

## Literature Study on The Use of Virtual Reality As A Digital-Based Learning Medium In BIPA Learning

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### **Abstract:**

In this digital era, teachers are required to be able to utilize technology-based learning media. One of the technology-based learning media is virtual reality. Virtual Reality (VR) is a technology that allows users to interact with digitally created and simulated environments that resemble the real world. The approach in this study uses literature studies. Literature studies are conducted by collecting references consisting of several previous studies and then compiled to draw conclusions. The results of the literature review were used to determine the potential use of virtual reality as a BIPA learning medium. The purpose of this study is to describe the role of virtual reality as a learning medium and describe the use of virtual reality in BIPA learning. The result of this study is that virtual reality has many roles as a learning medium and virtual reality can be used as an alternative learning medium in BIPA learning.

**Keywords:** *BIPA learning, digital based learning, virtual reality*

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## Introduction

Instructional media is a media designed in a way special for stimulate thoughts, feelings, attention and will learner so that learning process occurs. Learning media load information in the form of knowledge and activity Study for example reading, listening, observing, answering questions, etc.). Learning media no just object physique However all something that contains material learning that can used For Study For to obtain knowledge, skills and change attitude (Sahid in Efendi, 2018:174).

Utilise use of relevant learning media in learning in class capable optimizing the learning process. For media teachers, it can help to concretize draft or ideas and help Motivate learner For Study active. For students, learning media can spur learner for think critical. Learning media is very useful for help learner in reach the specified competencies. So that the media can used optimally teacher need know needs learner. Instructional Media should arranged in accordance with competencies that you want achieved, materials and characteristics the learner. Teacher can play a role as developer in create and utilize media that is interesting, appropriate and effective for learner.

Paradigm shift to technology and innovation push the shift from the industrial era 4.0 to the society era 5.0. The society era 5.0 is more centered on integration between humans and technology, no such as the era of industry 4.0 which focuses on the utilization of intelligence artificial. In this era technology and innovation utilized for help man in life daily No For replace role human. Utilization technology in learning is very much needed for interesting attention and motivation learners. Therefore that teacher need to design innovative and responsive learning challenge education in the era of society 5.0 (Nais, et al., 2023:143). One of the things that can done teacher for answer challenge That is develop learning media digital based. Digital media is media that contains combination text, sound, images saved in digital format and distributed through Internet Network.

Bahasa Indonesia bagi Penutur Asing (BIPA) are learning Language second for speakers of the language the first not Indonesian. During the learning process teaching BIPA the role of media is very important and needed for make it easier learner in Study Indonesian. One of the technology that is currently develop moment This is virtual reality or abbreviated with VR. Virtual reality (VR) is technology that makes user can interact with existing environment in a computer - simulated virtual world, so user feel be in environment The advantages main from virtual reality (VR) is experience that makes user feel real world sensation in cyberspace. Even development virtual reality technology today This allow No only senses sight and hearing only one can feel sensation real from the virtual world but also other senses (Herlangga, in Prastiyanto, 2018:35).

Virtual reality technology has Lots applied in various field like medicine, aviation, education, architecture, military, entertainment, and so on. Virtual reality is very helpful in simulate something difficult for presented in a way directly in the real world. Of course, this more practical and more economical.

Virtual reality also has potential applied in learning, one of them BIPA learning. Virtual reality can utilized in learning Because can help presenting the real world in the form of cyberspace for example For observe a faraway place Enough using this virtual reality media so We can feel as if like go direct there.

Interview has done to student foreigner who is Study Indonesian for analyze the necessary requirements as material for choosing the right learning media. From the results interview the obtained the problems they face experience in Study Indonesian language, namely lack of ability they in communicate in Indonesian language in general active.

As a virtual reality learning media can give good profit. Learning media This can make learning become more interactive. VR allows student for involved in a way direct with material learning, for example student can visiting ancient times through VR simulation featuring situation and conditions everyday at that time. Apart from that, the use of this media can increase engagement and motivation. Engagement is key for effective learning, and technology impressive give level high involvement. Students tend more motivated For Study when they involved in a way active in experience interesting and interactive learning.

Based on problems that have been explained above so done study with title studies literature the use of virtual reality as a learning medium digital- based and its uses in BIPA learning with purpose (1) to describe the role of virtual reality media in learning, and (2) describing utilization of virtual reality media in BIPA learning.

## Methods

Research methods used is studies literature. Research with studies literature is A research whose preparation The same with study other will but sources and methods collection the data with taking data from the library, reading, recording and processing material research (Melfianora, in Mufti, et al., 2020:95).

Types of data used secondary data. Secondary data collected with do studies library to books, journals, articles scientific thesis and other related matters with digital learning media, Virtual Reality, and BIPA learning media. The data obtained Then compiled, analyzed, and concluded so that get the conclusion from some libraries and research previous for answer the role of virtual reality media as a learning medium digital based as well its utilization in BIPA learning.

Methods used in studies literature This is review systematic. The purpose of review systematic This is for identify, review, and evaluate researches certain relevant so that answer question in a study.

Search studies literature with using [the Garuda - Garba Digital Reference](#) database web (kemdikbud.go.id) Keywords used For search is a learning media, virtual reality, BIPA learning. While literature in the form of book with use application national library with the keyword virtual reality. Through search studies literature in the online database found 10 books that discuss about virtual reality learning media and then selected and found 3 books that meet the requirements criteria. While For article 125 articles were found discussing about virtual reality and then selected and found 7 articles that meet the requirements criteria.

## Results and Discussion

### The Role of Virtual Reality Media in Learning

Development technology make somebody for own lots of ideas for innovate. One of innovation the is virtual reality technology Virtual Reality can defined that VR is technology that can make the digital world feel real for its users.

Use VR method in learning considered more efficient matter This because VR can done wherever and whenever without bound space and time during is at in network and VR can make the world like real. Inside a number of study, VR is the most common medium get response positive from among students because VR is capable show the virtual world like picture or videos that are of a nature dynamic that can bring students as if is at in that world so that make interesting learning.

From the results search in books found the role of VR in learning. Books First titled *Mudah Membuat Game Augmented Reality dan Virtual Reality berbasis Konflik Kognitif sebagai Media Pembelajaran Abad Ke-21* essay Mufit, et al. stated a number of role or benefits of VR in learning among others: (1) VR makes material learning easy understood participant educate, (2) VR technology can increase the desire know participant educate and motivate participant educate for learning, (3) VR technology can help remove boredom, (4) VR can make activity Study become more fun, (5) the use of VR can simplify the process of activities Study teach.

Book second titled *Desain Virtual Reality menuju Pembelajaran IPA Sekolah Dasar di Metaverse* essay Thohir, et al. stated a number of the role of VR in learning. Allesi and Trollip in Thohir says VR has superiority among others (1) allows student to obtain an experience that is not exist in the real world, (2) can control complexity condition during the learning process in progress in accordance objective instructional, (3) besides That existence simulation computer can provide and facilitate student with environment learn more conducive compared to the actual environment.

Book third titled *Tren Media Pembelajaran di Era Pendidikan 4.0* essay Ramansyah, et al. to expose advantages of learning media VR- based among others (1) provides real experience for users, (2) students capable Study more active and independent, (3) learning media nature interactive capable increase motivation Study students, (4) media capable make it easier for teachers to to explain material lesson.

Pantelidis in Thohir, et al. stated that the advantages of VR are: can interpret something compared to moment using learning media others. The VR nature is immersive or as if looks real allow making learning media three dimensions from various corner vision start from far until close. VR can also make user in in matter This student for observe and see in detail a material for example parts certain. In addition, the presence of VR can make student observe connectedness to the environment. In addition, other advantages of VR according to Pantelidis, namely can increase student in participate active during the learning process. This is also in accordance with definition from VR which states that interactivity is component in draft basics on VR. So, students always directed for do interaction to virtual environment that has been delivered.

Nurbadi in Thohir, et al. stated that excess from VR in learning that is relatively easy application used students, can make it easier student in Study Because material served with good and object the material raised seen more details. Dubovi in Thohir, et al.

said existence learning use VR technology has bring up a number of theories and perspectives education specifically perspective constructivist, as well as theory learning that is realized Together with approach learning experienced.

Cuesta and Manas describe technology This as a tool that is capable break in obstacle room stone in educational context so that reach learning experience. According to Petersen, the use of VR in learning can create virtual space three dimensions that can interact with sensory system man with provide various visual, auditory stimuli even touch to students. This can also used student for Repeated Practice so many times can increase efficiency and effectiveness learning without add cost.

The advantages of VR in learning according to Thohir among other things VR allows making scenario complex testing, experiments, and difficult experiments applied in real world settings. This is allow somebody For get trust self in apply procedures and activities technical. VR can save money and time related with arrangement in actual testing. VR allows student do Exercise anywhere and anytime just.

From the results search in article found the role of VR in learning as Next. First article essay English in his article entitled *Inovasi SAVARI (Sistem Informasi Virtual Reality) Pengembangan Media Virtual Tour Tematik Bagi Anak Usia Dini*. English succeed develop Virtual Reality products that have role in learning namely: 1) System information VR nature that can give information a objects that can seen visually in 3D shape of building space, 2) System information VR nature that can give information in audiovisual form, 3) System information integrated VR nature with system information geographical (Street View Google Maps), 4) System information VR nature that can give education every object. 5) System information VR equipped instruction direction for visitors, as well as equipped with storyboard as complement, 6) Efficiency value time and cost for can visited virtually. and 7) Literacy values about wisdom local use digital gadgets.

Second article essay Wiradhika, et al. in his article entitled *Pemanfaatan Teknologi Virtual Reality Untuk Meningkatkan Kemampuan Menulis Siswa*. Wiradhika, et al. explained the role of virtual reality as a learning medium namely the learning process with using digital media Virtual Reality or VR can beneficial for the learning process. So, VR media is very possible for applied in learning Indonesian for increase interest Study students. This is aiming for grow develop interest student in increase competence Indonesian vocabulary of students. So, students in communication daily can use good and correct Indonesian Because has sufficient word mastery in Variety sufficient Indonesian Lots.

Third article essay Sunarni titled *Persepsi Efektivitas Penggunaan Media Virtual Reality*. Sunarni explain that the learning program VR media is sufficient way effective for reach objective learning that has been determined Level of achievement effectiveness use of VR media (sample) in learning for reach objective competencies that have been set in learning eye manufacturing process lecture is 40-60% and can reach objective learning (100%) if the performance of the media is very good.

Next, the article fourth essay Adryansyah, et al. in his article entitled *Perancangan Multimedia Teknologi Virtual Reality Dan Augmented Reality Sebagai Media Pameran*

*Digital*. Research This present Digital Exhibition with implementation Virtual Reality and Augmented Reality technology. Of course, with implementation technology this can also be give atmosphere different exhibition Where far more interesting and impressive interactive. Implementation technology this will also make visitors can see in real-time so that work the Far more delivered to visitor's exhibition

Fifth article essay Dumayanti, et al. entitled *Penerapan Media Berbasis Virtual Reality Untuk Menumbuhkan Kreativitas Peserta Didik Dalam Pembelajaran Bahasa Indonesia*. Research Results show that through learning media based on technology this. language teacher Indonesia class 3 MIN 1 Medan City has succeed grow creativity participant educate in learning Language Indonesia marked with participant educate capable disclose what happened with style creative talk, besides That participant Didi is also capable take message or mandate even conclusion from A the story given through virtual reality media. With Thus, students become more spirit and compete with participant educate others to show creativity they.

The sixth article by Pramesti, et al. with title *Systematic Literature Review: Pemanfaatan Virtual Reality (VR) Sebagai Alternatif Media Pembelajaran*. Using VR as a learning medium own sufficient benefits varies. Based on the review of articles that have been done, at least There are 8 benefits use most there is in improving understanding, clarity, or knowledge of participants study about material lessons that are practiced, In addition, the goal most furthermore is related with psychology of the participants, such as increase motivation in self, interest, satisfaction, engagement, or experience use during using VR as a learning medium, where VR technology can integrate a number of approach learning, one of them is gamification or learning game based. Other purposes are for increase ability technical, improve power remember, as tool help the learning process, improve effectiveness learning, and improving reasoning analogy.

Seventh article by Shabir with title *Ujicoba Penggunaan Teknologi Virtual Reality sebagai Media Pembelajaran*. Based on response recorded participants Through Google Forms, the use of VR has impact positive for interest Study and convenience in understand material. As many as 51.8% of participants claims VR improves Spirit learning, 21.4% felt interest study it to overflow so that want to Study more Lots Again using VR. Most of Participants (83.9%) enjoyed the learning process use Youtube VR. The size interest Study participant during the VR trial period, making 71.5% of participants the more interested For more often using VR in learn knowledge new.

From several the opinion above so can concluded about the role of VR as a learning medium among others as following.

1. VR makes material learning easy understood;
2. VR technology can increase the desire know;
3. Motivate participant educate For Study;
4. VR technology can help remove boredom;
5. VR can make activity Study become more pleasant;
6. the use of VR can simplify the process of activities Study teach;
7. give real user experience;
8. participant educate capable Study more active and independent;
9. instructional Media nature interactive capable increase motivation Study student;

- 10. media capable make it easier for teachers to to explain Lesson materials and activities technical;
- 11. VR can save money and time related with arrangement in actual testing. VR allows student do Exercise anywhere and anytime just;
- 12. virtual reality is very helpful in simulate something difficult for presented in a way directly in the real world. Of course, This more practical and more economical

**Utilization of VR Learning Media in BIPA Learning**

Instructional Media using virtual reality (VR) to become one solution alternative for give practice learn something new and fun for BIPA learners.

VR media can utilized at BIPA Level 1 aspect skills speaking on competence Basic 3.2 Able to express and ask questions answer about direction, location, environment around, and activities daily. There are three indicators on this KD namely as following.

Table 1 Indicators of KD 3.2

Basic competencies	Indicator
3.2 Able to express and ask questions answer about direction, location, environment around, and activities daily.	3.2.1 Use related words and phrases with direction in form sentence simple in a way oral. 3.2.2 Using sentence related questions with information direction, location, environment around, and activities daily. 3.2.3 explains direction, location, environment surroundings and activities daily with use sentence simple.

VR media can utilized For reach competence the basis above. One of them namely with using google maps street view with VR features or using google earth 3D. Latest features from Google Maps called "Immersive" is ability for give more experience deep and realistic in explore location use digital map. The display like following this.



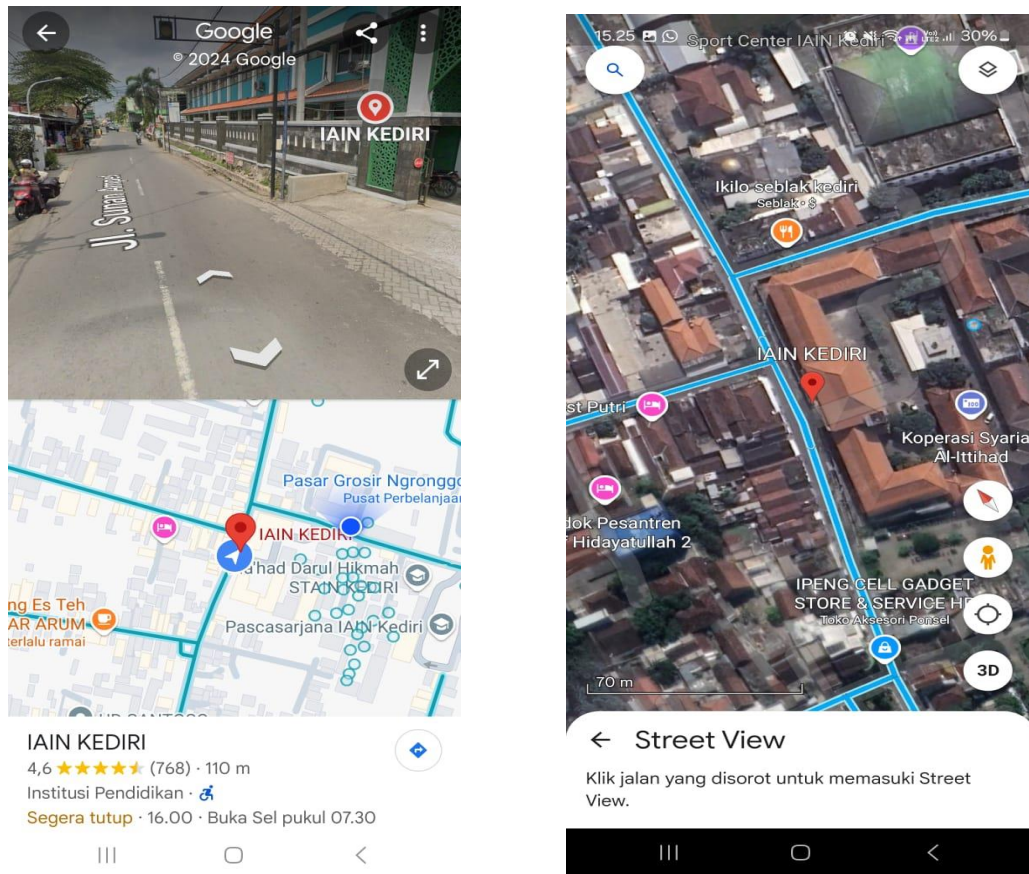


Figure 1 Google Maps VR view

The learning steps among others (1) forming group, (2) observe digital map on google map above, (3) interconnected ask answer about direction going to place certain for example from IAIN Kediri campus towards to place stay.

Utilization of learning media use virtual reality technology is very useful. Using virtual reality technology can help increase interest Study learner Because own aspect entertainment and can make A 3D objects visible real (Hendrayana, 2022).

VR media can also utilized at BIPA Level 4 aspects skills speaking on competence Basic 3.3 Able to convey opinion in discussion / speech / lecture with spontaneous speech and clear pronunciation. There are two indicators in this KD namely as following.

Table 2 Indicators of KD 3.3

Basic competencies	Indicator
3.3 Able to convey opinion in discussion / speech / lecture with spontaneous speech and clear pronunciation .	3.3.1 convey opinion in a way oral in discussion / speech / lecture with spontaneous speech and clear pronunciation. 3.3.2 Giving answer to question partner speak when discuss / give a speech / give a lecture with spontaneous speech and clear pronunciation .



Teaching giving a speech can also be utilise VR technology such as research conducted by Jasuli and Fitriani entitled *Development of Public Speaking Learning Media Based on Virtual Reality (VR) Technology for Students of IKIP Budi Utomo Malang*. Technology This can help student in practice public speaking skills for simulate A environment real or abstract as field three Dimensions. Environment This can in the form of A a virtual audience where students as if is at in a large forum and environments similar. With media based This VR technology, students can choose what event only they need. Students can also practice in a way independent without must there is many people with sensation real that is felt.

## Conclusion

Instructional Media Virtual Reality based is very useful in the learning process. The benefits include (1) VR makes material learning easy understood; (2) VR technology can increase the desire know; (3) motivate participant educate For learning; (4) VR technology can help remove boredom; (5) VR can make activity Study become more fun; (6) the use of VR can simplify the process of activities Study teach; (7) give real user experience; (8) participants educate capable Study more active and independent; (9) learning media nature interactive capable increase motivation Study students; (10) media capable make it easier for teachers to to explain Lesson materials and activities technical; (11) VR can save money and time related with arrangement in actual testing. VR allows student do practice anywhere and anytime only; (12) virtual reality is very helpful in simulate something difficult for presented in a way directly in the real world. Of course, This more practical and more economical.

VR media can also utilized in BIPA learning for competence Basic 3.2 Able to express and ask questions answer about direction, location, environment around, and activities daily and 3.3 Able to deliver opinion in discussion / speech / lecture with spontaneous speech and clear pronunciation.

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