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STUDENTS' RESPONSES ON THE IMPLEMENTATION OF VIRTUAL REALITY IN TEACHING VOCABULARY

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Abstract: Vocabulary is one of the elements of language that is crucial. Lack of vocabulary can lead to students' inability to listen, read, write, and speak well. The aims of this study are to investigate students' responses on the implementation of Virtual Reality in teaching vocabulary. The participants of this study were six students in eighth grade of a Junior High School in Cianjur. This research applied a qualitative method using questionnaire as an instrument for gaining the data. The findings show that Virtual Reality was perceived variously by the students. The students declared virtual reality as a supportive device, a user-friendly application, and provision of an immersive experience which make them learn vocabulary authentically. However, the students faced some challenges during the learning process including the limitation of supportive device and the negative physical effect such as feeling dizzy and getting headache.

Keywords: students' response, teaching vocabulary, virtual reality

INTRODUCTION

Vocabulary is important because learning vocabulary is the main capital for learning sentence structure and other skills in language. Vocabulary is frequently seen as a key skill for English language learner as Alqahtani (2015) says that because a restricted vocabulary in a second language prevents effective communication, vocabulary is frequently seen as a crucial skill for second language learner. According to another expert, vocabulary appears to be more beneficial and important than grammatical function from a linguistic perspective (Dakhi & Nurfitria, 2019). Moreover, (Irawan, 2017) denotes vocabulary as a crucial component of any language, teaching vocabulary involves learning and introducing new terms to learners, which has numerous advantages and also helps students' English.

Although many students had studied English for many years, they are unable to master the four competencies if they lack vocabulary. Vocabulary is the fundamental unit of language that enable the students to understand English and communicate very well (Rahmania, 2017; Kulsum et al., 2023). In other words, having a strong command of vocabulary can help someone easily communicate their ideas.

Responding to the above problem, the teachers need an effective and fun way to attract students in learning vocabulary. One of the ways is utilizing Virtual Reality. Virtual Reality is the use of computer technology to create a simulated environment (Bardi, 2019). Virtual Reality is a technology that can recreate real and imagined settings and situations with a high level of realism and interactivity, giving users the illusion of being in a real three-dimensional world. Utilizing of Virtual Reality or called VR with 360' video is an innovation in teaching vocabulary. In this research, the teacher uses Virtual Reality box and 360' video as a media to support teaching vocabulary.

Some experts say that Virtual Reality in general, is commonly used in education and training because of its potential for generating involvement and motivation. Besides that, to prove the Virtual Reality has potential for generating involvement and motivation in learning process, the researchers found some previous research to support that statement. Firstly, Chen et al., (2021) found that the proposed VR-assisted PBL strategy significantly improved engineering students' knowledge of specialized English vocabulary. In addition, this study found that Virtual Reality provides a motivating environment in which students can comprehend the importance of English in their future careers and maintain their interest in and positive attitudes toward learning English.. Secondly, Tai et al., (2022) shows the Virtual Reality tool facilitates the acquisition and retention of vocabulary in terms of both word meaning and word usage in context. Additionally, VR-mediated vocabulary learning was entertaining, motivating, and beneficial, and the results of the study suggest that using Virtual Reality to teach vocabulary will increase students' interest in vocabulary class. The third result, Alfadil (2020) reveals the use of Virtual Reality technology into EFL education is a viable strategy that can be more effective than standard learning methods for vocabulary acquisition. The last study was conducted by Madini & Alshaikhi (2017) who demonstrates Virtual Reality videos actually helped the postgraduate students to retain ESP vocabulary and therefore develop their competence level.

Based on the result, it can be concluded that the use of Virtual Reality can give beneficial contribution to vocabulary learning process. However, the study related to this topic is still limited. Thus, this study tries to investigate the implementation of Virtual Reality in teaching vocabulary.

LITERATURE REVIEW

The Definition of Virtual Reality

Virtual Reality is based on the notion of immersion, which is a novel technological advancement in the field of human-machine interaction that brings it closer to real life. It is a technology for simulating a real or virtual world in which one can immerse, touch, and perceive the virtual presence of three-dimensional objects (N. Singh & Singh, 2017). Another expert, Kesim & Ozarslan (2012) say that Virtual Reality is a hardware technology that aims to replace the actual world with computer-generated virtual scenes, 3D objects, and interactivity. Meanwhile, according to Bayraktar and Kareli (2007) cited in Serin (2020), Virtual Reality is a three-dimensional simulation model that gives users the impression of being in the real world and enables them to interact with a computer-generated, dynamic environment.

Elements of Virtual Reality

In Virtual Reality, there are four elements that are important (Engati, 2021). The first element is virtual world. This element is a content that creates a virtual world in the form

of a screenplay or script. Landscape in a virtual world that we can see and explore. The second element is immersion. The sensation that brings users of Virtual Reality technology to feel is in a real environment that is fictitious or not real. Immersion can be divided into three types, namely mental immersion (make the user's mental feel like being a real environment), physical immersion (makes the user physically feel the atmosphere around the environment created by the VR), mentally immersed (giving the user the sensation being immersed in the VR-generated environment).

Additionally, the third element is sensory feedback. This sensory feedback serves to convey information from the virtual world to the senses of its users. These elements include visual (sight), audio (hearing), and touch. Moreover, the last element of virtual reality is interactivity. Interaction is one of the most important elements in, because Virtual Reality simulates a real world sensation for its users, and if the simulated virtual world is rigid and there is no interaction, then the sensation produced is not optimal.

Of all the elements above, the researcher believes that Virtual Reality can affect learning, because Virtual Reality has different features from others, there is mental immersion, physical immersion, mentally immersed, where users can feel like they are in a real environment, and make users physically.

Types of Virtual Reality

There are three types of Virtual Reality by Saeed et al., (2017). The first type is immersion systems (fully-immersive). This type of virtual reality relates to the appearance of the artificial environment that truly immerses the user in the virtual world yet, life in that environment necessitates user activity in order to view the surroundings. In a fully immersive virtual reality, the users would experience situations like they are first-hand. Additionally, it gives users experience to feel physically present in the virtual world and to sense unrestricted movement, physical interaction, and physical feedback by projecting each object to an appropriate distance scale. This type of virtual reality is commonly adapted for gaming and entertainment with special equipment like VR glasses, body detectors, gloves, and sense detectors.

In addition, the second type of virtual reality is non-immersive system. Interaction virtual world simulation does not require the user to be entirely immersed, but it does let the user to sense the real environment and be aware of his or her surroundings. In contrast to immersive, which immerses users totally in the virtual environment. This is a type of VR that allows users interact with a virtual environment, usually through a computer, where the users can control some characters or activities within the experience, but the virtual environment is not directly interacting with the users.

Furthermore, another type of virtual reality is semi-immersive system or collaboration. It allows a virtual tour while connecting to the physical surroundings. The technology is somewhere in between non-immersive and fully-immersive VR. It allows other users to join, cooperate, and interact in the same virtual environment even if they are not in the same area. In a 3-dimensional virtual world, users from all over the world can share ideas and creations in real time. With the help of VR glasses, the users can experience a virtual environment without any physical sensation.

The Advantages of Virtual Reality

There are four advantages of Virtual Reality by Martin-Gutiérrez et al., (2017). Firstly, students' motivation and engagement are increased by virtual technologies. While studying 3D models that enhance their learning experience, students enjoy an immersive

experience and feel like characters. Secondly, virtual technology enables a constructivist learning method. Students are able to interact with virtual things as well as with their peers. As a result, students can study, experiment, and receive feedback, resulting in a learning experience that improves.

Thirdly, virtual technologies are becoming both affordable and widely available. With smartphones, tablets, and videogame devices, recent technical breakthroughs have made Virtual Reality more accessible. Complex gadgets are no longer required, and students can access shared Virtual Reality content via simple online channels such as YouTube. Furthermore, impaired students have better access to virtual surroundings and can engage with virtual items as well as other students. Lastly, virtual technologies enable more interactivity than traditional learning resources. Students feel engaged in Virtual Reality while interacting with concepts, objects, and processes via headsets, tactile gloves, and motion sensors. This immersion allows for the exploration of settings with genuine things that would otherwise be inaccessible.

The Limitation of Virtual Reality

There are four the limitation of Virtual Reality according to several experts cited in Blazauskas & Gudoniene (2020). Firstly, virtual Reality devices can malfunction, and the likelihood of a malfunction increases as the number of learners using these devices grows. Secondly, several participants in Virtual Reality studies reported stomach pain, motion sickness, or minor headaches while using the devices, with as many as 10-20% of users experiencing stomach pain, motion sickness, or minor headaches in one study.

Additionally, students and instructors must spend time learning how to use their Virtual Reality devices. Incorrectly calibrated head-mounted displays, for instance, can result in blurry images and text. Lastly, for their courses, educators or administrators must acquire or create virtual worlds or simulations. Since most teachers lack the time and expertise to develop their own Virtual Reality applications, it is probable that third parties will be required to develop and maintain these programs and their associated content.

Definition of Vocabulary

There are some meanings of vocabulary. Many experts have proposed the definition and explanation of vocabulary. Vocabulary, as one of the language elements, has become the basis to be studied and mastered to build a student's language ability (Nugroho et al., 2015). Another expert, Alqahtani (2015) says that vocabulary is often viewed as a critical tool for second language learners because a limited vocabulary in a second language impedes successful communication.

Furthermore, vocabulary is the list of words in a language that are heard and read and then utilized as a branch of knowledge. It is highly important to build a person's capacity in learning speaking, listening, reading, and writing as the fundamentals of learning language and using it in their life with meaning (Rahmania, 2017). Importantly, vocabulary is important in learning a language, teaching vocabulary plays a key role in language acquisition because mastery of vocabulary will enable pupils master of all language skills such as listening, speaking, reading, and writing (Tawali, 2018). Fortunately, vocabulary does not have rules that the learners may follow or apply to acquire the knowledge or which vocabulary items should be learned first (Susanto, 2017).

Aspects of Vocabulary

According to Nation (2018) in Rohmatillah (2015), there are three aspects of vocabulary that teachers need to be aware of and focus on. The first aspect is the form that involves its pronunciation (spoken form), spelling (written form), and any word parts that make up this particular item (such as a prefix, root, and suffix). An example for word parts can be seen with the word uncommunicative, where the prefix un- means negative or opposite, communicate is the root word, and -ive is a suffix denoting that someone or something can do something. Here, they all go together to refer to someone or something that is not able to communicate, hence uncommunicative.

The second aspect is the meaning which encompasses the way that forms and meaning work together. In other words, the concept and what items it refers to, and the associations that come to mind when people think about a specific word or expression. The third aspect is the use involving the grammatical function of the word or phrase, collocations that normally go with it, and finally any constraints on its use, in terms of frequency, level, and so forth.

Knowing these three characteristics reveals a receptive as well as a producing dimension. As a result, when teachers teach vocabulary to students to increase their knowledge of words and phrases, helping them learn any of these different components aids them in improving their English vocabulary knowledge and use.

Furthermore, vocabulary is also divided into two types by Hatch and Brown (1995) in Susanto (2017), these are: 1) Receptive Vocabulary is the words that students recognize and understand when they occur in context but they are not able to produce them correctly; 2) Productive Vocabulary is the words that the students understand and pronounce the words correctly, and use constructively in both speaking and writing. Webb (2015) in Alqahtani (2015) adds that productive vocabulary as active process where the learners can produce the words to express their thought to others.

METHOD

This research applied a qualitative research design. It means that the data collected was not in the form of a number, but the data derived from observation, test, and questionnaires. Qualitative research is the systematic gathering, organizing, and analysis of textual material obtained from talk or conversation (Grossoehme, 2014). Another expert, Fraenkel et al., (2011), define qualitative as a study in which The researcher attempts to describe phenomena through well-planned and controlled data collection and analysis, and the outcome is not numerical. Case study was utilized in this research's design.

The participants of this research are nine students at Islamic junior high school in Cianjur. The researchers chose six students of eight grade as the participants in this study. They were selected because the researchers had an easy access to conduct the study. The researchers also had teaching experience in this school. They were also chosen based on the purposive sampling by categorizing into low achiever, middle achievers, and high achievers.

To have the result of the study, the researchers distributed questionnaire to the participants who had learned English using Virtual Reality. Researchers used questionnaires to obtain information about the thoughts, feelings, attitudes, beliefs, values, perceptions, personality, and behavioral intentions of research participants (Johnson & Christensen, 2014) regarding virtual reality. The questionnaires consist of seven open-ended questions.

FINDINGS AND DISCUSSION

This is the result of the research question that is about the students' perception toward the implementation of Virtual Reality in teaching vocabulary at second grade of Islamic Junior High School in Cianjur. The data were gathered from questionnaire. According to the students' responses on the observation process, most of the students seemed to be familiar with the use of virtual reality technology. It is also strengthened by their responses on questionnaire that reflects their familiarity with this technology. 75% of the students had experienced virtual reality technology in their daily life.

Enjoyable Learning Process Using Virtual Reality

During the process of learning vocabulary, the students gave positive reaction since they enthusiastically responded teachers' instructions using virtual reality. It is in line with the answers from the questionnaires that show students' positive response on the teaching implementation. It can be seen from the excerpt below.

Excerpt 1

I felt happy to learn English using virtual reality because I can watch various entertaining videos. (Student 3)

The excerpt shows that students felt excited when they learned English using virtual reality due to the entertaining videos they watched. This statement is also related to Nissim & Weissblueth (2017) who declare using virtual reality (VR) learning environments with student instructors increased their self-efficacy and allowed them to be more innovative and creative, according to the key findings of this study. Virtual reality challenges students with active teaching and learning, transforming student instructors into active, innovative participants.

The Ease of Utilizing Virtual Reality

The result of the questionnaire also indicates the students' ease in utilizing virtual reality. Virtual reality can be considered as a simple device that can be accessed easily by the users while the users only need to insert the mobile phone into the virtual reality device. This assumption can be seen from students' statements below.

Excerpt 2

It is easy to use virtual reality. But the number of the virtual reality in the class is only two. So I have to be patient to wait. (Student 1)

Responding to the above excerpt, the researcher highlights most of the users are easy to use virtual reality. As Pino (2020) declares that the virtual reality technology is quite simple to understand and less complex than the users may expect.

Students' Awareness on Vocabulary Increase

Based on the result of questionnaire, the researchers found that most of the students realized that they had increased their vocabulary after being taught using virtual reality. It appears on this following statement.

Excerpt 3

After I watch the video using VA, I got several new words from the videos such as tortoise, submarine, sailboat, and fisherman. (Student 2)

The excerpt reflects students' awareness on the benefit of teaching English using virtual reality, i.e. the increase of vocabulary skill. This indicates that Virtual Reality can increase students' vocabulary while it is in line with Monteiro & Ribeiro (2020) who mentioned that the use of Virtual Reality can improve all levels of language proficiency.

Other researchers also said the visualization capacity of Virtual Reality improved recognition and recall of English vocabulary (Chen et al., 2021).

Immersive Language Learning

During the teaching and learning process using virtual reality, there was interesting point that the researchers observed. The students seem to be encouraged to practice language authentically since the virtual reality allows students to have immersive experiences. It can be perceived from this following excerpt.

Excerpt 4

Using virtual reality is something new for me. I like it because I feel like I do the real action similar to what happened in the videos. I can also use my English although I only know several words. (Student 6)

The utterance of Student 6 indicates virtual reality as a learning media that provides learning situation equipped by immersive environment. By providing real life situation, the students were encouraged to use their English, also it was only limited to several vocabularies they found from the content of the video. This is strengthened by Marr (2021) who declares some people learn visually, so being able to "see" a process rather than reading about it or hearing about it has a much greater impact on them. He further states that virtual reality (VR) can significantly improve the learning process while these "extended reality" (XR) technologies can build immersive worlds where students can visualize ideas and acquire new knowledge and skills in a hands-on manner.

Regarding the previous statement, Meredithkresia (2022) also mentions virtual reality can imitate scenarios that the users are likely to experience in real life, thereby preparing the users for certain situations. Moreover, virtual reality frequently concentrates less on abstract exercises and more on the real-world situations. This practical knowledge is helpful and simple to apply to real-world circumstances.

Moreover, virtual reality engages students, possibly because interacting, creating, and manipulating objects in a virtual environment is exciting and challenging, but also because virtual reality adds precision and allows visualizing objects and processes that would otherwise be impossible to show in a real environment (Gutiérrez et al., 2017).

Students' Motivation Increase

Another students' perspective was also captured from the result of the questionnaire. The researchers found that students were aware that their motivation to know the English words increased. The relevant statement can be seen from this following excerpts.

Excerpt 5

It was my first experience learning English using virtual reality. I felt confused at the first time because I thought English is always difficult for me. But, after I learned, it is quite motivating to learn more new words. (Student 4)

The statement from Student 4 indicates that learning English vocabulary can be motivating when the media selected is appropriate to the characteristics and needs of the students. It is relevant to Martisorov & Kopecek (2017) who state that Virtual Reality learning environments can increase learners interest and motivation towards learning process more compared to 2D animated environments. The motivational effect of virtual reality was also found in another student's answer from the questionnaire as follows.

Excerpt 6

Learning vocabulary using virtual reality is so different with the way I used to learn English at school. I was motivated to remember new English words in order to understand the story of the video. (Student 6)

The above excerpt is still also in line with the benefit of virtual reality. The student said that virtual reality raises the interest to learn new words gotten from the video. Students' motivation and engagement are increased by virtual technologies. While studying 3D models that enhance their learning experience, students enjoy an immersive experience and feel like characters (Gutiérrez, 2017).

Students' Difficulties on Learning Vocabulary Using Virtual Reality

The Limitation of Supported Device

Although using virtual reality could give positive effect on the English instruction process, there were still some limitations faced by the students. The first challenge found is the limitation of supported devices. While virtual reality is included as a technology that needs the support of devices, the users need to provide not only mobile phone but also the virtual reality device and sufficient internet connection. For these reasons, one student mentions this case appeared in this statement.

Excerpt 7

I liked learning English using virtual reality, but I need to have mobile phone and the virtual reality device if I want to learn using this technology again. I do not think it is easy for me to try it.

The difficulty faced by the students is also relevant with the result of the study of Ghavifekr et al., (2016) which stated that one main challenge to implement technology in teaching English is the lack of supported devices. The limited technical support seems to be a common challenge found in learning process utilizing technology. This problem is also approved by the research from Afamasaga-Wright and Farita (2008) in R. Singh (2018) which highlights the teachers' perception on some other challenges to effective integration of ICTs such as insufficient number of computers, time constraints, and user pay system.

The Physical Effect of Utilizing Virtual reality.

Furthermore, the research found another challenge faced by the students when they were learning vocabulary using Virtual Reality. The result of questionnaire shows that there are 35% students felt minor headaches. It is represented in this following excerpt.

Excerpt 8

After I used the virtual reality device, I felt dizzy, and I got headache. I did not know whether this is the effect of using virtual reality or not.

It is related to Kinateder in Blazauskas & Gudoniene (2020) who mention that several participants in Virtual Reality studies reported stomach pain, motion sickness, or minor headaches while using the devices. Moreover, there were also two students who said they felt confused when using Virtual Reality. It is related to Mirzakhani et al. (2010) who point out that Virtual Reality can make the users experience confusion and anxiety. This indicates that the teacher should be careful with the overuse of Virtual Reality.

CONCLUSION

The researchers conclude that this study found various responses from the students towards the utilization of virtual reality. The researchers found that students consider virtual reality as a supportive device to establish enjoyable learning process. The students were excited during the English learning process. Another finding is virtual reality is seen

as a user-friendly application so that the students are easy to access and use the application in learning process. The data also show that the students realize that virtual reality provides them an immersive experience which make them learn vocabulary authentically. Furthermore, the study found that students feel motivated when they were using virtual reality in learning English.

Additionally, there are difficulties found during the learning process using virtual reality based on students' perception. The first challenge is the limitation of supportive device while another challenge is the negative physical effect such as feeling dizzy and getting headache. Responding to the result of the study, the researchers suggested to investigate more comprehensively regarding the virtual reality utilization from the perspective of students and teachers.

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Salsabila, V. A., & Shalwan, M. M. *Students' Responses on The Implementation of Virtual Reality in Teaching Vocabulary*

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