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The Development of Web-Based Learning using Interactive Media for Science Learning on Levers in Human Body Topic

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ABSTRACT Integrated curriculum is a popular way to develop 21st-century skills, but most of the materials are written on the books separately. Furthermore, web-based learning is an online learning media that can be accessed using an internet connection anytime and anywhere. However, many educational websites do not apply the principles of effective learning. Besides, the traditional learning methods tend to be bored for the students. In order to solve this problem, this study designed a website education that uses interactive content to assist students in learning levers in the human body topic as one of the integrated science materials. The process of developing an educational website consists of three steps: (1) analysis, (2) design, (3) construction making. This research method used descriptive method, and the experts' judgment will evaluate it on content, language, and media/IT. The questionnaires used the technology acceptance model (TAM) and five-dimensional interactivity to investigate the readability of the subjects' perception responses. The research subject was three science teachers and 31 students on private Junior High School in Bandung. According to the result, generally, it has a good evaluation of each aspect. But, the website education needs a strong signal to access for not taking load time consumer.

Keywords Website education, Levers in the human body, Five-dimensional interactivity, Technology acceptance model (TAM)

1. INTRODUCTION

Education in the 21st Century has been and is being profoundly influenced by technology and globalization (Voogt, Erstad, Dede, & Mishra, 2013). Integrated curriculum is one of the effective ways to resolve some challenges associated with developing 21st-century skills (Drake & Savage, 2016). As a response to 21st century needs, fostering students' creativity has been explicitly included in the school curriculum of Indonesia that use Integrated Science Curriculum to encourage students to see the interconnectedness and interrelationships between the subjects (Asrizal, Amran, Purwani, & Sudargo, 2018; Lykke, Coto, Mora, Vandel, & Jantzen, 2014).

The ministry of education and culture of Indonesia realized that the integration of science literacy education is important. For this purpose, the 2013 curriculum requires science subjects in junior high school to be implemented with the integrative approach to improve the literacy of students in the school (Yuliati, 2013). However, the real condition shows that the implementation of integrated science learning and integration of literacy in the learning process cannot be implemented well because the instructional material still write as separated topic in books (Ardianto & Rubini, 2016; Asrizal, Amran, Purwani, & Sudargo, 2018; Pursitasari, Nuryanti, & Rede, 2015). Besides, Science is one subject that students often find confusing and mistakenly judged as a difficult subject, especially for Physics. Hesti, Maknun, & Feranie (2017) stated that students feel indifferent toward Physics lessons because of the complexity of the concepts. In order to visualize the complex concepts, appropriate instructional material is needed to apply for the teaching-learning process (Asrizal, Amran, Purwani, & Sudargo, 2018; Cook, 2007).

Instructional materials are an important part of the learning process. Educational website technology can

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develop properly to facilitate students to learn a certain material and to support or facilitate the acquisition of knowledge, competency, and skills (Bolkan, Goodboy, & Kelsey, 2016). The young generation is fully aware of the benefit of personal computer and tablet devices, and almost every student has for accessing the internet, mainly for e-learning and playing games (Goh, Bay, & Chen, 2015). Also, the annual survey done in 2007 by Indiana University's High School Survey of Student Engagement (HSSSE), shows that more than 81,000 students in 110 secondary schools in 26 states dropped out of school because they experienced boredom of teaching-learning process on the class. According to Seifert (2004), boredom occurs because of the way of the instructional material is presented, and the students are not fully involved in a class, so they lose the motivation to learn. This condition indicates that many traditional lessons are boring and make the lesson ineffective.

The other way to deliver instructional materials rather than a traditional lesson is through technology with an interactive application that works with Smartphones or Personal Computer, and it is in line with the 21st-century purposes that is marked by the usage or the integration of technology in daily activities (Walsh, 2014; Chawinga & Zozie, 2016).

Keengwe & Anyanwu (2007) argue that technology in education focuses on being a tool for creating the process of learning alive, concrete, and interesting. Web-based technology is often the technology of choice for distance education, given the ease of use of the tools to browse the resources of the web from any devices, and the relative affordability of accessing the ubiquitous Web. Web-Based Learning is an online learning media or a website that has educational goals, and many institutions develop instructional material of science as a media for a source of integrated science learning material (Kenny, 2000; Wang, Cheng, Chen, Mercer, & Kirschner, 2017). The advantages of Web-based learning from others' learning models is one of the learning models that used the technology of the web and using the internet. It can be accessed anytime and anywhere from any device using any operating system like android, windows, and others (Zaiane, 2001). Even though most sites meet the criteria for general information websites, but many educational websites do not apply the principles of effective learning, only 17% have all components of the learning paradigm which are critical thinking, independent learning, evidence-based learning, and feedback; and less than 50% do not meet any criteria because of the content inside the web that does not encourage the readers (Chou, 2003; Cook & Dupras, 2004; Dogan & Dikbiyik, 2016).

The solution to visualize the effective website education is by using the interactive' media for the content as the instructional material that will overcome the student boredom to make the materials easier to understand and to encourage student motivation. Also, one of the materials of integrated science is levers in the human body, which is a combination of physics and biology subject, and that is the sub-topic of the simple machine materials. Holzinger, Emberger, Wassertheurer, and Neal (2008) described that the human body, the chemical substance others are hard to imagine without any multimedia that will show how complex the materials because we cannot see directly with our eyes. While the example of the simple machine can be used in daily life, and the levers mechanism example exists on the human body too that includes skeletal system material. So, it needs interactive multimedia through the video and animation to make it easy to understand and learn.

This research aimed to develop an interactive website education for web-based learning. The interactive website education will use the five-dimensional interactivity of the website (Chou, 2003). The five-dimensional interactivity is (1) Playfulness, (2) Choice, (3) Connectedness, (4) Information Collection, (5) Reciprocal Communication. Those used to measure the interactivity of the website education with the existence of the feedback from the quiz games to measure the readers' understanding after reading the content on the website education. Other than that, to investigate the perceptions of subjects, this study uses the technology acceptance model (TAM) towards the behavioral intention to use the website education (Davis, Bagozzi, & Warshaw, 1989).

This research will be conducted by designing and producing interactive website education for web-based learning that used two ways of communication between the readers and the website itself by giving the feedback. Norman (2000) stated that the interactive website education include: (1) A central role of language (ask for things even if not visible), (2) Richer internal representation of data objects including user history of interaction with documents, applications, web pages, (3) A more expressive interface added more video and others, (4) Shared control proactive computers and agents without human commands. The instrument of the website education will be assessed to the experts' judgment. After that, it will be applied to science teachers and students in junior high school to get the perceptions to respond to the use of the website education.

2. METHOD

Descriptive research was used for this research method. According to Fraenkel, Wallen, & Hyun (2013), descriptive studies describe a given state of affairs as fully and carefully as possible.

2.1 Research Design

The researcher develops website education use interactive media using HTML 5, and it can be accessed from a browser on a mobile phone or personal computer and use the internet connection. The website education

Table 1 Experts' judgment validation rubric result

Aspect	Indicator	Total Checklist		
		Reject	Revise	Accept
Learning Goal Alignment	The content is in line with learning goals		1	5
	The learning goals are clear are significant		2	4
	The topic is delivered clearly		2	4
The relevance of the item content	The combination of the relations between physic and biology subject is the relevance		2	4
	The figure/video/ caption was appropriate and relevance with the topic			6
The balance of coverage of the items in relation to the content	The content and the design of the web is balance, and there is no barrier to each other		1	5
	Follows the norms and conventions of scientific writing accurate each other		1	5
	The choice of the verb from the web is appropriate			6
The Arrange of The Word and Sentence in The Website	The form and choice of nouns, pronouns, adjectives, and adverbs from the web are appropriate			6
	The word order from the web is appropriate			6
	The choice of prepositions from the web is appropriate			6
	The formation of tag questions and elliptical responses from the web are appropriate			6
Motivation	The ability to motivate and attract many users of the web		1	5
Presentation Design	Visual design and sound of the web can enhance interactive for the users		2	4
	All of the hyperlink/buttons work smoothly		2	4
	The web has ease navigation		2	4
Interaction Usability	The web has proportional Display Interface			6
	The web has a good quality of the interface features help the user understand			6

was judged by the experts' judgment on content (Physics and Biology), language (English), and media or design (IT).

2.2 Research Subject

The location of this research was held in one international school in Bandung in the school period of 2018/2019. The school used Cambridge and the 2013 Curriculum. Science teachers accessed the website education, and the population in this research was 7th, 8th, and 9th-grade students have accessed the media to know their perception response.

2.3 Content Analysis

The analysis of content is very important for developing website education as the analysis stages. The need to develop student 21st-century competencies such as creative problem solving and communication to prepare the young generation for the complex global world. An integrated curriculum is a popular way to develop these skills (Drake & Savage, 2016). In this research, the content of the simple machine used in this research is limited by the Indonesian Curriculum 2013 that stated on basic competence 3.3 and 4.3. Levers cover these competencies in the human body topic, and the determination of content is suitable for junior high school students due to encouraging their interests towards science.

The analysis of curriculum about core competency and basic competence indicates the subtopics that will be investigated by students such as (1) Identify the types of a simple machine, (2) Identify how levers as a type of simple machine through the picture and video, (3) Identify the mechanism of levers and the correlations with the human body.

The terms of levers in the human body in this research are explained more about the application of the levers as a part of a simple machine able to apply in the human body, such as ligaments, bones, and muscle that exists on skeletal system topic. The structures form levers in the human body create a movement. In simple terms, a joint (where two or more bones join together) forms the pivot (or fulcrum), and the muscles crossing the joint apply the force to move a weight or resistance. All three types of levers are found in the body, depending on the position of the fulcrum, load, and effort.

2.4 Research Instrument

There are three types of instruments used in this research, which are the characteristic development of the website education, the validation of the website education from three experts, and the readability of the science teachers' and students' perception responses. First, the development of website education consists of three stages. Firstly are the analysis stages, which consisted of: (1) The material analysis, whereas the material was chosen based on the field of study result on junior high school science materials; (2) The user analysis is the suitability whether they were interested in using new technology that applies for learning media or no; (3) The right software necessity analysis is needed for developing the website

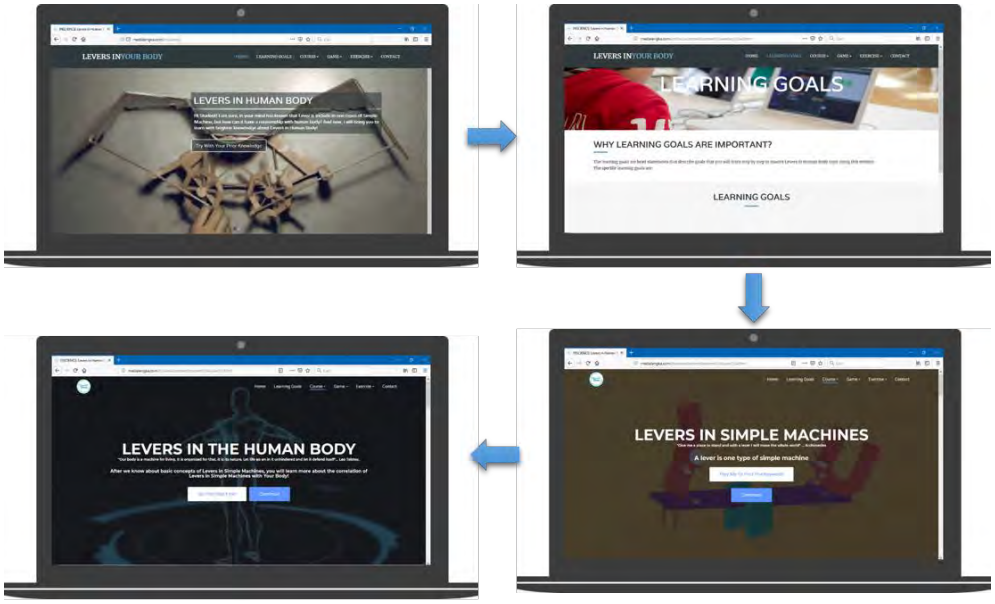

Figure 1 The example of the interface of website education using an interactive media for integrated science, with the link address *http://medialengka.com/inscience*

education (4) The hardware necessity analysis to make sure that the personal computer is compatible enough to access the software. Secondly are the design stages, which consisted of (1) The learning material design, the materials contained in the website education is Levers in the simple machine and levers in the human body; (2) The flowchart design is the illustration of story flow in the development process of the website education; (3) The storyboard design is the plan of multimedia that will be developed based on the flowchart in order to make development stage easier. Thirdly is the development stages that consist of two-step, which consisted of: (1) The construction of interface making that was made based on the storyboard in the design stage. Some elements should be done which are collect the user necessities and define the design conceptually, and then validate it, after that, the problems that arise should be fixed before it can be developed; (2) The construction of coding making, while in interface making stage, the features are still not working yet, and the coding process stage should be functioned in order to make all the features work properly. Second, the experts' judgment validation of the website education, the experts consisted of three experts in content, language, and media. The rubric for the expert judgment was given in the same aspect and indicator, and it is used using accept, reject, and revise. There is not differentiated for judging the materials' content, language, and IT. The reason was for knowing the experts' perspective between all of the indicators and aspects. While, all the content of the items must be carefully evaluated, and the determination of the content validity evidence is often judged by expert judgment (Fraenkel, Wallen, & Hyun, 2013). Third, the science teachers' and students' perceptions respond to the website education, they gave the perception respond after using the website education, and in general, it is called a readability test. The readability level of the website education can exert an influence on the science teacher and students' perception response result, e.g., difficulty in reading the website content or the clearness of the website education might distract from the purpose of a test (Cohen, Manion, & Morrison, 2011). The questionnaire will be used five-dimensional interactivity that fulfills the communications need and engage the student motivation to operate and use the web, Ha & James (1998) proposed it and Technology Acceptance Model (TAM) will be applied extensively for studying information technology due to its effectiveness in assessing the degree of users' acceptance which are the perceived ease of use and perceived usefulness on the behavioral intention that proposed by Davis, Bagozzi, & Warshaw (1989). The scale that will be used in this research is the 5-Likert scale because a few researchers have reported higher reliabilities for five-point scales. While, the questionnaire for science teachers and students will be measured that indicating an acceptable level of internal consistency for a short research survey with non-homogenous items of this kind (Fraenkel, Wallen, & Hyun, 2013). The reliability for the internal consistency of the students and science teacher questionnaire were measured and evaluated by Cronbach's alpha. In general, the minimum acceptable value of Cronbach's alpha is 0.6 (Warmbrod, 2014).

The results show quantitative and qualitative; the quantitative measurement analyzes the questionnaire for science teachers' and students' perspective responses that use the 5-Likert scale and the internal consistency.

Qualitative analysis will describe the validation of the experts' judgment questionnaire and the readability of science teachers' and students' perspective response results.

3. RESULT AND DISCUSSION

The results show quantitative and qualitative data. The experts' judgment validation of website education was conducted before the website education implemented to the science teachers' and students' to know the perception respond that use Technology Acceptance Model (TAM) to know the user behavioral intention and five-dimensional interactivity to know the interactivity and effectiveness of the website. Qualitative analysis will describe the experts' judgment validation result and the science teachers' and students' results towards the development of the website education.

3.1 The Characteristic of the Website Education

The characteristics of the website education that has been developed have two ways communication with the existence of the feedback on the finding keywords games and quiz games, and the content that really suitable for secondary high school students, which are the colorful content, the existence of animation, video, and interactive multimedia. For example, the human body and the chemical substance others are hard to imagine without any multimedia that will show how complex the materials because we cannot see directly with the eyes. While the simple machines can be used in daily life, and the levers mechanism example exists on the skeletal body system. So, it needs interactive multimedia through the video and animation to make it easy to understand and learn. The interface example is shown in Figure 1, and the link to the website education address is *http://medialengka.com/inscience*.

Table 2 Result from the Experts' Judgment on the Content Comment

Experts	Description
First experts' judgment on the content	1. Dominated by physics 2. Add the source of video and animation
Second experts' judgment on the content	1. The content needs to be detailed, the explanation from the video only covers some of the content 2. The answer why for learning goal is not for the student, it is for the teacher, make it for a student, the objective need to be measurable, so the word "How" no need in objective and No need to capitalized each word 3. It needs a more physic component or explanation for the lever in the human body 4. Need more videos
Experts' judgment on language	Good variety (games, videos, text, and graphics, etc)
First experts' judgment on design	The 6 types of simple machines should input the explanation

3.2 Experts' Judgment Validation

The website education will be implemented for science teachers and students. While the content of the items must be carefully evaluated, and the determination of the content validity evidence has to be judged by expert judgment (Fraenkel, Wallen, & Hyun, 2013). Therefore, the experts judgment will be judged by the lectures as the expert to judge according to the field of the content (Physics and Biology), language, and media or design (IT) towards the website education whether it can be rejected, accept or there is a revision and should be revised based on the comment and suggestion from the experts with the rubric that has been prepared.

The rubric for the expert judgment was given in the same aspect and indicator; there are not differentiated for judging the materials' content, language, and IT. The reason was for knowing the experts' perspective between all of the indicators and aspects. Based on the rubric given to the experts, the result is described in Table 1. The table was showed the results' total of the experts that choose or checklist on the option of reject, revise, and accept of the indicator and the aspect. First, for the reject, it showed the total of experts' judgment suggests to delete the content indicator of the website education. Second, for the accept, it showed the total of the experts judgment that accepts the content indicator on website education, and there is no revision, Third, for the revise, it meant there was a revision for the website education and showed the total of expert judgment that gives a suggestion of the indicator

Table 3 Result from the Experts' Judgment on the Language Comment

Experts	Description
Experts' judgment on language	1. The second learning goal is okay, but somewhat "poorer" than the rest because the overall focus, levers, is only a small past. 2. Good except for a small section in the human body section, need consistency between concepts of joints/ligaments and fulcrum. 3. You just need to change the content in the "Levers in the Human Body" section to move clearly describe ligaments/joints as equivalent to a mechanical fulcrum, also in the text change "axis" to fulcrum (or add "or fulcrum")
Second experts' judgment on the content	Re-check the grammar on the learning goals

whether in a language, content, or the design to make a better website education and make more valid, and the result of the website education revision will be described, as follows:

The Result of Experts' Judgment on Content

The content itself is Integrated Science that combined of Physics subject and Biology Subject. The aspects that judged are the contents' objective in line with the necessity of the students in junior high school, the accuracy of content, and the interest in the content. Based on Table 2, the result of the questionnaire, the experts suggested enriching the materials with some more explanation on Physics and Biology materials, whether it is from the video, animation, text, etc., several approaches can be used to develop and deliver web-based learning. Khalifa & Lam (2002) is interpreting the term to include any technology which requires the user to make a response to the information or ideas presented. As well as interactive video, multimedia, hypermedia, computer simulation, and expert systems. This website education as the instructional materials, it can enhance understanding of the concepts easily, especially the existence of game and quiz game. It can encourage the students' motivation to learn the materials by the picture with gif format, video, the colorful interface, and especially for the existence of the game. The game structure a course with a focus on feedback, goals, and interaction as game attributes and the integration of leaderboards as game elements (Alaswad & Nadolny, 2015).

Table 4 Result from the Experts' Judgment on the Design Comment

Experts	Description
First experts' on Media	1. Fill the blank should be input to what? (for the blank, user can click any button without fill the question) 2. Video and animation should input the source 3. The true or false page should be direct to biology material
Second experts' on Media	Some features feel long for loading, and I think that is because of too much animation and videos
Second experts' on content	1. The indicator of the ability to motivate and attract many users of the web need to be improved 2. It can be attractive if there is a comment or live chat on the web 3. It takes time to load the web
First experts' on content	Better to add the indicator of "Motivation" Aspect
Third experts' on content	The Navigation is confusing
The experts' on language	1. I think it is fine for a preliminary student project possibility a little slow to load 2. Once a "continue" button did not lead anywhere, but the system did not hang

The Result of Experts' Judgment on Language

The aspects that judged by the expert on language shown in Table 3; there are contextual spelling, grammar, punctuation, sentence structure, and style for delivering the materials. At first, there is a lot of grammatical error, and the term of the sentence placed that used in this website education. But, for the objective and the materials of the website is already well-implemented. Since this website education is in English, the writing of this website education should be correct in all aspects. The grammar assessment should be recognized both in large-scale and classroom-based contexts (Purpura, 2013). In addition, the website education should be consistent to explain the term. The flexibility and potentially provided in web-based learning made it possible to enable high structure and high dialogue (course design and delivery) at the same time (Huang, Chandra, DePaolo, & Simmons, 2016).

The Result of Experts' Judgment on Design

The background, fonts, compatibility, sounds, graphics, images (accessibility), layout, navigation, and load time are applied for the aspects of this website education. The experts especially noted on Table 4 about the load time to access the website education because there is a lot of animation and video that have proposed to make the website become colorful and interactive, it is important to make the load time shorter, and smooth transition between each feature are strongly advised to be fixed. Srivastava, Cooley, Deshpande, & Tan (2000) also stated the web needs time for prefetching documents in order to reduce user-perceived latency when loading a page from a remote site.

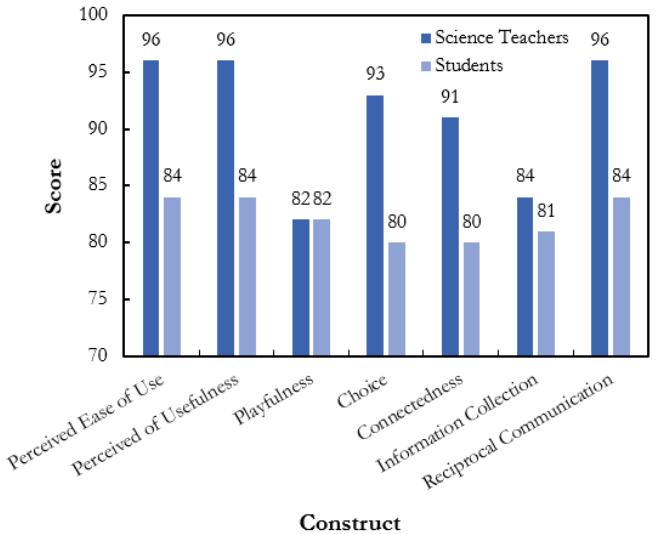

Figure 2 Comparison score between science teachers and students readability perspective respond the result

3.3 The Readability Result of Science Teachers' and Students' Respond

The website education is given to the science teachers and students to know the impression of the perception respond towards using the website education, the explanation of the impression from the science teachers' and the students' respond explained as follow:

Science Teachers' Perception Respond

The website education is judged by science teachers who teach in Junior High School before implementing it to the students. There are three science teachers from Pelita Nusantara Junior High School in Bandung that tried the website education and gave their review, comment, and suggestion. The result was shown in Table 5.

The questionnaire resulted in most of all; the items are categorized on the "Very Good" scale; it is described in Table 5 that has a score range from 80 to 100. The score of the acceptability of the web, which is perceived ease of use, is 96, and the perceived usefulness is 96. The score of the interactivity of the content that uses five dimensions, which is the playfulness aspect is 82, and the choice aspect is 93, the connectedness aspect is 91, the information collection aspect that means the materials score is 84, and the last is reciprocal communication that reaches the highest score which is 96. The overall response from the teachers is positive, which is to support the website education to be used in the teaching-learning process. In addition, Paulsen (2003) described that web education could be a strategy of teaching that used to provide the materials and interactions between the teachers and the students.

Chart Figure 2 shows that all the aspects include in the website education are generally fair and square. The website acceptance, which is represented by perceived ease of use and perceived usefulness aspect, and the interactivity of the website education that is represented by playfulness, choice, connectedness, information collection, and reciprocal communication aspect, has

Table 5 Recapitulation of science teachers' responds regarding the website education

Construct	Item	SD	D	N	A	SA	Score	Result	Average Score
	1					3	100	Very good	
Perceived ease of use	2					3	100	Very good	96
	3				2	1	87	Very good	
	4				1	2	93	Very good	
Perceived usefulness	5					3	100	Very good	96
	6				1	2	93	Very good	
	7			1	1	1	80	Very good	
Playfulness	8				2	1	87	Very good	82
	9				3		80	Very good	
	10				1	2	93	Very good	
Choice	11					3	100	Very good	93
	12				2	1	87	Very good	
	13			1		2	87	Very good	
Connectedness	14				1	2	93	Very good	91
	15				1	2	93	Very good	
	16				2	1	87	Very good	
Information collection	17				2	1	87	Very good	84
	18				3		80	Very good	
	19					3	100	Very good	
Reciprocal communication	20				1	2	93	Very good	96
	21				1	2	93	Very good	
Overall score							**91**	**Very good**	

Notice:

Item 1: The WEB is easy to use; Item 2: The WEB can provide clear guidance; Item 3: The WEB is useful to assist me in learning lever in human body topic; Item 4: The WEB can increase my efficiency to more understand for learning lever in human body topic; Item 5: The WEB can provide useful media like the picture, video, and its' explanation for learning lever in human body topic; Item 6: Using WEB is a good idea to learn lever in the human body; Item 7: The content and the game of the WEB made me satisfy; Item 8: The content and the game of the WEB made me have fun when using the web; Item 9: The content and the game of the WEB made me curious to know more about the topic; Item 10: The WEB provides a choice of links or button; Item 11: The choice button in the start (home) help me to operate the WEB; Item 12: The choice of navigation button is useful to guide me to operate the WEB; Item 13: The hypertext or the button help me to operate the WEB; Item 14: The navigation button of the WEB has a relationship with each other; Item 15: The navigation button of the WEB is working smoothly; Item 16: The WEB ask my prior knowledge, it helps me to assist my previous understanding before I learn lever in human body topic; Item 17: The WEB content about lever in the human body adds my insight; Item 18: The WEB content is useful to help me learn lever in human body topic; Item 19: The WEB providesa link button to give feedback and comment; Item 20: The contact page of the WEB help me to give comment; Item 21: The contact page of the WEB help me to give feedback; SA = Strongly agree, A = Agree, N = Netral, D = Disagree, SD = Strongly disagree

achieved the requirement of a proper website education. The website education as an instructional material aims to help the teacher to give feedback and review to the students (Chang, 2007). Moreover, to engage the student's interest and excitement, the interactivity of the content on the website is supposed to be suitable for junior high school students. The science teachers noted that this website education creates a better-personalized learning experience for students; the evaluation shows 91 out of 100 that categorized as "very good".

Junior High School Students' Perception Respond

The application is implemented to Junior High School students from grade 7th, 8th, and 9th. The students are gathered in the formal class to try the website education to use interactive media, and it does not matter for the students that have been learned about a simple machine or not yet. The number of students who tried the website is from Pelita Nusantara Junior High School in Bandung that consist of 31 students, 7th grade consist of 3 students, 8th grade consists of 5 students, and 9th grade consists of 23 students. The result of students respond is showed in Figure 2

The overall aspects got "very good" in scale. The score of the website for web-based learning is 82, which includes the acceptance and the interactivity of the website to be accessed. The questionnaire is consists of the Technology Acceptance Model (TAM) (Davis, Bagozzi, & Warshaw, 1989) and using five dimension aspects of interactivity (Ha & James, 1998). For the acceptance, the score perceived ease of use of the website is 84, which declares the website is easy to operate, and the score perceived of the usefulness of the website is 84, which is the quality having utility and the website is applicability to be accessed.

The technology acceptance model, the questionnaire is used 5-dimensional interactivity. First is the score of the playfulness of the website is 82 which means the website can encourage the students besides the quiz and the question exist on the game that in-line with the concept of levers in the human body, so the students were playing to reach the higher score because the game has a leaderboard to know who is the winner and the students can know their score after playing the game. Second, the score of choice of the website is 80 of the student's excitement because of the animation and the color of the website and also engenders an internal emotional sense of satisfaction. Third, the score of connectedness is 80, which enhances the feeling of the connection between one hyperlink/button/navigation to another button that will display the material, and it consists of the video, picture, game, animation that have a correlation to one another.

The forth of the five-dimensional interactivity is information collection. In this website, education can be called the material content, and its' score is 81, which declares the clarity of materials is quite understandable and generally helps students to give them more meaningful learning. The last is reciprocal communication after the students tried all the navigation and learn the content they can give a comment and feedback about the website or if they have a question so they can contact the developer through contact navigation button and it has 84 scores.

The students give positive responses to the website for web-based learning. The overall evaluation score of a questionnaire filled by students is 80 out of 100 scale that indicates "very good" evaluation. Students found this website education is easily accessible and helps them to study at home. Du et al. (2013) stated that Web-based learning had been pleasing effects in making a better participants' knowledge and capability of the performance, and in increase self-efficacy in performing capability, with a high gratification rate uttered by participants.

Students found this website is exciting and helping them to understand simple machines with sub-topics levers in human body topic. Especially of the interactivity of the web and the way to deliver the content, it is proven by the score with 81.4 that indicates very good; students learn how to understand the content easily and more encouraging because the existing of the game and the animation to make them not bored while they read and scrolling the content.

Aside from the Technology Acceptance Model aspects, science's teacher responses, and Junior High School students' responses, the prospect of this website education is generally welcomed. They gave positive evaluations towards this website education as it is seen in their answer to the questionnaire and comment and feedback. Students generally responses that website education can make their study easier while inside and outside the class. Website education is defined as one teaching strategy 'in which the web is used to provide the materials and interactions between the students and teachers' (Zapalska & Brozik, 2006)

The Internal Consistency of Science Teachers' and Students' Respond

The result of the internal consistency is showed in Table 6 and Table 7. It is measured by Cronbach's alpha

Table 6 Internal Consistency Result of Science Teacher questionnaire Instrument

Reliability Statistics	
Cronbach's Alpha	N of Items
.825	21

Table 7 Internal Consistency Result of Students questionnaire Instrument

Reliability Statistics	
Cronbach's Alpha	N of Items
.863	21

that estimates the internal consistency reliability of an instrument by assigning how all items in the instrument relate to all other items and to the total instrument (Croasmun & Ostrom, 2011). The result shows the Cronbach's Alpha is 0.825, which means the science teachers' questionnaire instrument is sufficient reliability. In addition, based on Table 7, the result of Cronbach's Alpha shows that the student's questionnaire instrument is 0.863, which means sufficient reliability. Therefore, the questionnaire instrument for science teachers and students is approved to be very reliable because it exceeds more than 0.6 as reliable standards.

In this way, the web-based learning platforms are increasingly used, and the resources supporting students' academic writing is doubtless a developmental area (Åberg, 2016). Working with website education, like the presented one, gives opportunities for continuous development while the results of this study show that students and science teachers realize the potential of web-based learning resources.).

4. CONCLUSION

Website education can be made by developing it in several steps: content analysis, material source analysis, user analysis, software necessity analysis, hardware necessity analysis, the design stage of website education that consists of the analysis of learning materials, flowchart, and storyboard. Then, the development stage which consists of interface construction and coding to make the website learning. After that, it is evaluated by experts in three main aspects, which are content, language, and media. The revisions are taken from experts' suggestions; therefore, website education is evaluated by science teachers and Junior High School students. Based on the validation by the experts' that analyze using the acceptability of the website education, the evaluation overall indicates that there are indicators that need to be evaluated, and there is some indicator too that has been accepting by the experts. Based on the science teachers' review, the applicable score is 91 out of 100, which is very good. The impression of Junior High School students toward this mobile learning application based on questionnaire analysis gains a score of 82 out of 100, which means very good. And based on the internal consistency result using Cronbach's Alpha, the result for the science teacher questionnaire is 0.825, and the result for students' questionnaire is 0.863, both of the results shows that the questionnaire is approved to be very reliable because it exceeds more than 0.6 as reliable standards. Finally, most of the students like learning science more after using the website education using an interactive content that contains the game as the instructional materials to learn levers in the human body topic because they previously known that learning science using a book and on way direction or lecturing method is boring, feel unmotivated. By using website education, the students feel motivated, fun, and able to assist the students in learning levers in the human body. Yet, there are some recommendations for a future study regarding the development of the website education, such as it will be better to increase the generalizability of the finding, to make the subject that is not in the same schools it makes the generalizability of the findings questionable.

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