

# Interactive Biology media learning development based on Google Site to developing the learning result

Rahmat Dzulfikry<sup>1</sup>, Patta Bundu<sup>2</sup>, Syukur Saud<sup>3</sup>

University of Makassar, Indonesia

[rahmat@icm.sch.id1](mailto:rahmat@icm.sch.id1), [patta.bundu@unm.ac.id2](mailto:patta.bundu@unm.ac.id2), [syukur.saud@unm.ac.id3](mailto:syukur.saud@unm.ac.id3)



## Article History

Received on 2 November 2023

1<sup>st</sup> Revision on 21 November 2023

2<sup>nd</sup> Revision on 1 December 2023

3<sup>rd</sup> Revision on 5 December 2023

4<sup>th</sup> Revision on 13 December 2023

Accepted on 14 December 2023

## Abstract

**Purpose:** This research aims to develop interactive learning media based on Google Site for student learning styles or Learning Style, because each student has a different learning style, whether visual, kinesthetic or audio-visual learning styles.

**Research methodology:** The methodology used in this research is qualitative Research and Development research with a 4D approach, which is an extension of defining, designing, developing and disseminating. The instruments used in this research include validation and practicality sheets, pre-test and post-test question instruments.

**Results:** The data processing carried out in this research is processing media validity data and also its practicality using the N-Gain test. The research results obtained are: 1) Assessment of the suitability of the media by media experts at 80%. 2) Assessment of the suitability of the material by material experts at 80%, meaning that the media and learning materials fall into the appropriate category and do not need to be revised. The effectiveness test of N-Gain data media shows a percentage of 56.297%. Based on the N-Gain effectiveness interpretation category, a treatment is said to be effective if it meets a percentage above 76%. It is said to be quite effective if it meets a percentage between 56-75%. Based on the results of this research, the model product developed is quite effective and has a good contribution to improving the learning outcomes of junior high school students.

**Keywords:** Media Development, Google site

**How to Cite:** Adamu, I. G., Olayinka, A. A., & Usman, M. (2024). Factors influencing students academic performance: Case of Mai Idris Aloom Polytechnic Geidam. *Journal of Multidisciplinary Academic Business Studies*, 1(3), 203-216.

## 1. Introduction

Learning is a process that results in changes in behavior both cognitive, affective and psychomotor aspects. While learning activities are interaction activities between students and educators and learning resources in a learning environment. For this reason, it is very important for a teacher or educator to be able to design learning activities so that changes in behavior both cognitive, affective and psychomotor students can be achieved optimally. As for what is meant by learning according to (Usman, 2000, p. 5) is "changes in behavior in individuals thanks to the interaction between one individual and another individual and between individuals and the environment.

(Subrata, 1995, p. 249) Defining learning is "(1) leads to changes, (2) that the change is basically the obtaining new skills, (3) that the change occurs due to an intentional effort. Changes in both affective, cognitive and psychomotor behavior we are familiar with learning outcomes. Learning outcomes are the abilities obtained by individuals after the learning process takes place, which can provide changes in behavior both in knowledge, understanding, attitudes and skills of students so that it becomes better than before (Purwanto, 2009, p. 44).

The right to education and teaching that is worth guaranteed by the Indonesian government in Article 5 paragraph 1-5 of the 1945 Constitution: (1) Every citizen has the same rights for quality education; In remote and backward areas and remote indigenous people are entitled to receive special service education; (4) citizens who have intellectual potential and special talents are entitled to a special education; (5) Every citizen is entitled to the opportunity to improve life's standard of life. education. The logical results of the Preamble to the 1945 Constitution determine that everyone regardless of physical fitness, religion, race, etc., is entitled to education and guidance for self-development. The right to education and teaching that is worthy of the Indonesian government to write in Article 5 paragraph 1-5 of the 1945 Constitution: (1) Every citizen has the same rights for quality education; In remote and backward areas and remote indigenous people are entitled to receive special service education; (4) citizens who have intellectual potential and special talents are entitled to a special education; (5) Every citizen is entitled to the opportunity to improve life's standard of life. education. The logical results of the opening of the 1945 Constitution determine that everyone regardless of physical fitness, religion, race, etc., is entitled to education and guidance for self-development.

Learning outcomes are a picture of how students understand the material delivered by the teacher. Learning output is a value output in the form of numbers or letters that students get after receiving learning material through a test or test delivered by the teacher. From the learning outcomes the teacher can receive information on how far students understand the material being learned. Learning outcomes are a benchmark for students' success in learning the material delivered by the teacher during a certain period. Learning objectives are considered to be achieved if students get satisfying learning outcomes. Learning outcomes can be known after the teacher evaluates student learning outcomes.

Sudjana (2014) states that the assessment of learning outcomes is divided into three domains, namely cognitive domain, affective domain and psychomotor domain. The cognitive domain is the most common domain of teachers in school because it is related to the ability of students in mastering the contents of the learning material. The assessment of learning outcomes can be done through daily tests, general tests (consisting of UTS and UAS) and final exams. The results of the assessment that have been carried out is used as a high reference for student learning outcomes. Based on the data assessment of learning outcomes in the form of summative grades (PAS) students of SMP Insan Cendekia Madani BSD Biology subjects in class 7 as many as 56% in class 8 as many as 55.3% and in class 9 as many as 53.7% below KKM (80). A class is said to have completed classical learning if the percentage achieved is at least 65% (Depdikbud, 2001) This proves that student learning outcomes in biology in the Middle School of Scholar Madani Middle School are still relatively low.

Each individual has their own advantages and disadvantages. These advantages and disadvantages are called uniqueness, which distinguishes one individual from another individual. As explained (Ghufron & Risnawati, 2014, p. 8) that individuals are a unity that each has a characteristic, therefore no individual is the same.

Learning style is the fastest and best way that individuals have in accepting, absorbing, managing, and processing the information they receive. According to (De Porter & Hernacki, 2010) in general learning styles are distinguished in three groups, namely visual learning styles, auditorial learning styles, and kinesthetic learning styles. Learning style has an important role in education, especially in the process of teaching and learning activities. Barbara Prashnig revealed that student learning styles in accordance with the way they do learning activities will have a positive impact, such as being able to improve their learning achievement. Barbara Prashnig also said that the role of the teacher in the student learning process greatly affects student success. In line with (Indah & Sarwanto, 2018), which is declared physics learning based on SAVI learning styles (Somatic, Auditory, Visualization, Intellectually) effectively improve student learning outcomes by 80% to KKM. Other studies state that students with auditory learning styles have an average learning outcomes that are better than visual and kinesthetic (Rusli et al., 2023). Insan Cendekia Madani BSD (ICM BSD) is a school that receives students with all different backgrounds. ICM BSD emphasizes the characteristics of students where each student has differences, especially in learning style (learning style). Each student will be observed by his learning style, whether

included in visuals, kinesthetic or audio visual. So it becomes an initial data for teachers to be able to facilitate learning through learning media that can accommodate student learning styles.

Learning media is one of the important components contained in the learning process. The media used in the teaching and learning process must have good quality and quality even though the media is only simple. According to (Kustandi & Sutjipto, 2016, p. 8) Media is used as a means to achieve learning goals, because of it, the information contained in the media must involve students, both in mind or mental or in the form of real activities, so that learning can occur. According to (Wiaro, 2016) the procedure for selecting media must determine whether the media is designed for learning or instructional teaching aids, as well as establishing whether in an effort to encourage these activities an affective, cognitive, and psychomotor strategy will be used.

Utilization of learning media should be a part of the teacher's attention in learning activities. In fact, not all teachers make learning media that can facilitate student learning styles both audio, visual and kinesthetic. The media made limited to facilitating a student learning style, namely visual. Less varied and not yet optimal learning media used led to lack of student interest in learning. This is very unfortunate, because it is contrary to the aim of learning media, namely as a learning aid that is useful for making the learning process effective.

So with the description above the researcher is interested in conducting research where researchers want to develop biology learning media on student learning styles (audio, visual and kinesthetic) in improving the learning outcomes of students of Madani Scholar Middle School.

## **2. Literature Review**

### **2.1 Definition of Learning Outcomes**

According to (Sudjana, 2005, p. 20) The Nature of Learning Outcomes is a change in individual behavior that includes cognitive, affective, and psychomotor aspects. The learning outcomes achieved by students are influenced by two main factors namely the factors from within the student and the factors that come from outside the student or environmental factors. Factors of students' ability to influence the learning outcomes achieved. Besides the ability factors of students have, there are also other factors, such as learning motivation, interests and attention, attitudes and learning habits, perseverance, socioeconomic, physical and psychological factors.

Learning outcomes are generally an ability in the form of new skills and behavior as a result of training and experience. Learning outcomes can be interpreted as the level of student success in studying the subject matter in the school stated in the score obtained from the test results knowing a number of certain subject matter (Susanto, 2013, p. 5).

Learning outcomes are matters relating to learning activities. Because, learning activities are a process carried out by a student to obtain an understanding or knowledge so that a change in good behavior. This shows that learning outcomes are the achievement of educational goals in students who follow the teaching and learning process (Purwanto, 2009, p. 5). As explained in Law Number 20 of 2003 that "National Education aims to develop the potential of students to become human beings who believe and devote to God Almighty, have noble character, healthy, knowledgeable, creative, independent, and become citizens democratic and responsible" (Undang - Undang Sistem Pendidikan Nasional No. 20, 2003).

### **2.2 Learning Media**

Learning media is a means that supports a process of teaching and learning activities, understanding and success of students in accepting what is conveyed by the teacher, all of that starts from the media used by the teacher himself. For this reason, teachers in carrying out their duties as much as possible must utilize learning media as an effort to encourage students to be more active in learning.

Learning media is a means of communication in the form of print and viewing-view, including hardware technology and the position of learning media. Therefore the learning process is a communication

process and takes place in one system, the learning media occupies a position that is quite important as one of the components of the learning system. Without the media, communication will not occur and the learning process as a communication process will also not be optimal. Learning media is a component of everything that can channel the individual characteristics of students (Ekayani, 2017, p. 3).

In a teaching and learning process, there is a very important element that is learning media. The selection of certain learning media will affect the appropriate type of learning media, although there are still various other aspects that must be considered in choosing the media. It is better for educators to choose and use learning media well so that students are more enthusiastic in following the learning that is delivered and increase learning motivation in students.

Making learning media is the obligation of a teacher in managing learning because it is one of the teacher competencies that must be developed by teachers, namely pedagogical competencies. (Mulyasa, 2008, p. 103) Stating that pedagogical competence is the ability to manage student learning including understanding of students, design and implementation of learning, evaluating learning outcomes and development of students to actualize the various potentials they have. The teacher in the learning process is expected to be able to guide and direct the potential of students so that learning runs effectively and achieve the expected results. The ability of teachers in learning management is needed in order to create a relationship that is familiar with students and can spur the enthusiasm of students to learn. Students will feel more comfortable and enthusiastic if the teacher can manage learning and understand students during learning.

## **2.3 Learning Style**

### **2.3.1 Definition of Learning Style**

Learning style is the way someone feels easy, comfortable, and safe when learning, both from the time side and senses. Learning style is the style chosen by someone to get information or knowledge in a learning process. Someone will find it difficult to process information in an uncomfortable way because everyone has their own learning needs. While the learning needs of everyone are always different and the way of learning and processing information is also different.

(DePorter B. , 2009, p. 110) suggests that a person's learning style is a combination of how he absorbs and then regulates and processes information. Furthermore (Munir, 2008, p. 159) argues that learning style is a characteristic or method used by someone to obtain or process information or knowledge in a learning process. Samples (2002) also expressed the same thing that learning style is the way we prefer to process experience and information.

### **2.3.2 Learning Style Concept**

Learning style is often defined as the characteristics and preferences or choices of individuals regarding how to collect information, interpret, organize, respond and think about that information. Learning styles are key to developing performance on the job, at school, and in interpersonal situations.

Learning orientation is defined as the entire domain that contains goals, intentions, motives, hopes, attitudes and interests regarding the individual towards the learning process. Guidance and Learning Counseling Services Material "Recognizing Three Types of Learning Styles Meanwhile, Dunn and Griggs (1988) view learning styles as innate biological characteristics. This means that learning style is a gift from God Almighty and is difficult to change according to your wishes. Several experts divide learning styles through various perspectives so that various variations in the division of learning styles are obtained. (DePorter & Hernacki, 1992) divides individual learning styles based on the type of display of information given to students into three categories, including (1) visual style which explains that individuals prefer to process information through sight, (2) auditory which likes information through hearing and (3) kinesthetic which likes information through movement, practice or touch. Learning styles are key to developing performance on the job, at school, and in interpersonal situations. When you know your learning style, namely how you absorb and process information, you will be able to make learning and communicating more effective and achieve success more easily.

#### ***2.4 Framework of Thought***

Learning media is a learning component that has an important role in teaching and learning activities. Good use of learning media is using media that can facilitate students' learning styles, so that students can absorb more material and gain more learning experience. This has been widely supported by several previous studies which stated that learning media can improve learning outcomes. The development of learning media at the Madani Scholars school is focused on developing learning media that can facilitate students' learning styles, namely Audio, Visual and Kinesthetic.

Based on the problems described in the background, the learning media available at the Madani Scholars school needs to be developed so that it can improve learning outcomes by facilitating students' learning styles. The learning media created by the teacher is actually quite good and varied, including: power point, Canva, Kahoot, etc. This media does not yet facilitate audio, visual and kinesthetic student learning styles in the learning process.

This research aims to develop learning media currently used so that they can facilitate students' learning styles by testing their level of effectiveness, practicality and validity. The details of the conceptual framework for this research can be seen in the following chart:

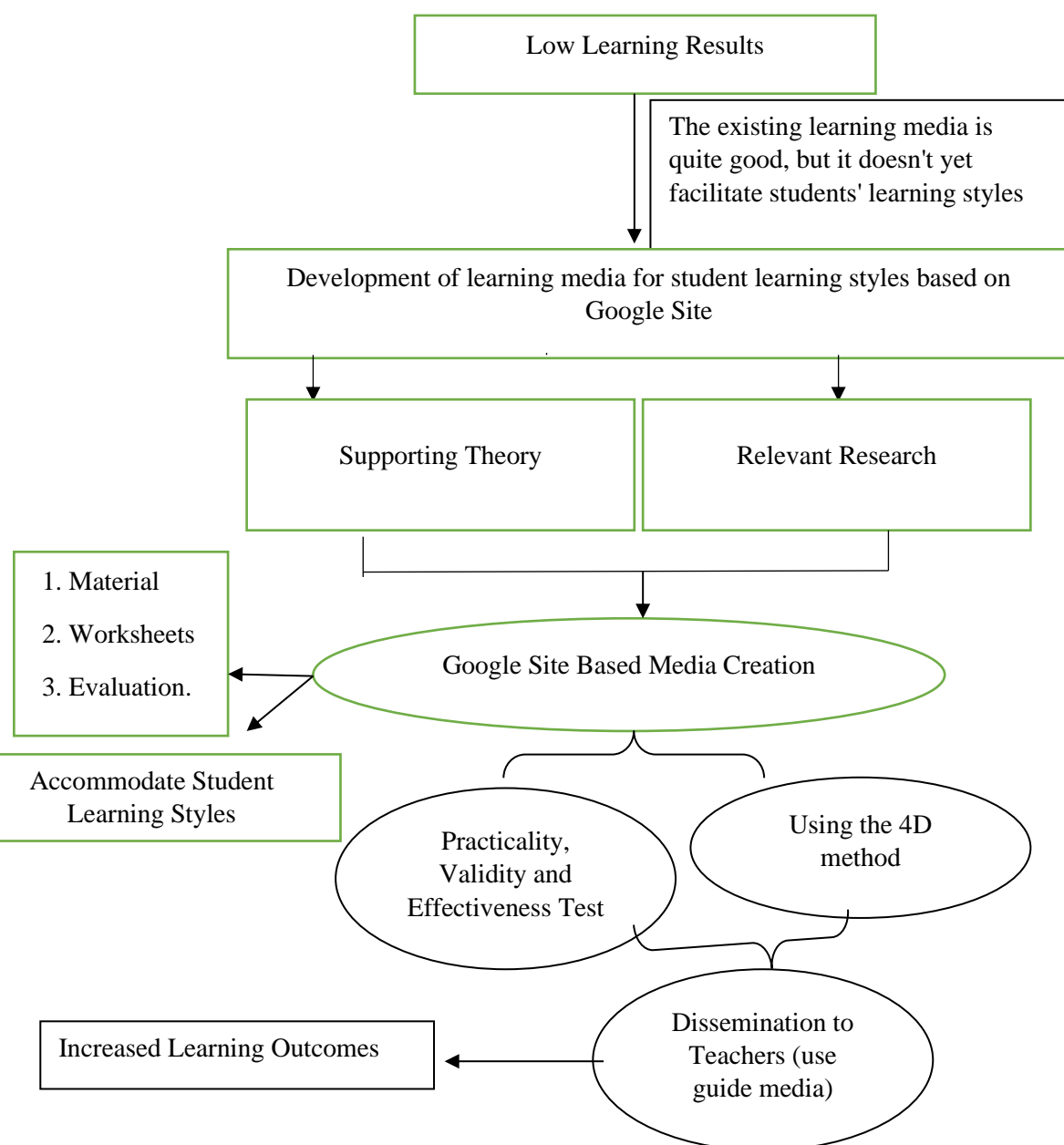


Figure 1. Conceptual Framework Chart

### 3. Research Methodology

#### 3.1 Types of Research

Based on the research title "Development of Biology Learning Media that Accommodates Google Site Based Student Learning Styles" at the BSD Insan Scholar Madani Middle School for the 2023/2024 Academic Year", the approach used in this research is a quantitative approach with the Research and Development (R&D) method. where Research and Development is a research method used to produce certain products, and test the effectiveness of certain products (Sugiyono, 2013). In carrying out this research, researchers used the Research and Development (R&D) method which takes place in the form of a cycle, starting from the initial search stage, product development, testing and improvement.

#### 3.2 Time and Place of Research

This research will be carried out from October 2023 to December 2023 located at SMP Insan Ilmu Madani BSD, Serpong, South Tangerang.

### **3.3 Research Design**

Research and development methods (Research and Development) are research methods used to produce certain products and test the effectiveness of these products. (Sugiyono, 2012: 407) The research design used in this research is a 4-D model development research design (Four D Models) according to Thiagarajani. This includes 4 stages, namely the definition, design, development and dissemination stages which can be explained as follows:

#### **1. Definition stage**

The definition stage is useful for determining and defining needs in the learning process as well as collecting various information related to the product to be developed. This stage is divided into several steps, namely:

- a. Front-end Analysis
- b. Learner Analysis
- c. Task Analysis
- d. Concept Analysis
- e. Specifying Instructional Objectives

#### **2. Design Stage**

After getting the problem from the definition stage, the design stage is then carried out. This design stage aims to design a development of learning media that accommodates students' learning styles that can be used in BIOLOGY learning. This design stage includes:

- a. Criterion-Test Construction
- b. Media Selection
- c. Format Selection
- d. Initial Design

#### **3. Development Stage**

This development stage aims to produce the development of learning media that accommodates students' learning styles which have been revised based on expert input and trials with students. There are two steps in this stage, namely as follows:

- a. Expert Appraisal
- b. Development Testing

#### **4. Dissemination Stage**

After limited trials and the instrument has been revised, the next stage is the dissemination stage. The aim of this stage is to disseminate learning media that accommodates students' learning styles. In this research, only limited dissemination was carried out, namely by disseminating and promoting the final product of learning media that accommodates students' learning styles. limited to Biology teachers at Insan Scholar Madani Middle School, BSD.

### **3.4 Population and Sample**

#### **3.4.1 Research Population**

Population is a set with characteristics determined by researchers so that each individual/data can be stated accurately whether they are members or not (Kadir, 2015, p. 5). Characteristics of the population will be represented by the sample or special characteristics of the population will be described in the sample. The population in this study was all students in class VIII of Insan Scholar Madani Middle School for the 2022/2023 academic year, totaling 81 students divided into 4 classes with the number of students in each class being 21 students.

#### **3.4.2 Research Sample**

The research sample is part of the number and characteristics of the population (Sugiyono, 2013, p. 81). A sample can also be interpreted as a data collection procedure, where only a portion of the population is taken and used to determine the desired characteristics. The sample in this research was class VIII A students with a total of 21 students.

### 3.4.3 Research Sampling

In research activities, to cover the entire object in this case is not done. Sampling techniques need to be used. Sampling technique is the sampling technique that will be used. This research uses a non-probability sampling technique, namely a sampling technique that does not give each member of the population a chance to be sampled. In this research, the type of purposive sampling used is what is often known as consideration sampling because this technique is a sampling technique where the researcher has certain considerations in taking the sample. The reason for choosing this technique was because in selecting the sample it had to be class VIII students who were taught by the same teacher and had relatively similar learning outcomes.

### 3.4.4 Data Collection Techniques

The data collection technique used in this research is observation. In quantitative research, many observation techniques are also used, both direct and indirect. In using this observation technique, the most widely used tool (instrument) is recording, in various forms/types. Apart from that, various electronic devices can also be used such as tape recorders, video cameras, films, photos, etc (Nawawi & hadari, 1995, p. 218).

The observation used in this research is in the form of involved observation (participatory observation), namely the researcher as the main instrument goes to the research location to observe intensively until he finds out in full what the objective is. Researchers involve themselves with the subject under study with the aim of gaining a deep understanding of existing problems or phenomena.

## 4. Results and Discussions

### 4.1 Hasil Penelitian

The results of the development of Biology Interactive Media are based on primary data where the average summative scores for classes 7, 8 and 9 semester 1 respectively are: 56%, 55.3% and 55.7% and the summative scores for classes 7, 8 and 9 semester 2 respectively respectively: 44%, 44.7% and 44.3% and student questionnaire data related to learning difficulties experienced where the main factor causing low learning outcomes is because the learning media used is less interesting.

#### 4.1.1 Product Practicality, Validity and Effectiveness Results

##### 1. Product Practicality

The Google Site-based learning media product for the Biology subject that was developed by was then applied in the classroom learning process using a laptop. After the learning process was complete and students were able to understand the lesson and were able to use the media correctly, the researcher gave a response questionnaire to the product that had been developed. The results of the student response questionnaire regarding the use of Google Site-based learning media are described as follows:

Table 1. Student Responses to Products

Item 1				
	Frequency	Percent	Valid Percent	Cummulative Percent
Valid 4	10	47.6	47.6	47.6
5	11	52.3	52.3	100.0
Total	21	100.0	100.0	

For item 1, it is about the ease of understanding the material presented in Google Site-based learning media products, 100% of students answered that it was easy to understand. Namely 10 (47.6%) answered easily and 11 (52.3%) students answered very easily.

Item 2				
	Frequency	Percent	Valid Percent	Cummulative Percent
Valid 3	6	28.5	28.5	28.5



4	15	71.4	71.4	100.0
Total	21	100.0	100.0	

For item 2 regarding students' enjoyment of learning using learning media products that have been developed, 15 (71.4%) students answered happy and 6 (28.5%) students answered neutral or normal.

Item 3				
	Frequency	Percent	Valid Percent	Cummulative Percent
Valid 4	4	19.0	19.0	19.0
5	17	80.9	80.9	100.0
Total	21	100.0	100.0	

For item 3 regarding enthusiasm for learning about the Digestive System material, use learning media products that have been developed. 19% answered enthusiastically and 80.9% of students answered very enthusiastically.

Item 4				
	Frequency	Percent	Valid Percent	Cummulative Percent
Valid 3	6	28.5	28.5	28.5
4	11	52.3	52.3	52.3
5	3	14.2	14.2	100.0
Total	21	100.0	100.0	

For item 4 regarding understanding grammar in Google Site-based learning media products, 6 students or 28.5% answered normal, 52.3% answered easy and 14.2% answered very easy to understand.

Item 5				
	Frequency	Percent	Valid Percent	Cummulative Percent
Valid 4	4	19.0	19.0	80.9
5	17	80.9	80.9	100.0
Total	21	100.0	100.0	

For item 5 regarding the attractiveness of images or visuals in this learning media, 19% of students answered interesting and 80.9% answered very interesting.

Item 6				
	Frequency	Percent	Valid Percent	Cummulative Percent
Valid 4	12	57.1%	57.1%	57.1
5	9	42.8%	42.8%	100.0
Total	21	100.0	100.0	

For item 6 regarding ease of understanding instructions for working on questions in Google Site-based learning media products. Student responses were 57.1% who answered easily and 42.8% answered very easily.

Item 7				
	Frequency	Percent	Valid Percent	Cummulative Percent
Valid 2	17	80.9	80.9	80.9
3	4	19.0	19.0	100.0
4	0			

Total		100.0	100.0	
-------	--	-------	-------	--

For item 7 regarding the number of difficult words found in using this learning media, student responses were 80.9% who answered that they disagreed and 19.0% answered that they did not agree.

Item 8

	Frequency	Percent	Valid Percent	Cummulative Percent
Valid 4	10	47.6%	47.6%	52.3
5	11	52.3%	52.3%	100.0
Total	21	100.0	100.0	

For item 8 regarding ease of understanding instructions for working on questions in Google Site-based learning media products. Student responses were 57.1% who answered easily and 42.8% answered very easily.

Item 9

	Frequency	Percent	Valid Percent	Cummulative Percent
Valid 4	2	38.0%	38.0%	61.9
5	13	61.9%	61.9%	100.0
Total	21	100.0	100.0	

For item 9 regarding ease of understanding questions worked on Google Site-based learning media products. Student responses were 38.0% who answered easily and 61.9% answered very easily.

Item 10

	Frequency	Percent	Valid Percent	Cummulative Percent
Valid 4	16	76.1%	76.1%	76.1
5	5	23.8%	23.8%	100.0
Total	21	100.0	100.0	

For item 10, based on the results of testing this Google Site-based learning media product, it helps students understand the material on the Human Digestive System with details of 76.1% helping and 23.8% answering very helpful.

#### 4.1.2 Validation of Media and Learning Design Experts

Google Site-based interactive learning media products developed by researchers have gone through a research process and examination by experts. The first assessment was carried out by media and design expert Mr. Fahrur Rozi. He is the head of IT at the Insan Scholar Madani BSD school. The following is a description of the results of his assessment of the product.

Media and learning design experts believe that the Google Site-based interactive learning media product developed by this researcher can be used to help the learning process. Meanwhile, the percentage level of product achievement can be calculated using the following mathematical formula:

$$\text{Percentage} = \frac{\sum \text{jawaban} \times \text{bobot}}{n \times \text{bobot tertinggi}} \times 100$$

$$\text{Percentage} = \frac{60 \times 1}{15 \times 5} \times 100 = 80\%$$

Information:

Number of Answers : 60

N : 15

Highest Weight : 5

The results of the product achievement percentage calculation of 80%, this figure is in very good qualifications and does not need to be revised.

#### 4.1.3 Material Expert Validation

After conducting research on Google Site-based interactive learning media products by media and learning design experts, then these learning media products were also assessed by material experts, namely Mrs. Poppy Rusdi, M.Sc. The following are the results of material experts' responses to this product.

Biology material experts in the Human Digestive System chapter are of the opinion that the Google Site-based interactive learning media product developed by researchers can be used to assist the learning process and the material in it is suitable for application. Then the percentage of product achievement can be calculated using the following mathematical formula.

$$\text{Percentage} = \frac{\sum \text{jawaban} \times \text{bobot}}{n \times \text{bobot tertinggi}} \times 100$$

$$\text{Percentage} = \frac{40 \times 1}{10 \times 15} \times 100 = 80\%$$

Information:

Number of Answers : 40

N : 10

Highest Weight : 5

The calculated percentage of product achievement of 80% is a very good qualification and does not need to be revised.

#### 4.1.4 Classroom Teacher Validation

The Google Site-based learning media product developed by this researcher, before being implemented in the learning process, is first carried out by the class teacher. She is the mother of Tania Agnesa, M.Sc. Master's degree graduate from Gajah Mada University. The response questionnaire given to teachers to obtain an assessment is basically the same as the questionnaire given to material experts. The following are the results of the class teacher's response to the product.

The class teacher believes that the Google Site-based learning media product developed by the researcher can be used to assist the learning process and the material contained therein is suitable for application in class VIII of SMP Insan Scholar Madani BSD. Then the percentage of product achievement level can be calculated using the following mathematical formula.

$$\text{Percentage} = \frac{\sum \text{jawaban} \times \text{bobot}}{n \times \text{bobot tertinggi}} \times 100$$

$$\text{Percentage} = \frac{40 \times 1}{10 \times 15} \times 100 = 80\%$$

Information:

Number of Answers : 40

N : 10

Highest Weight : 5

The calculated percentage of product achievement of 80% is a very good qualification and does not need to be revised.

#### 4.1.5 Validation of Product Effectiveness Level

##### a. Field Test Results

Teaching and learning activities at Insan Scholar Madani Middle School start at 07.40 – 15.00, but students are required to attend school at 07.00 WIB because they do hand over first until 07.15 and continue with the class guardianship session from 07.20 – 07.40 WIB.

##### b. Respondent Characteristics

Based on the results of data processing, information was obtained about the characteristics of students in class VIII SMP, namely that 42 students were male and 40 students were female.

c. Display of N-Gain Test Results Data (Pre-Test and Post-Test)

To determine the level of effectiveness of a treatment, researchers conducted an N-Gain test using pre-test and post-test data:

With formula:

$$N\text{-Gain} = \frac{Skor\ Post\ Test\ Ideal - Skor\ Pretest}{Skor\ Ideal - Skor\ Pretest}$$

Division of N Gain Score	
N Value - Gain	Category
$g > 0,7$	High
$0,3 \leq g \leq 0,7$	Currently
$< g 0,3$	Low

Source: Melzer in Syahfitri, 2008: 33

N-Gain Effectiveness Interpretation Category	
Percentage (%)	Interpretation
$< 40$	Ineffective
40-55	Less Effective
56-75	Effective Enough
$> 76$	Effective

Source : Hake, R.R, 1999

And based on the data obtained, the interpreted percentage of N-Gain's effectiveness is at 56.29%, meaning that the treatment provided is effective enough to have an impact on improving student learning outcomes.

## 4.2 Discussion

### 4.2.1 Validation Analysis of Interactive Media Development Based on Google Site

For the validation test of the Google Site-based interactive learning media, it was validated by two experts, where the first expert was a media expert, in this case the researcher asked Mr. Fahrur Rozi, S.Kom as head of IT at the BSD Civil Scholars School to carry out validation in terms of clarity. instructions for using media, clarity of text/writing, clarity of material descriptions, quality of image display, animation presentation and color composition. Where from the questionnaire given and processed using a Likert scale, a percentage of 80% was obtained. According to Sugiyono (2010) in Quantitative and Qualitative R&D Research Methods, a study is declared valid and does not need revision if the percentage of feasibility level is 60 - 79 (fairly valid, no need for revision) and 80 - 100 (very valid, no need for revision).

Apart from media experts, researchers also carried out validation regarding the content or learning materials on the digestive system carried out by Mrs. Poppy Rusdi, M.Sc. he is in the Quality Assurance section of the Madani Scholars school and has a master's background in marine biology. From the results obtained, the percentage level of appropriateness of the material is 80%, meaning that the material created is valid and no revision is needed. Sugiyono (2013) stated that quantitative researchers in collecting data using instruments in the form of questionnaires can be used to measure quantitative data accurately. The Likert scale used can be used to measure attitudes, opinions and perceptions of a person or group of people towards social phenomena. With a Likert scale, the variables being measured are translated into indicator variables and obtained as a benchmark for compiling instrument items which can be in the form of statements or questions.

### 4.2.2 Analysis of the Level of Effectiveness of Interactive Media Based on Google Site

Based on the results of the N-Gain test carried out, the percentage obtained was 56.297%. Based on the N-Gain effectiveness interpretation category, a treatment is said to be effective if it meets the percentage above 76%. It is said to be quite effective if it meets the percentage between 56-75%. This means that Google Site-based learning media is quite effective in improving student learning outcomes. This is in line with previous research, namely Hesti Lukitaningrum, 2016, entitled the development of learning media based on the Google Site website can improve the learning outcomes of class XI students. Furthermore, the results of research conducted by Wiwik Indah Lestari with the title "Development of Google Site Website-Based Learning Media for Junior High Schools (SMP) for Social Sciences (IPS) subjects can improve the learning outcomes of class VII students. In another study, namely "Development of Interactive Learning Media Based on the Google Site Website by Stevie Wulandari and Ni'matuz Zuhroh, it was found that the effectiveness of the control class was 61.1% and the experimental class got a score of 88.2%, meaning that there was quite a significant change in student learning outcomes before and after treatment.

## 5. Conclusion

### 5.1 Conclusions

Based on the results of the research and discussion, the following conclusions were obtained:

1. The product resulting from the development stage was assessed by three validators as meeting the valid category with the average score from the three validators being 80. This means that the media being developed is valid and does not need to be revised.
2. The average pre-test result which shows students' initial abilities in class VIII in the Human Digestive System subject is 70.47. Meanwhile, the post-test score obtained an average of 87 after going through teaching and learning activities using interactive learning media for students' learning styles based on Google Site. The average student score increased by 16.52 percent with an N-Gain value of 0.56%. This shows that the use of media in learning the Human Digestive System in class VIII has been implemented effectively.

### 5.2 Suggestions

Based on the conclusions and research results, the following suggestions are put forward:

1. Teachers can use interactive learning media products based on Google Site to improve student learning outcomes in the Human Digestive System material in class VIII SMP.
2. The material contained in this learning media was developed only on the Digestive System in Humans, it is recommended that readers or other researchers who wish to develop further research regarding Google Site-based learning media should carry out development on a different scope of material, at different educational unit levels, or other abilities that students must have in learning Biology.

## References

- Cipto, Y. A., Herlambang, A. D., & F. A. (2022). Pengembangan Media Pembelajaran Berbasis Website Berdasarkan Gaya Belajar dan Prinsip Universal Design Of Learning (UDL) Untuk Mata Pelajaran Desain Grafis Percetakan Di SMK Negeri 12 Malang. *Jurnal Teknologi Informasi dan Ilmu Komputer*, 409-418.
- De Porter, B., & Hernacki, M. (2010). *Quantum Teaching*. Bandung: PT Mizan Pustaka.
- Depdikbud. (2001). *Kurikulum Pendidikan Dasar: Kurikulum KTSP SD/MI Mata Pelajaran Bahasa Indonesia*. Jakarta: Puskur Depdiknas.
- DePorter, B. (2009). *Quantum Learning "Fokuskan Energimu Dapatkan Yang Kamu Ingin"*. Bandung: Kaifa.
- DePorter, B., & Hernacki, M. (1992). *Quantum Learning: Unleashing The Genius In You*. New York: Dell Publishing.
- Ekayani, P. (2017). Pentingnya Penggunaan Media Pembelajaran Untuk Meningkatkan Prestasi Belajar Siswa. *Jurnal Lingkar Widyaishwara*, 104 - 107.
- Fadilah, L. (2019). *Pengembangan Media Pembelajaran Berbasis Website IPA Materi Gaya dan Gerak Untuk Meningkatkan Hasil Belajar Siswa Kelas IV MI Imami Kepanjen*. Malang: Universitas Islam Negeri Maulana Malik Ibrahim.

- Ghufron, M., & Risnawati, N. R. (2014). *Teori-Teori Psikologi*. Yogyakarta: ArRuzz Media.
- Hasanah, I., Kantun, S., & Djaja, S. (2018). Pengaruh Gaya Belajar Terhadap Hasil Belajar Siswa Kelas XI Jurusan Akuntansi Pada Kompetensi Dasar Jurnal Khusus Di SMK Negeri 1 Jember Semester Genap Tahun Ajaran 2017/2018. *Jurnal Pendidikan Ekonomi*.
- Indah, D. S., & Sarwanto, S. (2018). Pengembangan Modul Fisika Berbasis Savi (Somatic, Auditory, Visualization, Intellectually) Untuk Meningkatkan Motivasi Siswa Pada Pembelajaran Fisika Kelas X SML Jurusan Multimedia Denan Topik Impuls dan Memoentum. *Jurnal Pendidikan*, 273.
- Kadir. (2015). *Statistika Terapan : Konsep, Contoh dan Analisis Data dengan Program SPSS/Lisrel dalam Penelitian*. Jakarta: Rajawali Pers.
- Kustandi, C., & Sutjipto, B. (2016). *Media Pembelajaran*. Bogor: Ghalia Indonesia.
- Mulyani, L. S., & Solihah, S. (2018). Analisis Tentang Gaya Belajar Siswa Berdasarkan Visual, Auditori, Kinestetik Pada Mata Pelajaran Biologi MAN 1 GARUT. *Institut Pendidikan Indonesia*.
- Mulyasa, E. (2008). *Menjadi Guru Profesional Menciptakan Pembelajaran Kreatif*. Bandung: PT. Remaja Rosdakarya.
- Munir. (2008). *Kurikulum Berbasis Teknologi Informasi dan Komunikasi*. Bandung: Alfabeta.
- Nawawi, H., & hadari, M. (1995). *Instrumen Penelitian Bidang Sosial* . Yogyakarta: Gajah Mada University.
- Noorbaiti, R., & Fajriah, N. (2018). Implementasi Model Pembelajaran Visual-Auditori-Kinestetik Pada Mata Pelajaran Matematika Di Kelas 7E MTSN Mulawarman Banjarmasin. *Jurnal Pendidikan Matematika*, 108-116.
- Nurrita, T. (2018). Pengembangan Media Pembelajaran Untuk Meningkatkan Hasil Belajar Siswa. *Misykat*, 171-187.
- Pubian, Y. M., & Herpratiwi. (2022). *Penggunaan Media Google Site Dalam Pembelajaran Untuk Meningkatkan Efektifitas Belajar Peserta Didi Sekolah Dasar*. Jakarta: Jurnal Akademika : Jurnal Teknologi Pendidikan.
- Purmadi, A., & Surjono, H. D. (2016). Pengembangan Bahan Ajar Berbasis Web Berdasarkan Gaya Belajar Siswa Untuk Mata Pelajaran Fisika. *Jurnal Inovasi Teknologi Pendidikan*, 151-165.
- Purwanto. (2009). *Evaluasi Hasil Belajar*. Yogyakarta: Pustaka Pelajar.
- Purwanto. (2009). *Evaluasi Hasil Belajar*. Yogyakarta: Pustaka Pelajar.
- Rusli; , Suwatno; , Rasto; Muhammad, Ilham ;. (2023). Identifikasi Gaya Belajar Siswa dan Dampaknya Terhadap Hasil Belajar: Analisis Pada Tingkat Pendidikan Menengah Atas. *Jurnal Edukasia : Jurnal Pendidikan dan Pembelajaran*, 859-870.
- Saefiana; Sukmawati, Fitri Dini; , Rahmawati;. (2022). Teori Pembelajaran dan Perbedaan Gaya Belajar. *Jurnal Pendidikan Guru dan Sekolah*, 150-158.
- Sanjaya, W. (2015). *Penelitian Pendidikan Jenis, Metode dan Prosedur*. Jakarta: Prenadamedia Group.
- Sembung, F. Y., Putu, I. B., & Mulyadiharja, S. (2022). Pengembangan Media Pembelajaran Google Sites Berbasis STEM Materi Pencemaran Lingkungan Kelas X SMA Negeri Bali Mandara. *Jurnal Pendidikan Biologi Undiksha*, 2599-1450.
- Subrata, S. S. (1995). *Psikologi Pendidikan*. Jakarta: Raja Grafindo Persada.
- Sudjana, N. (2005). *Dasar - Dasar Proses Belajar Mengajar*. Bandung: Sinar Baru Algesindo.
- Sudjana, N. (2014). *Penilaian Hasil Proses Belajar Mengajar*. Bandung: PT Remaja Rosdakarya.
- Sudjana, N. (2016). *Penilaian Hasil Belajar*. Bandung: PT Remaja Rosdakarya.
- Sugiyono. (2013). *Metode Penelitian Kuantitatif dan Kualitatif dan R&D*. Bandung: CV Alfabeta.
- Susanto, A. (2013). *Teori Belajar dan Pembelajaran*. Jakarta: Kencana Prenada Group.
- (2003). *Undang - Undang Sistem Pendidikan Nasional No. 20*. Jakarta: Sinar Grafika.
- Usman, M. U. (2000). *Menjadi Guru Profesional*. Bandung: Remaja Rosdakarya.
- Wiarso, G. (2016). *Media Pembelajaran Dalam Pendidikan Jasmani*. Yogyakarta: Laksitas.
- Wulandari, S., & Zuhroh, N. (2023). Pengembangan Media Pembelajaran Interaktif Berbasis Website Google Sites Dalam Meningkatkan Hasil Belajar. *Jurnal Pendidikan Ilmu Pengetahuan Sosial*, 87-101.