# CHAPTER III

RESEARCH METHOD

In this section of research method, the researcher includes research design, research setting, research subject and object, research procedure, method and instrument of data collection, and data analysis which discussed below.

3.1 Research Design

This study looks at the needs of teacher and students in the fifth-grade of the second semester by developing Wordwall-based digital media. The researcher chose Design and Development (D&D) research that is carried out through a design, development, and evaluation process with the goal of forming an empirical foundation for creating products and tools for learning and non-learning activities, as well as creating new or improving models that regulate their development. In other words, this type of research is concerned with product development and application. As a result, it may be a useful product to aid student learning. Supplementary media was created and implemented in this case for students in the fifth-grade of the second semester at SD Negeri 1 Baktiseraga. The purpose of this study is to create and investigate the quality of additional media.

In this D&D research, the ADDIE Research Model was used which as the name implies is a model that involves five stages of model development (analysis, design, development or production, implementation or delivery, and evaluations). Dick and Carry created the ADDIE model in 1996 to design learning systems (Mulyanitiningsih, 2016). But, Richey and Klein proposed the ADDIE Model by using D&D Research.

These steps must be taken in a systematic manner to solve problems in English language learning, particularly the use of Wordwall-based digital media to improve students' vocabulary. Furthermore, D&D in this study focuses on how media is created by using ADDIE Model from Richey and Klein (2014).
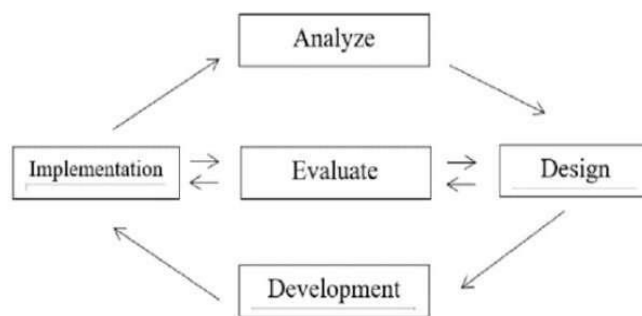
Figure 3.1 ADDIE Model by Richey and Klein (2014)

3.2 Research Setting

The research site was chosen by consideringseveral research criteria. The chosen schools incorporate technological media into the learning process, implement the Kurikulum Merdeka, and English teachers struggle to adapt to the use of media-based curriculum for the Merdeka Belajar curriculum. English must also be taught in the fifth grade of the second semester. As a result, SD Negeri 1 Baktiseraga was selected as the research site. Jl. Laksamana-Baktiseraga, Kec. Buleleng, Buleleng Regency, Bali is where we'll find it.

Because it met the research criteria, this school was chosen as a research location. Prior to the pandemic, this school used traditional methods and only rarely integrated technology into the learning process. This school requires teachers to incorporate technology into their classroom instruction, including English. However, when it comes to teaching and learning, most teachers only use PowerPoint presentations. Aside from that, teachers are having difficulty adjusting to learning English in the Merdeka Belajar curriculum.

3.3 Research Subject and Object

The research subject is aimed at the person or individual studied in this research, while the research object is a small scope which is the focus of this research. The research subject and object can be explained as below.

3.3.1 Subject

The subjects of this study were students in the fifth-grade of the second semester at SD Negeri 1 Baktiseragaas well as their English teacherwho were recruited using purposive sampling as follows in the table below:

Table 3.3.1 Demographic Info

Pseudonym	Experience	Media Used
Teacher 1	Teaching English for 4,5,6 grades at SD Negeri 1 Baktiseraga.	Textbook of My Next Words, Chromebook, PPT, Google Classroom, Quizziz, and Kahoot.

Student 1	5th Grade Student at SD Negeri 1 Baktiseraga	Textbook of My Next Words, Chromebook, PPT, Google Classroom, Quizziz, and Kahoot.
Student 2	5th Grade Student at SD Negeri 1 Baktiseraga	Textbook of My Next Words, Chromebook, PPT, Google Classroom, Quizziz, and Kahoot.
Student 3	5th Grade Student at SD Negeri 1 Baktiseraga	Textbook of My Next Words, Chromebook, PPT,

		Google Classroom, Quizziz, and Kahoot.
Student 4	5th Grade Student at SD Negeri 1 Baktiseraga	Textbook of My Next Words, Chromebook, PPT, Google Classroom, Quizziz, and Kahoot.
Student 5	5th Grade Student at SD Negeri 1 Baktiseraga	Textbook of My Next Words, Chromebook, PPT, Google Classroom, Quizziz, and Kahoot.

3.3.2 Object

The object of this study is to identify the procedure of developing Wordwall-based digital media for teaching vocabulary of fifth-grade students in the second semester at SD Negeri 1 Baktiseraga. In this case the researcher will explain the procedure for developing a product in the form of Wordwall-based digital media using the My Next Words book as additional material for vocabulary learning.In addition, the object of this research will be evaluatethe quality of English materials developed using Wordwall based digital media for teaching.

3.4 Research Procedure

3.4.1 ADDIE Model

Richey and Klein (2014) proposed the ADDIE model for design and development (D&D) research. There are five stages that are used. They are as follows: analyze, design, develop, implement, and evaluate.

a. Analysis

The ADDIE model's first step in the design of courses and teaching materials for online teaching and learning is analysis. At this point, the "overall picture" of the instructional design integrity must be created. This is a "competitive" stage in which the student-centered approach for course or material design is required. In fact, the analysis includes a "planning phase" in which the basic parameters that will be traceable in subsequent phases of the ADDIE model must be identified.

b. Design

In this stage, instructional designers start working on their project. The information gathered during the analysis phase, combined with instructional design theories and models, is intended to explain how learning will be acquired. For instance, the design phase begins with the creation of a learning objective. The designer then identifies and breaks down tasks to make them more manageable. The final step determines the types of activities needed by the audience to achieve the goals identified in the analysis phase.

c. Development

The transition from "contemplative" to "physical" implementation occurs during the development phase. The final structure and content of the course are created at this stage based on all of the elements and parameters defined in the previous two phases. Development necessitates close collaboration between the course author and the person in charge of the technical performance of the course material, which will be set to "on-line" mode. Except where the teacher is also the supplier of multimedia content prepared for a specific platform, such as LCMS (Learning Content Management System), this requires collaboration.

d. Implementation

Because the implementation phase represents the first test of creating the entire course, it is recommended that this phase be conditionally divided into two parts: a test implementation phase and a final implementation phase. Test

implementation should confirm the integrity and functionality of the created course and the accompanying materials, and access to the exchange rate is currently limited to teachers and system administrators, possibly test-users.

e. Evaluation

The ADDIE model allows for the definition of two types of evaluation: intermediate (formative) and summative.

a) Some common tasks and questions at this stage include: b defining the categories within which project effectiveness can be achieved (improved learning, better motivation, etc.)

b) To establish a data collection policy (including strategy, timing, frequency, tools, and so on).

c) To ensure the analysis of feedback from all system participants (instructors, students, etc.).

d) To set up quality assurance tools for instruction clarity, dependability, and content validity (different tools or the same).

e) Define the final output and report preparation holder (will it be an instructor, manager, etc.).

f) ADDIE model makes it possible to define two types of evaluation: intermediate (formative) and summative.

g) Some common tasks and questions related to this stage are:

h) To define the categories within which the project effectiveness can be achieved (improved learning, better motivation,etc).

i) To define data collection policy (including strategy, timing, frequency, tools, etc)

j) To ensure analysis of feedback from all participants in the system (instructors, students, etc).

k) To set-up quality assurance tools for clarity of instructions, reliability and content validity (different tools or the same).

l) To define final output and holder of report preparation (will it be an instructor, manager, etc).

3.5 Method and Instrument of Data Collection

The method and instruments of data collection can be presented in the table bellow as follows:

Table 3.5.1 Data Collection Techniques and ResearchInstrument

No	Stage	Data Collection Technique	Research Instrument
1.	Analysis a. English teaching process, use of media in the teaching and learning process at SD Negeri 1 Baktiseraga. b. Analysis syllabus regarding the materials or topics that are taught in the fourth grade English subject grade fifth semester 2 at SD Negeri 1 Baktiseraga	Observation	Observation Sheet
		Interview	Interview Guides for English teacher
		Document Analysis	Matrix of Syllabus Analysis
2.	Design	Design Blueprint	The draft blueprint was created as a guide for developing Wordwall-based digital media at the vocabulary learning development stage.
3.	Development	Media Development	Draft development of Wordwall-based digital media for

				vocabulary learning.
4.	Implementation validation	Survey		Practicality Questionnaire
5.	Evaluation a) Product Qualitiy	Product Evaluation		Expert and User Judgement Rubric.

In collecting data, the researcher used several methods and instruments which can be seen below:

1. Observation sheet

   The observation sheet served as a guide for gathering information about the classroom observation. This observation sheet consists of various aspects focusing on the use of Wordwall-based digital media for teaching English vocabulary at SD Negeri 1 Baktiseraga in the fifth-grade students of the second semester. Furthermore, this instrument is used to gather information about the media that teacher and students use to learn English.

2. Interview Guides

   The researcher will conduct interviews with fifth-grade English teachers and 5th at SD Negeri 1 Baktiseraga about the media used while teaching English, and how the process of teaching and learning English in the class. This is to obtain information related to learning activities, learning resources and students' needs for the materials used. In addition, the researcher also conducted interviews with the English teacher by looking at the total number of the students in the class to obtain the data.

3. Matrix of Module Analysis

The matrix ofmoduleanalysis was used to determine the topics from the textbook of My Next Words to be developed for fifth-grade students at SD Negeri 1 Baktiseraga in the second semester. This matrix will be created based on the syllabus for second semester of the Merdeka Belajar curriculum.This module analysis matrix includes all of the topics specified in the syllabus. This matrix includes themes and analysis assessments that must or do not need to be developed.

4. Blueprint

The blueprint will be used as a guide by the researchers in developing the English supplementary materials. This blueprint will be a guide for researchers when starting to design Wordwall-Based Digital Media. It will also support researchers in designing and developing Wordwalls with additional material from the My Next Words book.

5. Expert and User Judgment Rubric

The developed product will be evaluated by the researcher using an expert and teacher assessment rubric. Using an expert and user judgment sheet, the reader were given information about the quality ofWordwall-based digital media. The product will be evaluated by two expert judges and users.

3.6 Data Analysis

After collecting data with various instruments, the data was analyzed using a mixed-method approach. The qualitative approach was used to analyze non-numerical data in this study, while the quantitative approach was used to analyze numerical data. Concerning the first research question, which is how the procedures to develop Wordwall as Digital Media to teach vocabulary for fifth grade students in the second semester at SD Negeri 1 Baktiseraga, the researcher qualitatively described the procedures for developing the digital

media based on the ADDIE model. Meanwhile, the numerical data was quantitatively analyzed. It was used to answer the second research question, which is how the quality of developed Word Wall as Digital Media to teach vocabulary for fifth grade students in secondary semester was determined.

Table 3.6.1 Data Analysis

No.	Steps	Instrument	Data Analysis
1.	Analysis	Matrix of Modul Analysis & English Teacher Interview Guide	Formula of Gregory (2000)
2.	Design	Blueprint of Development Wordwall-Based Digital Media	Formula of Gregory (2000)
3.	Development	Media & Expert Judgments	Tegeh & Kirna (2010)
4.	Implementation	User Questionnaire	Tegeh & Kirna (2010)
5.	Evaluation	Based on criteria of revision needed	Tegeh & Kirna (2010) using accomplishment Agung (2010)

In addition, quantitative data analysis is supported by descriptive percentages as a basis for obtaining accurate data from the components in the questionnaire using the formula from Tegeh and Kirna (2010) in Suciningsih(2013), as follows:

$$Percentage = \frac{actual\ score}{SMI} \times 100\%$$

Notes:

Actual score : total answer x value of each selection

SMI : total question x highest value

Measuring the percentage of the total subject, the researcher used the formula:

$P = F/N$

Where

F : total percentage of all subjects

N : total subjects

The revision is needed if the final product had level of accomplishment less than 75%. The percentage will be obtained when the product has been assessed by expert judges. The appropriate indicators are based on the scales provided for each point in the questionnaire. This study employs five scales at the level of accomplishment proposed by Agung (2010) cited in Wiliani (2023). The form of the table was displayed as follows below:

Table 3.6.2 Level of Accomplishment

Level of Accomplishment (%)	Qualification	Information
85-100	Very good	No revision needed
75-84	Good	No revision needed
64-74	Enough	Need revision
55-64	Bad	Need revision
0-54	Very poor	Need revision

3.6.1 Instrument Validity

a) Construct and Content Validity

Construct validity is a type of rational internal validity of an instrument that determines how well the instrument reveals a trait or theoretical construct to be measured. The conceptual framework is the construct in this example. Construct validity, according to Suryabrata (2000), refers to how well an instrument measures what it is supposed to measure based on the theoretical notion that it is intended to evaluate. Construct validation, according to DeVellis (2017), is a method of gathering evidence to prove that assessing a concept or actual application of a theoretical idea is reliable.

It entails determining whether the measurement corresponds to what was hypothesized about the concept under study. Items will be created and evaluated using the adapted theories to determine product quality. The designed instrument is said to have strong construct validity if the results meet the expectations. In other words, the instrument is trustworthy and safe to use.If the instrument items are to be used to measure product quality, they must be assessed after they are built based on theory.

Both of the expert judges are lecturers in the English Language Education studies program at Universitas Pendidikan Ganesha. They aided in the validation of the instrument's contents. Gregory's techniquefrom Candiyasa (2010) was used to examine the findings of the two experts' assessments, and we can comprehend the efficacy of Wordwall-based digital media.

Table 3.6.2 Content Validity

Judges	Judges I		
	Judges Scoring	Less relevant	Very relevant
Judges II	Less relevant	A (- -)	B (+ -)
	Very relevant	C (- +)	D (+ +)

The formula of Gregory (2000) in Candiyasa (2010) was explained above:

Content Validity (VC) = D/A+B+C+D

Description:

VC: Content Validity.

D : Both judges are agreed

A : Both judges are not agreed

B : Judges I agree, judges II not agree

C : Judges I not agree, judges II agree

The content validity is interpreted into five categories expressed below.

The criteria of content

validity:

    0, 8 – 1   = very high validity

    0, 6 – 0, 79   = high validity

    0, 40 – 0, 59 = medium validity

    0, 20 – 0, 39 = low validity

    0, 00 – 0, 19 = very low validity

There are five levels of content validity above. The highest level of validity and good are attained when the validity coefficient is 0.8-1. This shows that the instrument is valid. Meanwhile, the lowest level of validity (extremely bad) is attained when the validity coefficient is between 0.00 and 0.19. As a result, the content need revision.

Several theories about needs were adapted by the researcher. Following that, these statements are built using the adapted theories. To the data collection section, the researcher used several instruments which can be explained below:

1. **Observation Sheet**

In preparing the observation sheet, there is a theory adapted from Andriyani et al. (2019) states that providing interesting activities increases students' motivation and enthusiasm in the learning process. Supplementary media also aid students in learning the target language and acquiring knowledge. Mubar (2015) and Spratt et al. (2012) theories were also adapted to create observation sheets. They stated that effective learning necessitates students' enthusiasm for learning.The observation sheet was used as a guide to obtain information related to classroom observation.

This observation sheet consists of various aspects that focus on the observation of learning materials by using digital media in teaching English for

fifth-grade students of the second semester at SD Negeri 1 Baktiseraga. After collecting some information, the researcher tried to make an observation sheet by looking at several references from Arthawati (2023) and tried to modify it to suit the research that would be carried out in the field, namely at SD Negeri 1 Baktiseraga in class 5A. The observation sheet table that has been completed can be seen as follows:

Table 1.1 Observation Sheet

No	Statements	Available	Unavailable
The Existence of Textbook as Supplementary Material in the Library			
1.	English textbooks as supplementary materials integrated with Merdeka Curriculum.		
The Use of Learning Media as Supplementary Media in the Class			
2.	Using media and materials in English language learning in the learning process.		
3.	Using media in English language as supplementary media integrated to Merdeka Curriculum.		
4.	Using supplementary media in the form of media to support the book named "My Next Words".		
The Learning Process			
5.	The teacher uses student-centered methods in the learning process.		
6.	The learning process students actively participate and can increase students motivation.		
7.	Using supplementary media in the form of digital based media in the learning process.		
8.	The use of supplementary media in the form of media in the learning process can improve students' English language skill.		
9.	The use of supplementary media in the learning process can motivate students.		
10.	The teacher uses technology in the learning process.		

11.	The teacher uses supplementary media in English language learning, especially in teaching vocabulary.		

2. Interview Guide for English Teacher

An interview guide is a pre-arranged list of questions and answers used to facilitate interviews in qualitative research. This interview guide is a framework to ensure the interviewer maintains a consistent approach throughout the interview with the English teacher while asking several questions about the English language learning that has been carried out during the class and discussing important issues to gather relevant information for need analysis. The main purpose of the interview guide is to lead discussions and assist researchers in collecting information about the use of digital media by English teachers to support the learning process at SD Negeri 1 Baktiseraga, especially in the class 5A.The questions to be asked are prepared clearly and in detail to make it easier for teacher to answer and provide the reasons.

Table 2.1 Teacher Interview Guide for Need Analysis

Basic Theories	Response		
	Yes	No	Question & Answer
The education curriculum in Indonesia has changed from time to time. The curriculum currently implemented in schools is the Merdeka curriculum. This Merdeka curriculum focuses on character development in students and emphasizes basic knowledge and student growth according to phases and procedures (Amanda et al, 2023).			**Question:** Does SD Negeri 1 Baktiseraga implemented the Merdeka curriculum for all classes? (Apakah di SD Negeri 1 Baktiseraga sudah menerapkan kurikulum Merdeka untuk semua kelas?) **Answer:** SD Negeri 1 Baktiseraga has implemented Merdeka Curriculum for all grades.

			(SD Negeri 1 Baktiseraga sudah menerapkan Kurikulum Merdeka untuk semua kelas).
Suplementary media is quite effective and efficient in delivering learning materials for students and can also encourage students motivation. In teaching vocabulary using additional media is easier understand in delivering material (Spratt et al, 2012 and Aba, 2019).			**Question:** Does SD Negeri 1 Baktiseraga use digital media for the learning process and what kind of digital media is used? (Apakah di SD Negeri 1 Baktiseraga menggunakan media digital untuk proses pembelajaran dan media digital seperti apa yang digunakan?) **Answer:** Teachers have implemented digital media for learning by using the Kahoot and Quizizz platforms, both media are used at grade 5 level and according to teachers digital media is able to make the learning atmosphere in the classroom more interactive and interesting. (Guru sudah menerapkan media digital untuk pembelajaran dengan menggunakan platform Kahoot dan Quizizz, kedua media tersebut digunakan pada tingkat kelas 5 dan menurut guru media digital mampu membuat suasana belajar di kelas menjadi lebih interaktif dan menarik).
Suplementary media is quite effective and efficient in delivering learning materials for students and can also encourage students motivation. In teaching vocabulary using additional media is easier			**Question:** Is this digital media also used in the English learning process, especially in vocabulary learning at SD Negeri 1 Baktiseraga? (Apakah media digital ini digunakan juga dalam proses pembelajaran Bahasa Inggris terutama pada pembelajaran kosa kata di SD Negeri 1 Baktiseraga?)

understand in delivering material (Spratt et al, 2012 and Aba, 2019).			**Answer:** Teachers use Kahoot and Quizizz to teach English to Grade 5 students by aligning the material in the textbook into digital media. (Guru menggunakan Kahoot dan Quizizz untuk mengajar bahasa inggris pada siswa kelas 5 dengan menyelaraskan materi pada buku paket kedalam media digital).
Textbooks are a medium that is often used in the learning process. The government in Indonesia has provided textbooks in every school from the primary level to the upper high school level in accordance with the current Merdeka Curriculum. The book "My Next Words" is an English book that has been provided by the Ministry of Education and Culture in accordance with the Merdeka Curriculum. (Permindikbud, 2016; Bulqiyah & Ambarawati, 2023).			**Question:** Does SD Negeri 1 Baktiseraga use the book "My Next Word" as a reference material in learning English? (Apakah di SD Negeri 1 Baktiseraga menggunakan buku "My Next Word" sebagai acuan materi dalam pembelajaran bahasa inggris?) **Answer:** SD Negeri 1 Baktiseraga has used the My Next Word book as the main book, but for grade 6 it still uses e-books and grades 4,5 have used physical books. (SD Negeri 1 Baktiseraga sudah menggunakan buku My Next Word sebagai buku utama, namun untuk kelas 6 masih menggunakan e-book dan kelas 4 dan 5 sudah menggunakan buku fisik).
The number of students as a process component has been a concern of previous researchers. To create the quality of education means the learning process must be more effective, one of which is taking into account the comparative capacity of the number of students in one class (Apridasari, 2016).			**Question:** How many the total number of students at SD Negeri 1 Baktiseraga for 5A class? (Berapa jumlah total siswa di SD Negeri 1 Baktiseraga untuk kelas 5A?) Total number of students : 5A : 30 students

3. Matrix of Module Analysis

A technique or framework for organizing and analyzing data is commonly referred in the research as a matrix for module analysis particularly filled and explained in the data analysis stage. The module analysis matrix is validate by the researcher. All of the topics listed in the Merdeka Belajar Curriculum Syllabus are included in the module analysis matrix. This matrix includes topics and analysis assessments which should or not need to be developed.

Table 3.1 Matrix of Module Analysis

No.	Topic(s)	Analysis	
		Need to be developed	No Need to be developed

4. Blueprint of English

This blueprintwill includes five topics for fifth-grade students in the second semester that are relevant to the material provided on the indicators of textbook, and using five aspects of vocabulary by Harmer (1991) to design the Wordwall game-based learning. Furthermore, the blueprint is used to guide the learning process which includes several materialsrelated to the topics and amount of vocabulary targets. After that, the researcher will validated the contents of blueprint, and it was done to ensure that the blueprint for supplementary media to learn English vocabulary included all of the requirements. The blueprint will be shown in the table below:

Table 4.1 The Blueprint of Developed SupplementaryMedia

Unit	Topic	Indicators in the Textbook	Aspect of Vocabulary	Types of Games	Target of Vocabulary	Items

5. **Expert and User Judgement Rubric**

Expert and user assessment rubrics as a tool for evaluating Wordwall-based digital media products using predetermined criteria with a methodical assessment system to make decisionsin carrying out assessments. Content Expert Evaluation Sheet and Media Expert Evaluation sheet will be filled by the two expert judges. Meanwhile, User Judgment Questionaire will be filled by an English Teacher, and five students from 5A Class.

The Expert Evaluation Sheet and Media Expert Evaluation Sheet rubrics consist of a value range of 1-5 with 10 to 11 statements that must be filled in by expert judges after assessing the product. The Content Expert Evaluation Sheet and Media Expert Evaluation Sheet were adapted from the theory of Findawati & Suprianto (2014). Meanwhile, the User Evaluation Sheet has a value range of 1-5 which consists of 19 statements and it is adapted from the theory of Croasmun et al., (2011). The following is a form of expert judges and user assessment rubric as follows:

Table 5.1 Content Expert Evaluation Sheet

(Findawati & Suprianto 2014)

No	Name of Instrument	Criteria	Score					Total
			1	2	3	4	5	
1.	Content expert evaluation sheet	a. The learning objective stated clearly						
		b. The learning objective in accordance with SK/KD/Curriculum/RPS						
		c. The scope and depth of learning objective						
		d. Using the appropriate learning objectives						
		e. Interactivity						
		f. Provide learning motivation						
		g. Contextuality and actuality						
		h. Suitability of the quiz with the learning objectives						
		i. Easy to understand						
		j. Consistency of assesment with learning objective						
		k. The accuracy and consistency of the assesment tool						

Notes: 1) very poor, 2) poor, 3) Average, 4) Good and 5) Excellent

Table 5.2 Media Expert Evaluation Sheet

(Findawati & Suprianto 2014)

No	Name of Instrument	Criteria	Score					Total
			1	2	3	4	5	
1.	Media expert evaluation sheet	a. Using Interactive design						
		b. Communicative media						
		c. Show the creative design						
		d. The effectiveness in using media						
		e. Can be managed easily						
		f. Sound clarity						
		g. Carrying capacity music						
		h. Easy to open and operate						
		i. Can be used on application on web						
		j. Appropriate selection of application or software or tool types for development						

Notes: 1) very poor, 2) poor, 3) Average, 4) Good and 5) Excellent

Table 5.3 The User Evaluation Questionnaire

Croasmun et al., (2011)

NO.	Pernyataan	Response					Note
		1	2	3	4	5	
1.	The animation used is interesting						
2.	Selection of background sound						
3.	Harmony between color combinations and games						
4.	The image presented can be seen clearly						
5.	The background does not distract from the text and Images						
6.	Correct button placement						
7.	Ease of using navigation buttons						
8.	The writing in the game is clear and the type and size of the letters/writing used are appropriate						
9.	The audio used sounds clear and the background sound does not disturb concentration						
10.	There are challenges that will challenge students to Play						
11.	The challenge with each game increases						
12.	There is a reward if the player answers correctly						
13.	There is punishment for players who answer questions incorrectly						
14.	Use of scores in the game						
15.	Quizzes are prepared with sufficient duration						
16.	Game is easy to operate						
17.	The instructions for use presented are clear and easy to understand						
18.	Products can respond quickly						
19.	The use of language is easy for students to Understand						
TOTAL							