0.270 ± 0.191		

\*Wilcoxon \*\*Mann-Whitney

The results of the effectiveness test of paired data on adolescent debris index showed that the p-value of the intervention group was 0.041 (p<0.05), meaning that the model website-based flipbook was effective in reducing juvenile debris index scores. The p-value of the debris index for the control group was 0.041 (p<0.05), meaning that the model used in the control group was effective in reducing the debris index score for teenagers.

group's was 0.270, indicating that the intervention group's model outperformed the control group's.

**IV. DISCUSSION**

➤ *Website-Based Flipbook Model*

After collecting information, it was concluded that learning efforts using appropriate methods were needed to increase teenagers' interest in brushing their teeth and building their independence, and to make this happen, it needed to be supported by a learning environment that could attract their attention. The results of expert validation show that the p-value = 0.858, which indicates that the website-based flip book model is a suitable model for oral health education for teenagers. The expert validation process is important in product/model development to produce products/models that help improve the quality of education.

### ➤ *Teen Knowledge*

According to the findings, the average knowledge score of the teenagers in the control group rose from 3.95 to 4.25, while it climbed for those in the intervention group from 6.15 to 7.20. The efficacy test of unpaired data yielded significantly different results ( $p$ -value  $<0.05$ ) for the pre-post test change value ( $\Delta$ ), indicating that the website-based flipbook model was more successful than the control group in raising teenagers' awareness of oral and dental health maintenance.

Good oral hygiene practices are influenced by knowledge. Because oral and dental health are interdependent and have an impact on physical health, they cannot be isolated from it. An project known as dental and oral health education seeks to alter the behaviors of individuals, communities, or organizations so that people have the information, attitudes, and routines necessary to maintain good oral and dental health. The goal of dental and oral health education is to boost community and individual empowerment in order to raise the standard of dental health going forward. Not only the government, but all parties involved have a responsibility to promote dental health education. By teaching useful skills and offering advice targeted at modifying community attitudes toward increasing awareness of the significance of dental and oral health on an individual, group, and community level, extension can improve community knowledge and capacity [14].

Flipbooks and digital books are a form of virtual presentation of book learning media. With the development of science and technology, the possibility of utilizing modern tools cannot be denied. The learning environment that is expected to create an interesting and enjoyable learning atmosphere and provide learning material easily and efficiently is the use of flipbook media [15]. Flipbook is a development of e-books as an alternative tool to make learning easier. Flipbooks are presented in electronic format which can display interactive simulations by combining text, images, audio, video, animation, and navigation [13].

Most people only realize the importance of health when they are sick. Health depends on a person's daily living behavior. To overcome various existing health problems, health promotion regarding clean and healthy living behavior in adolescents is of course necessary. Health promotion includes monitoring teenagers' clean and healthy living behavior and providing information and techniques for maintaining information.

### ➤ *Adolescent Attitudes*

The average attitude score for teenagers in the intervention group rose from 16.45 to 27.85, whereas it went from 16.25 to 16.70 in the control group, according to the data. The efficacy test of unpaired data yielded a significantly different result ( $\Delta$ ) for the pre-post test change value ( $p$ -value  $<0.05$ ), indicating that the website-based flipbook model was more successful than the control group in modifying teenagers' attitudes toward oral and dental health maintenance.

Each person has a different attitude towards certain things (certain objects). Attitude is a judgment, feeling, or behavior towards a subject. Different attitudes arise from the understanding, experience, and thoughts that a person experiences towards certain objects. Thus, the consequences of an attitude towards a subject can be positive (acceptance) or negative (not accepting). A conditioned reaction to social cues, attitude can be defined as a pattern of conduct, a tendency toward expectancy or preparedness, a propensity to adjust to a social setting, or just an attitude. The tendency for a person to react a specific manner when presented with a stimulus that necessitates a response is known as expected readiness. Behavior related to health protection is determined by attitudes regarding health [16].

The concept of health education focuses on efforts to improve the behavior of the target population in healthy ways, especially cognitive aspects so that the counselor's knowledge of the target population is in line with the health instructor's expectations so that further counseling can be carried out by the planned program. In this study, a website-based flip-book model was proven to be effective in changing adolescents' attitudes towards oral health care [17].

This scientific literacy-based flip-book learning media is in line with Nurwidiyanti's 2024 research which shows the application of learning media to support the learning process of students and teachers and develop students' scientific literacy abilities. Learning media is defined as a tool that supports teaching and learning activities and influences learning situations, learning conditions, and the learning environment created by the teacher. One element that needs to be considered in learning design is the selection or development of a learning environment that is appropriate to the material to be transferred and will attract students' interest in the learning process [18].

Flipbook is a tool that educators use to facilitate communication of non-print book materials with students and acts as an intermediary to facilitate and motivate students to read anytime and anywhere. Flipbook learning media has the characteristic of a navigation function that can move to the next page, so it feels like opening a printed book and is combined with images and text that attract students' interest.

### ➤ *Teen Action*

According to the findings, the mean action score for teenagers in the intervention group rose from 4.30 to 7.90, whereas it went from 3.95 to 4.20 for the control group. The efficacy test of unpaired data yielded significantly different results ( $p$ -value  $<0.05$ ) for the pre-post-test change value ( $\Delta$ ), indicating that the website-based flipbook model was more effective than the control group in encouraging teenagers to maintain their oral and dental health.

Flipbook is a tool that educators use to facilitate communication of non-printed book materials with students and acts as an intermediary to facilitate and motivate students to read anytime and anywhere. Flipbook learning

media has the characteristic of a navigation function that can move to the next page, so it feels like opening a printed book and is combined with images and text that attract students' interest.

In line with research conducted by Setiadi, et al. in 2021, it is proven that learning using online-based flipbook learning media by applying the direct learning model can be said to have increased. The flipbook maker application is explained as software that can be used to create a display of books or other teaching materials into a digital electronic book in the form of a flipbook [19].

Flipbooks have several advantages, including 1) Can be used to convey learning material concisely, easily, and practically; 2) Can be used in any room, whether closed or open; 3) Easy to carry everywhere (moveable); and 4) Can increase student activity and interest in learning.

Considering the many benefits and advantages of using flipbook learning media in this learning activity, the researcher explains further about flipbook learning media in online learning activities. Flipbook learning media is a type of teaching material presented in the form of an electronic book (e-book). Flipbook learning media can be developed by writing a text about a topic, accompanied by examples of interesting images and videos related to the material, interesting sound effects, concept maps, quizzes, material summaries, and exercises.

#### ➤ *Debris Index Teenager*

The average debris score dropped from 0.764 in the intervention group to 0.458 in the results, and from 0.532 to 0.262 in the control group. Based on the effectiveness test of unpaired data, the website-based flipbook model is effective in lowering the debris index for teenagers in the intervention group when compared to the control group. The pre-post-test change value ( $\Delta$ ) is significantly different, and the p-value is 0.001 ( $p < 0.05$ ).

Consciousness and conduct regarding one's own mouth hygiene are the most crucial components of oral hygiene maintenance. This is significant since it is an activity that can be done at home alone without supervision and is entirely dependent on the person's awareness, knowledge, and commitment to maintain good oral hygiene. Plaque management and routine plaque removal are directly tied to maintaining oral hygiene [17].

Early dental health education for children is essential in the fight against dental and oral illnesses. This is due to the fact that oral health education is a crucial instrument for disease prevention before an outbreak happens. Education on dental health is crucial in raising awareness of the need for teeth that endure longer, particularly in young people.

To attain a thorough grasp of dental and oral health, sustainable dental health education through counseling seeks to alter knowledge, attitudes, and behavior from harmful to healthy conduct. Every kid receives a unique dental health instruction tailored to their age. Effective communication is

a critical component of therapy. For the counseling that is conducted will not be successful if the message is not delivered correctly [20].

The website-based flipbook material is consistent with previous research showing its applicability to the learning process. Website-based flipbooks are described as an effective teaching tool and require minimal funding for production. A flipbook is a digital book that can be accessed via the internet using various devices. Flipbooks are digital books that are even more innovative than e-books. Flipbook has advantages in presenting the material in it, supporting many formats including audio, video, images, diagrams, and text. The flipbook material developed is also web-based and can be widely accessed by students without time and place restrictions [21].

## V. CONCLUSION

- Website-based flipbook is suitable to be used as a model in improving adolescent dental and oral health maintenance behavior.
- Model website-based flipbook effectively increases the knowledge, attitudes, and actions of teenagers with a p-value (0.001) compared to the control group.
- Model website-based flipbook effectively reduced the adolescent debris index score with a p-value (0.010) compared to the control group.

## REFERENCES

- [1]. Meidina As, Hidayati S, Mahirawatie Ic. Systematic Literature Review: Pengetahuan Pemeliharaan Kesehatan Gigi Dan Mulut Pada Anak Sekolah Dasar. *Indones J Heal Med.* 2023;3(2 April 2023):41-61. [Http://Rcipublisher.Org/Ijohm/Index.Php/Ijohm/Article/View/211](http://Rcipublisher.Org/Ijohm/Index.Php/Ijohm/Article/View/211)
- [2]. Septiani D, Sughesti D, Susanti D, Polmauly Mt, Novitasari S. Pentingnya Menjaga Kesehatan Gigi Dan Mulut. 2022;3(1):56-66.
- [3]. Kementerian Kesehatan RI Badan Penelitian Dan Pengembangan. Hasil Utama Riset Kesehatan Dasar. *Kementrian Kesehat Republik Indones.* Published Online 2018:1-100.
- [4]. Ri K. Faktor Risiko Kesehatan Gigi Dan Mulut. *Pus Data Dan Inf Kementeri Kesehat Ri.* Published Online 2019:2016-2021.
- [5]. Bambang Sutomo, Bedjo Santosa Nam. Pengaruh Perilaku Orang Tua Terhadap Status Kebersihan Gigi Anak Di Sdn 03 Karangjati. *J Kesehat Gigi.* 2017;04(2):21-26.
- [6]. Irwan. *Etika Dan Perilaku Kesehatan.* Cv. Absolute Media; 2017.
- [7]. Riskesdas 2018. Laporan Provinsi Sulawesi Barat Riskesdas 2018. *Badan Penelit Dan Pengemb Kesehat.* 2018;110(9):129.

- [8]. Yusmanijar Ma. Hubungan Tingkat Pengetahuantentangkesehatangigidan Mulut Denganperilakuperawatan Gigidan Mulut Padaanakusiasekolah 7-9 Tahun Di Sd Islam Al Amal Jaticempaka. 2019;5(01) 80-9. Doi:10.34005/Afiat.V5i01.721
- [9]. Muhammad S, Dinas Kesehatan Provinsi Sulawesi. Profil Kesehatan Provinsi Sulawesi Barat Tahun 2016. *In Slideshare*. Published Online 2017.
- [10]. Kemenkes Ri. *Pedoman Usaha Kesehatan Gigi Sekolah (Ukgs)*.; 2012.
- [11]. Fatman Sa, Sunarjo L, Fatmasari D, Kusno K. Model Cakar Sebagai Media Edukasi Terhadap Peningkatan Perilaku Remaja Dalam Pencegahan Karang Gigi. *J Heal Sains*. 2023;4(3):74-84. Doi:10.46799/Jhs.V4i3.864
- [12]. Arifin S, Rahman F, Wulandari A, Anhar Vy. Buku Dasar-Dasar Manajemen Kesehatan. *J Chem Inf Model*. 2013;53(9):1689-1699.
- [13]. Cahyaningtyas Ap, Ismiyanti Y. Pelatihan Pembuatan Flipbook Interaktif Bagi Guru-Guru Sd Negeri Desa Gentansari Dan Twelagiri. *Bernas J Pengabdian Kpd Masy*. 2022;3(4):1112-1119.
- [14]. Yuniarly E, Amalia R, Haryani W. Hubungan Tingkat Pengetahuan Tentang Kesehatan Gigi Dan Mulut Dengan Tingkat Kebersihan Gigi Dan Mulut Anak Sekolah Dasar. *J Oral Heal Care*. 2019;7(1):01-08. Doi:10.29238/Ohc.V7i1.339
- [15]. Nurjannah A, Marpaung E, Fazrin Sl. Pengembangan Media Flifbook Untuk Meningkatkan Sikap Tanggung Jawab Di Sekolah Dasar. *J Pendidik Dasar Dan Sos Hum*. 2023;2(3):421-428.
- [16]. Darsini, Fahrurrozi, Cahyono Ea. Pengetahuan ; Artikel Review. *J Keperawatan*. 2019;12(1):97.
- [17]. Arsyad. Pengaruh Penyuluhan Terhadap Pengetahuan Pada Murid Kelas Iv Dan V Sd. *Media Kesehat Gigi*. 2018;17(1):1-13.
- [18]. Nurwidiyanti A, Sari Pm. Pengembangan Media Pembelajaran Flipbook Berbasis Literasi Sains Pada Pembelajaran Ipa Sekolah Dasar. *J Basicedu*. 2024;8(1):601-614.
- [19]. Setiadi Mi, Muksar M, Suprianti D. Penggunaan Media Pembelajaran Flipbook Untuk Meningkatkan Aktivitas Dan Hasil Belajar Siswa. *Jisip (Jurnal Ilmu Sos Dan Pendidikan)*. 2021;5(4):1067-1075. Doi:10.58258/Jisip.V5i4.2542
- [20]. Laksono S, Khairunnisa I, Effendi. Jurnal Kesehatan Gigi. *J Kesehat Gigi*. 2023;1:22-30.
- [21]. Brenda R, I S, Budiono H, Et Al. Pengembangan Bahan Ajar Flipbook Berbasis Web Pada Muatan Ipa Di Sekolah Dasar. *J Educ Res*. 2023;4(3):1341-1349.