Utilizing 3D Technology to Support Language Learning

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Abstract. Problems that often arise in the teaching and learning process are inadequate and communicative learning media, limited space and time, and inappropriate learning methods. To minimize these bottlenecks, software should be used. This paper aims to use the software as a medium to support language learning. The software used has been produced and released on the Playstore to be used in language learning, increase vocabulary, and improve foreign language skills. The research method used is the descriptive content analysis study method. The aim is to solve and answer existing problems, and the main goal is to objectively describe the conditions and issues that occur in the description. The analysis is carried out on international, national and similar sources related to 3D Technology.

Keywords: 3D Technology; Language Learning; Communication, Software

1 Introduction

The process of globalization and internationalization, digitalization and technological developments as well as their application in the learning process have significantly affected the learning process [1], [2], [3], [4], [5], including language learning [6], [7], [8]. The 21st century brings new challenges in all areas of life, including education. Technological advances have a positive impact on the world of education. that provide many offers and options for the world of education to support the learning process is about Technology Information, especially for technology computer, both of hardware and software, and mobile learning, learning media and applications [9], [10]. Technology will not be a stranger in education because almost all educators are given various information related to technology. Technology will create changes in the teaching and learning process [11]. The use of mobile technology has a significant contribution to the world of education [12]. Many applications have been provided in the Playstore or Applestore, existing applications such as multimedia, which will later attract students' attention in learning so that they can improve memory and understanding [13].

One existing learning is language learning; language learning is the mother of communication. Language learning is faced with a new environment, namely traditional learning and combining digital technology and various learning resources related to language [14], [15]. In this case, language learning must be preceded by vocabulary, so that second language users can know the intent or meaning of the language. Something abstract cannot be explained without the help of technology [16], because in this case, educators have different

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ability limits. For this reason, application development was born that can be used to recognize something that is not complete until it is complemented by one another. The application is called 3D technology. This is one of the technologies that are developing in Indonesia [17].

Animals 4D+ is a product created by Octagon Studio. This is a technology startup are specializing in providing Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR) products and solutions and based in Indonesia and Ireland [18]. The Animals 4D+ application is 3D (3D). Augmented Reality (AR) was first used for advertising in the automotive industry In marketing. AR technology is a technology that allows the merging of 3-dimensional virtual objects with actual Reality. An example is a magic book that provides a high user experience to its users [19]. AR technology is aims to simplify users' lives by bringing virtual information to their immediate environment and an indirect view of the real-world environment, such as live video streaming [20].

Virtual Reality (VR) technology is a promising technology where users will see the same virtual world as the real world. Currently, virtual reality development in Indonesia is not so rapid, although virtual Reality in developed countries is very promising. In Indonesia, there is almost no use of VR to develop teaching materials. Smartphone users with game applications still dominate VR in Indonesia. In this study, we try to utilize existing applications as a medium in language learning; the focus of the material is vocabulary about animals.

2 Method

The descriptive content analysis study method was used in this research method. The content analysis whose purpose is to describe certain information or text in this method [21]. The investigation is carried out on articles about 3D technology or Virtual Reality (VR) technology published in the form of scientific papers and published in international, national and various other similar sources and journals.

3 Result and Discussion

The learning methods used to support the current teaching and learning process, especially in language learning, both Arabic and English, still use two-dimensional textbooks. Seeing the phenomena in language learning, especially from the evaluations carried out by many educators, shows that students' achievement in speaking in foreign languages is still low, so it is necessary to improve their language, especially in adding vocabulary. Students are less interested in memorizing vocabulary without any natural objects when learning a language. It is undeniable that today's students cannot be separated from their smartphones. With the development of 3D Augmented Reality technology which is contained in smartphones that can be accessed and used individually, it is expected to provide innovations in education, especially language learning. It is hoped that the application of 3D technology, known as Augmented Reality, will make students more interested and enthusiastic in learning to speak the language. And make students not bored in learning the language. to change the use of technological achievements in the learning process the development of science and technology was increasingly encourages people [22]. Educators must be able to use the tools prepared at school. In addition to using or utilizing the tools provided, educators must also develop skills in producing learning media; if the media has not yet entered the learning process, then the media will be used or applied [23].

One of the efforts to create more meaningful and quality learning and assist teachers in providing topics is by using the media in the learning process is. [24]. Educators in the learning process are administered through the use of media. Media makes it easier for educators to teach students in the classroom. The position of the media has an important influence on student learning outcomes when evaluating.

Animation is one of the educators' choices in supporting the teaching and learning process that is interesting, fun, not boring for students, increases student learning motivation, and fosters understanding in students or students about the material being taught quickly and accurately. The existing animation is a series of several images that are put together to form a movement and have advantages compared to other learning media, such as static images or text [25]. 3D animation media, according to [26], is media contains a collection of images that have been processed in such a way that it produces a movement and is equipped with audio so that it has a lively impression and has learning messages. 3D animation media is learning that can be used as a set of ready teaching materials and can be used at any time to deliver or explain learning material in class [26].

3D animation media is a media that contains a collection of images that are managed in such a way that creates or produces movements and is equipped with audio so that it has an actual or live impression and has and stores learning messages in it. This 3D animation media can be used as a teaching media device that is ready to be used at any time to deliver learning material [31]. According to [22], 3D media is a dimension that has space. The use of animation media in learning activities can stimulate students to be more enthusiastic and motivated in learning. Their attention is focused on the material explained by the educator. Animation has its role in education, especially in improving the quality of the learning process. The use of animation media in a learning process can also lead to positive benefits or specific values on student learning outcomes. According to [32] the benefits or discounts of this animated media resulting from the use of animation media in a teaching and learning process are: (1) Animation media can facilitate students in understanding a very broad lesson, wherein this animation media contains Various kinds of concepts, realities or facts, and certain principles related or related to the subject matter discussed by the educator; (2) Animated media can also facilitate or assist an educator in delivering learning material in class; (3) Animated media can also increase the satisfaction and success of students' learning in accordance with the expectations of each educator; (4) Animated media can also improve students' learning achievement, behavior and learning methods of students who are satisfied and successful with their learning process; (5) Animated media can also increase achievement in learning, attitudes or behavior and effective ways of learning for students and create or grow very high perceptions of things that have been and will be studied.

Developments in Indonesia are 2016, which Indonesian IT experts consider the year of virtual reality [33]; learning media with AR is instrumental in improving the learning process. This is because AR has characteristics and functions that are almost the same as teaching media, namely the role of conveying information between recipients and senders or educators with students, can clarify the delivery of information provided by educators and students in the learning process, can give motivational stimulation and interest in learning. [34].

Virtual learning is more interesting; the advantages of virtual learning are that students will be more active and critical in education. Through virtual education, students will be more active and vital in expressing their opinions because this learning is individual and requires students to be dynamic and critical in education. Learners can get a comprehensive source of information. Learning that involves the internet network allows students to obtain information from anywhere so that it is not limited. The development of science and technology directly or

indirectly affects all aspects of life without the educational element, namely the emergence of technological products that can be used in the learning process. Currently, education is influenced by various changes by the demands and needs of the community and to be able to answer domestic problems and global changes that are happening so rapidly. Changes and issues in the field of education include the development of science, the development of technology and information, and socio-cultural developments. At the same time, the Indonesian state is still lacking in producing quality human resources to compete in this era of globalization, Fajar said in a statement [35]. Computer technology is no longer only known as a work aid or entertainment device but has developed into a tool in the learning system (computer-aided learning / CAL). [36].

4 Conclusion

Learning using 3D technology makes it easy to transfer information in various situations and conditions in real terms. The multiple benefits of the ease of learning 3D technology are supported by multiple technologies developers have made; all they have to do is use and make innovations ranging from free to paid ones. However, this needs to be evaluated and adapted to local conditions, considering the different abilities of parents, teachers and educational institutions in providing 3D technology learning facilities. The key is to maximize the ability of students to increase vocabulary so that they can compete and fluently pronounce and know the meaning or meaning of a word.

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