NEED ANALYSIS FOR THE DEVELOPMENT OF AUGMENTED REALITY APPLICATION TO TEACH ENGLISH VOCABULARY FOR BARUNAWATI HIGH SCHOOL

THESIS

Submitted in partial fulfillment of the requirement for the degree of Sarjana Pendidikan (S.Pd) in Teaching English



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ABSTRACT

Bimantoro, Renaldi. (2020). Need Analysis for the Development of Augmented Reality Application to Teach English Vocabulary for Barunawati High School. Thesis. English Language Education Department, Faculty of Tarbiyah and Teacher Training, Sunan Ampel State Islamic University. Advisor I: H. Mokhamad Syaifudin, M.Ed, Ph.D, Advisor II: Rizka Safriyani, M.Pd

Keywords—vocabulary, need analysis, augmented reality

Vocabulary is the difficult material in English because it is a specific material. That is why a lot of students have a lacks of vocabulary. The problem also comes from the students feel lazy if they read the book. To solve that problem, as a teacher must be creative and try utilize the digital-based media and also online media. Like the example of Augmented Reality application, it is online-based media that need mobile phone to work that application. Before the Teacher use the media, first thing that must to do is need analysis. The need analysis purpose to know the Augmented Reality is suitable or not with Teacher's needed. The objectives of this research are to explore the teacher's need in teaching vocabulary through Augmented Reality application and to find out what are the teacher's strategies in addressing the challenges of using Augmented Reality to teach vocabulary. This study explained by using qualitative case study and interviewed one English Teacher that selected by purposive sampling. A case in Barunawati High School was the students got permission to use their mobile phone and this study was conducted while pandemic corona virus disease (covid-19) happens. This research showed that the teacher needs Augmented Reality to teach vocabulary and agree to use it in the classroom. She argued with digital-based media it will attract the students focus and also with the mobile phone they will like to use it. The Teacher's impression of Augmented Reality is excited because it is new media. Even though the Augmented Reality is a new media in the school, the Teacher stated her strategies to make the goals of the teaching learning process successful and minimize the students' excessive using in their mobile phone. There are three strategies that must be applied when use the Augmented Reality, first ask to anyone who have better understanding, second controlling the students, and the third divide the students into a group.

ABSTRAK

Bimantoro, Renaldi. (2020). Need Analysis for the Development of Augmented Reality Application to Teach English Vocabulary for Barunawati High School. Thesis. English Language Education Department, Faculty of Tarbiyah and Teacher Training, Sunan Ampel State Islamic University. Advisor I: H. Mokhamad Syaifudin, M.Ed, Ph.D, Advisor II: Rizka Safriyani, M.Pd

Kata Kunci—kosakata, analisa kebutuhan, augmented reality

Kosakata adalah materi yang sulit dalam bahasa Inggris karena merupakan materi yang spesifik. Itulah sebabnya banyak siswa yang kekurangan kosakata. Masalah juga datang dari siswa yang merasa malas membaca buku. Untuk mengatasi masalah tersebut, sebagai seorang guru harus kreatif dan berusaha memanfaatkan media berbasis digital maupun media online. Seperti contoh aplikasi Augmented Reality, merupakan media berbasis online yang membutuhkan handphone untuk menjalankan aplikasi tersebut. Sebelum Guru menggunakan media, hal pertama yang harus dilakukan adalah analisis kebutuhan. Tujuan analisis kebutuhan untuk mengetahui apakah Augmented Reality sesuai atau tidak dengan kebutuhan Guru. Tujuan dari penelitian ini adalah untuk mengeksplorasi kebutuhan guru dalam pembelajaran kosakata melalui aplikasi Augmented Reality dan untuk mengetahui apa saja strategi guru dalam menjawab tantangan penggunaan Augmented Reality untuk pembelajaran vocabuary. Studi ini dijelaskan dengan menggunakan studi kasus kualitatif dan wawancara dengan seorang Guru Bahasa Inggris yang dipilih secara khusus. Kasus di SMA Barunawati adalah siswa mendapat izin untuk menggunakan ponsel dan penelitian ini dilakukan pada saat terjadi pandemi virus corona (Covid-19). Penelitian ini menunjukkan bahwa guru membutuhkan Augmented Reality untuk mengajarkan kosakata dan menggunakannya di kelas. Beliau berpendapat dengan media berbasis digital akan menarik fokus siswa dan juga dengan menggunakan ponsel genggam mereka akan menyukainya. Kesan Guru tentang Augmented Reality sangat bersemangat karena ini adalah media baru. Meskipun Augmented Reality merupakan media baru di sekolah, namun Guru menyatakan strateginya untuk menyukseskan tujuan proses belajar mengajar dan meminimalkan penggunaan ponsel yang berlebihan oleh siswa. Ada tiga strategi yang harus diterapkan saat menggunakan Augmented Reality, pertama bertanya kepada siapa saja yang memiliki pemahaman lebih baik, kedua mengontrol siswa, dan ketiga membagi siswa menjadi kelompok.

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LIST OF ABBREVIATION

AR : Augmented Reality
PTO : Pelatihan Try Out
KBM : Kegiatan Belajar Mengajar
KD : Kurikulum Dasar 1. 2.

3.





CHAPTER I

INTRODUCTION

In this chapter it will discusses about the background of choosing the topic, what are the objectives of the study, the significant of the study, the scope and limitation, and the definition of key terms. Those points are explained with the researcher below.

A. Research Background

Vocabulary cannot be separated into all of the skills because it will be the bridge for the development of English skills. Based on Richards, vocabulary is one of the most critical components of language and one of the first things to apply the linguists to divert their attention¹. Concerning daily life, vocabulary will always use to be able to communicate with others. In order to establish good communication between people, good vocabulary skills are needed. The communication activities that are often done directly between people are talking. That is in line with the Viera, who states that vocabulary is an essential aspect that influences a person to develop their communicative competence and language skill. Viera revealed that vocabulary would impact how a person can communicate well because, in it, several words will be spoken. In this case, vocabulary is words that have different meanings. McCarthy said, "one crucial factor is the amount of vocabulary one possesses as vocabulary forms the biggest part of the meaning of any language"². From the explanation explained by McCarthy, students will feel confused in learning vocabulary because every single word can have various meanings. This problem is faced by students, especially students, who learn foreign languages.

The first problem is grammar and vocabulary. From the problem, it will appear the question "what is the most important between grammar and vocabulary?". Then, Scott cited in Dellar H and Hocking D, *Innovations*, LTP states, "*if you spend most of your time studying grammar, your English will not improve very much. You will see the most improvement if you learn more words and expressions*" ³. From the Dellar and Hocking statement, vocabulary will have a more impact on developing English knowledge than grammar. The second problem is about the meanings, and it is a widespread problem. Some people have different vocabulary knowledge.

¹Richards, J.C. (2001). *Curriculum Development in Language Teaching*. Cambridge, UK: Cambridge University Press. ISBN 0-521-80060-9

²Hamzah, M., Kafipour, R., Abdullah, S. (2009) cited in McCarthy (1988). Vocabulary learning strategies of Iranian undergraduate and its relation to their vocabulary size. *European Journal of Social Sciences*, Vol. 11 No. 1.

³Thornbury, S. (2002). *How To Teach Vocabulary*. Edinburgh Gate: Pearson Longman.

Mofareh said that vocabulary is always used by a person that has diverse experience of vocabulary⁴.

Those problems will always make the learner cannot develop their vocabulary knowledge, and also they still do not understand the essential part of the vocabulary. According to Folse, vocabulary is an essential component of all comprehension⁵. The essential part means, the vocabulary will influence the two types of skills of language based on Nation there are receptive skills and productive skills⁶. Another explanation of the essential part of vocabulary is vocabulary. It will give the achievement of language learners. It will be helpful in the real-life⁷. If we already know about the essential things of vocabulary, we can learn vocabulary from anytime and anywhere. It can be from many sources like books, magazines, comics, etc.

Learning new words of a foreign language are fascinating yet often challenging to manage. Many EFL learners have learned a word just to forget it a few days later; students often have difficulty constructing full sentences; someone gives up reading a text because he understood too few words or phrases; some people are not so motivated to add new words into their list; otherwise, they struggle to recall a word when speaking or writing. These conditions are prevalent to happen among an EFL/ESL learner. Most language learners find it boring, tedious, and challenging to learn and remember a large number of words necessary to be competent and confident in a foreign language. However, not all students can understand well about the vocabulary. Based on Moulin, there are many problems that students meet when they learn about vocabulary, such as the students cannot memorize well about the vocabulary because it is challenging, they feel lazy to read from many sources, lazy to find the meaning in the dictionary, etc⁸. Those problems always make the students cannot understand well about the vocabulary.

To solve those problems above, the educator must prepare their media to facilitate and help the students' understanding about vocabulary. Nowadays, technology has helped to facilitate the teaching and learning process. Teachers must follow the development of technology to teach

⁴Alqahtani, M (2015)cited in Burns (1972). The importance of vocabulary in language learning and how to be taught. *International Journal of Teaching and Education*, Vol.3 No.3. DOI: 10.20472

⁵Folse, K. (2010). Is explicit vocabulary focus the reading teacher's job? *Reading in a Foreign Language*, 22, pp. 139-160

⁶Dodigovic, M., Jeaco, S., Wei, R. (2017). Trends in Vocabulary Research. *TESOL International Journal*, Vol. 12 Issue 1

⁷Hou, H. (2014). Teaching Specialized Vocabulary by Integrating a Corpus-based Approach: Implications for ESP Course Design at the University Level. *English Language Teaching*. Vol. 7 No.5. DOI: 10.5539

⁸Moulin, Andre. (1984). The Problem of Vocabulary Teaching: An Answer to Robbins Burling. *Pergamon Press.* Vol. 12, No. 2. Pp. 147-149.

easier in the class. There are a lot of media technologies that supports the teacher when explaining the material. Choosing good media is determined by how the student can catch the point on the teacher's explanation. One of the media of technology is Augmented Reality (AR).

Augmented Reality is one of the media of technology that combines two dimensions and three dimensions. It can put the picture or video to explain to the student and make students understand and learn about Augmented Reality to facilitate the students' imagination work when learning vocabulary especially. Additionally, Rabea said that Augmented Reality is a combination of a real-life view of the world; it is also from the digital information that can include the picture, video, and audio⁹. A previous study found that Augmented Reality would give a positive impact on the students. The students will have more creative and active because they only used Augmented Reality in the classroom. In addition, there are ten advantages of using Augmented Reality in the class according to Cai, et al.. First, Augmented Reality will make the teaching-learning process will be simple, easy, fun, and attractive. Second, the learner will do direct interaction with the information. Third, It will make the students learn about modern ways to learn something and also the teacher can teach the students about technologies. Fourth, it is a straightforward and effective way. Fifth, it help the students with clear information to catch what the teacher means. Sixth, it can develop the interaction from the teacher – students. Seventh, it is very cheap and easy when they want to access it. Eight, it helps the students experience to learn. Ninth, it can make the students' innovation likely develop, and knowledge will be updated. The tenth will make the atmosphere of the class will fun¹⁰.

There are many applications of Augmented Reality, such as HP Reveal and LayAR but the most common application is HP Reveal. Before HP Reveal application, the application name is Aurasma. The difference between HP Reveal and LayAR is the HP Reveal can be scan just from the picture only, but if the LayAR, the scanner must from the QR code.

However, the Augmented Reality application cannot be directly implemented in the school. The initial step is doing the needs analysis. Needs analysis will help the school to find out what the problems that happen and can also to solve the problem. Based on the Nation and Macalister, there are three needs analysis tools; necessities, lacks, and wants¹¹. The first tool is necessities; this is the first thing to look the target

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⁹Rabea, T. (2016). cited in McMahon (2014, p. 4). The Effectiveness of Augmented Reality Applications on Developing Third Graders' English Vocabulary in Gaza Governorate ¹⁰Safar, A.H., et.al (2016). The Effectiveness of Using Augmented Reality Apps in Teaching the

¹⁰Safar, A.H., et.al (2016). The Effectiveness of Using Augmented Reality Apps in Teaching the English Alphabet to Kindergarten Children: A Case Study in the State of Kuwait. *EURASIA Journal of Mathematics Science and Technology Education*. Vol.13 No.2. DOI: 10.12973

¹¹Nation, I.S.P., Macalister, J. (2010). *Language Curriculum Design*. New York, USA: Routledge. pp. 27-30. ISBN 0-203-87073-5

of the tasks. Second is lacks, based on Nation and Macalister "an important part of needs analysis involves looking at where learners are at present". Third is wants, this tool is about what the benefit ways to students. Many researchers agree if the need analysis will the best way to upgrade the curriculum and decrease the problem in classroom and the school.

In this related to the study, there were previous studies that also discussed about the media of Augmented Reality to teach vocabulary. First, made by Amar, Ali, and Zainab, entitled "The Effectiveness of Using Augmented Reality Apps in Teaching the English Alphabet to Kindergarten Children: A Case Study in the State of Kuwait". This study was conducted to compare the experimental and control class. The experimental class used the Augmented Reality as a treatment to the kindergarten students, while the control class used the traditional method; face-to-face method. The differences treatment was determined the students' scores from two different classes. Furthermore, the experimental and control class carried the significant vocabulary scores between those class. The experimental class showed the significant different vocabulary scores rather than control class.

Second research was designed by Tahani, entitled "The Effectiveness of Augmented Reality Applications of Developing Third Graders' English Vocabulary in Gaza Governorate". This research was carried to find out the effectiveness of Augmented Reality application, like Aurasma and ZooBurst. There are two group in this research; the experimental and control group to know the distinction the vocabulary scores from those group. Augmented Reality media is to measure the students' vocabulary in the third grade. It also to find out the impact of the media in improving students' vocabulary, is there any improving or not. From the two different group; experimental and control group was found the different score. In the experimental group got a better vocabulary score than the control group.

Third, the research was created by Hamad, entitled "Breaking Down the Classroom Walls: Augmented Reality Effect on EFL Reading Comprehension, Self-Efficacy, Autonomy, and Attitudes". The aim of this study was investigated the relationships between reading comprehension, self-efficacy, autonomy, and attitudes by using Augmented Reality. In this study, it conducted by quasi-experimental with the two different classes; experimental and control. The two different class got the twice test; pre and post test to make the Augmented Reality had a relationship with the reading comprehension, self-efficacy, autonomy, and attitudes. So, in the result of the study Augmented Reality had a positive relationship with reading comprehension, self-efficacy, autonomy, and attitudes.

From the previous studies above, this research is different with others previous research because those previous studies is implementing the Augmented Reality in the real-class and do the experimental study; quantitative research. This is different with this research because Augmented Reality is the something new media for English in Indonesia's curriculum and teachers, so that is why must do the need analysis first. The need analysis must do firstly to match is Augmented Reality match with English curriculum and teachers' need in Indonesia school. For the scope of this research also different, the scope for this research is senior high school in Surabaya and others previous studies are from kindergarten, university, and elementary school. There are two aims of this research; the first aim is to know the teacher's needs to develop the students' vocabulary. It will help the researcher to find the best key to help the teacher when teaching the vocabulary. The second aim is to know the teacher's expectation of Augmented Reality. The Augmented Reality is something new in Indonesia education, especially in English education. So, the teacher will know how Augmented Reality works when teaching about vocabulary.

For this research, it is vital because this research is something new in Indonesia education, especially in the English course. From a lot of previous studies that explain about the Augmented Reality, there is no one in Indonesia education explains in English course. So, that is why the need analysis will be the first way to introduce the AR to the teacher. After this research is done, it will do the next research about AR. A case of this study is the English Teacher give the permission to students to use their mobile phone when learning vocabulary. So, the subject of this study is English Teacher in Barunawati High School that chooses by purposive sampling.

B. Research Question

To collect the information of this research, there are two research questions of this study:

- 1. What do the teacher's need to teach vocabulary using Augmented Reality as a medium?
- 2. What are the teacher's strategies in addressing the challenges of Augmented Reality to teach vocabulary at Barunawati High School?

C. Objective of the Study

Related with the research question that stated above, there are two objectives of this study:

1. To explore the teacher's need in teaching vocabulary through Augmented Reality application

2. To find out what are the teacher's strategies in addressing the challenges of Augmented Reality to teach vocabulary

D. Significance of the Study

This study has expected to give the positive value for the readers, teachers, and further researcher

- 1. For the teachers, it is hoped that this study gives the teacher's needs to teach English vocabulary for the students and what strategies that will be used in implementing the Augmented Reality as media to teach vocabulary.
- 2. For readers, it is hoped the readers can get a new knowledge of the Augmented Reality as a medium based on the Teacher's need and also to give a new strategies when using AR in the classroom.
- 3. For further researcher, it is hoped give the references to implement the Augmented Reality based on the teacher's need and use the strategies for teaching vocabulary.

E. Scope and Limitation

The scope of this study is the senior high school in Barunawati High School in Surabaya. The study focuses on the teacher's need when using the Augmented Reality as a medium to teach vocabulary to their students in the classroom. Also, want to know the teacher strategies when to applied Augmented Reality as a medium to teach vocabulary in the class.

The limitation of this study does not discuss the implementation of Augmented Reality in the classroom. The participant of the study is from one of the English teacher from Barunawati High School in Surabaya. The time that the teacher gives to the researcher was so limit so the data just took once. Another problem, the school that researcher selected also open the admission of new students acceptance (*Penerimaan Peserta Didik Baru*). So, when the research asked the question to the teacher, there is new students' parents come to register.

F. Definition of Key terms:

To avoid misunderstanding of the meaning of terms in this study, the researcher defines the key terms to give the same understanding and interpretation between writer and reader, those are:

1. Vocabulary

According to Viera, vocabulary is important aspects in language that will influence all of the skill. When the people want to improve their English skill they must have a good vocabulary because it will make the people easier to mastering all of the skill

of language¹². In this research, vocabulary is refers to students' words that suitable with the material.

2. Augmented Reality

According to Carmigiani and Furtht, augmented reality is interactive media that will shows 3D objects. The 3D objects has the purpose to make the objects will be more real and to make the readers can imagine about that object¹³. In this research Augmented Reality is represented by HP Reveal application.

3. Need Analysis:

According to Songhori, need analysis is the activities that have a purpose to get much information to make the curriculum will be better or upgrade¹⁴. The need analysis refers to three aspects; there are wants, necessities, and lacks of the teachers' experience when they meet in the class.

¹² Viera, Rodrigo T (2017) .Vocabulary knowledge in production of written texts : a case study on EFL language learners. *Revista Tecnológica ESPOL – RTE*, Vol. 30 No. 3, pp. 89-105. ISSN 1390-3659

¹³Furht, B. (2011). *Handbook of Augmented Reality*. New York, USA: Springer. DOI: 10.1007 ¹⁴Songhori, M.H. (2008). Introduction to Need Analysis. *English for Specific Purpose World*. Issue 4.



CHAPTER II

REVIEW OF RELATED LITERATURE

In this chapter, it explained about the theories that support and related with the study. The theories will be help to guideline to construct this study, and in this chapter also explain the previous studies that still have correlation with this study.

A. Definition of Vocabulary

Language is a device that humans use to communicate with each other, not only about speaking, but it also listening, and writing. But in the language there are many vocabularies in there. This is in line with the Thornbury language is build from a lot of words¹⁵. Similar with Thornbury opinion, Mofaerah add if vocabulary is about set of words¹⁶. From that explanation, vocabulary has an important role in influencing all of the language abilities of someone, but how many words in the English language? According to Thornbury in the English dictionary 'Longman dictionary of contemporary English,' there are 80,000 words and phrases in that dictionary. Another dictionary is 'Oxford English dictionary'; it contains more words than a dictionary before and it is half a million words¹⁷. From that, as the people we cannot remember all of that word from the dictionary because as a human we only have a limited ability to remember all of that.

Table 2.1 Definition of vocabulary

No.	Author name	Title of the book	Statement
1.	Beverly Ann Chin	How to build a super vocabulary	"vocabulary is important measure to improve the verbal abilities ¹⁸ "

¹⁵ Thornbury, S. (2007). *How to teach vocabulary*. Cambridge, UK: Cambridge University Press. ISBN 0-521-423961

¹⁶ Alqahtani, M (2015) cited in Diamond and Gutlohn (2006). The importance of vocabulary in language learning and how to be taught. *International Journal of Teaching and Education*, Vol.3 No.3. DOI: 10.20472/TE.2015.3.3.002

¹⁷Thornbury, S. (2007). *How to teach vocabulary*. Cambridge, UK: Cambridge University Press. ISBN 0-521-423961

¹⁸Chin, A.B. (2004). *How to Build a Super Vocabulary*. New Jersey, USA: John Wiley & Sons, Inc. ISBN 0-471-43157-5

2.	David Nunan	Language teaching methodology	"vocabulary is the easiest aspects of second language to learn but it difficult applied in the formal classroom ¹⁹ "
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In the table 1.1 there are two experts that explain and give briefly explanation about the definition of vocabulary. From the two experts, they said different side about what is vocabulary about. The first expert, Beverly Ann Chin said if vocabulary is important thing to improve the verbal abilities²⁰. Without vocabulary, we will faced the difficulties when speak with other people because speaking is one of the verbal abilities. Another expert, Hocket explained if vocabulary is the easiest aspects but it difficult to implementing in the formal classroom, it mean vocabulary is the big whole of language and it will influence our language abilities. The two experts give the two sides of vocabulary but the specific definition from the two experts is vocabulary is the basic aspect in the language skill to build a good communication with other people and need a time to learn it not only in the class but also self-learning at home.

B. The Challenges of Learning Vocabulary

When people want to communicate each other it always comes out new languages from that activity. In fact, not only from the English language as a second language or foreign language but it will happen from the mother tongue²¹. When someone wants to communicate with each other they always use their mother tongue to make the interlocutors easier to respond to it. It still happens misunderstanding to digest what the interlocutors say. This is not happening for the mother tongue only, and it will also happen to the English language. When someone speaks to each other and we do not know the meaning of the word, try not to panic. McCarthy and O'Dell said there are many vocabulary words in English, but if someone does not know the meaning of those words try do not panic²². They said if someone feels panic, it will cause a problem of our vocabulary and from that we will know the lack of vocabulary. The problem will make people feel afraid to learn or to develop their

²⁰Chin, A.B. (2004). *How to Build a Super Vocabulary*. New Jersey, USA: John Wiley & Sons, Inc. ISBN 0-471-43157-5

¹⁹Nunan, D. (1991). *Language Teaching Methodology A Textbook for Teachers*. Sydney, Australia: Prentice Hall. ISBN 0-13-521469-6

²¹ Thornbury, S. (2007). *How to teach vocabulary*. Cambridge, UK: Cambridge University Press. ISBN 0-521-423961

²² McCarthy, M., O'Dell, F (1999). *English vocabulary in use*. Cambridge, UK: Cambridge University Press. ISBN 0-521-423961

vocabulary. According to Thornbury "the difficulties when learning about the vocabulary are; (1) pronunciation, (2) spelling, (3) length and complexity, (4) grammar, (5) meaning, (6) range, connotation, and idiomaticity²³. The first problems are pronunciation, when the person wants to speak another language but they feel if their pronunciation is wrong or it can say unconfidence. The unconfidence will make the students afraid to speak up. The second problems are spelling, it almost similar with the pronunciation but in this problem the speaker does not know the alphabet that constructs that word, when the speaker talks with interlocutor they cannot catch what does the interlocutor means. The third problems are length and complexity, when the people meet the new word but it has a long word it can be more difficult to learn it. Many people always like short word because it is easier to understand. The fourth problems are grammar, when we learn about the new language try to not focus on the grammar structure because it will build the new speculation if language is difficult and it always focus on the grammar. The fifth problem is meaning; the majority of the people always confuse about the meaning of the word. They will make their perception if vocabulary is confusing because we focus on the meaning and every time we always meet the new vocabulary. The sixth problems are the range, connotation, and idiomaticity, in the vocabulary there are general words that have the same characteristics but it will make the difficult if we only know about the familiar word.

C. Media for Teaching Vocabulary

In teaching vocabulary to the students is not easy and as a Teacher, of course they must find the alternative way to minimize their confusion. The alternative way can from many aspects, one of the aspect is media. Media is a tool that can deliver the Teachers' information to the learners through communication in the classroom²⁴. The media will help the Teacher and students to build a good interaction and generate comfortable situation in the classroom. In vocabulary case, a good media will support the Teachers' material in the class. The educators must be creative to create their media that make the student can interest to obtain new knowledge of vocabulary²⁵. There are a lot media that have already used in teaching vocabulary, it come from online-based media and offline media. Nowadays, many of Teachers and students are preferable to use technology-based media²⁶. Technology-based media is supported from a

²³ Thornbury, S. (2007). *How to teach vocabulary*. Cambridge, UK: Cambridge University Press. ISBN 0-521-423961

²⁴ Smaldino, S. E., Russel, J. D., Heinich, R., & Molenda, M. (2004). *Instructional Technology and Media for Learning*. New Jersey: Pearson

²⁵ Permana, D., & Qomariyah, S. S. (2018). Crafting Media to Enhance Students' English Vocabulary. *Journal of English Language Teaching*. Vol. 5, No. 1

²⁶ Arianti, L., & Fitriati, R. Teaching Vocabulary by Using Computer Online-Games for Young Learners Class (Media in Teaching). *National Seminar Proceeding*. pp. 343-348

gadget such as; computer, laptop, mobile phone, and I pod²⁷. One of the gadgets that always use is mobile phone, not only for the students but also for the Teacher. By using mobile phone, the Teacher can use a lot of software that will be source of information, like one of the example software is Augmented Reality.

D. Definition of Augmented Reality

Augmented Reality is one of the technology tools that make people can see around the world. They only see from the display of their mobile phone. This is in line with the Goldiez et al. cited in Barfield and Caudell opinion, and they said Augmented Reality as the system that the people can see with them directly from their display²⁸. AR not only about the picture, but the people can put the videos or music in there, like Rabea, "A modern computer-assisted learning environment that combines the observed real-world phenomena with graphically added information or images, even spatially positioned sounds can be used"²⁹. The three dimensions from the Augmented Reality that has been showed early will make the media will be amazing.

Table 2.2 Definition of Augmented Reality

No.	Author name	Title of the book	Statement
1.	Borko Furht	Handbook of Augmented Reality	Augmented Reality is blend from real and virtual objects that put the three dimension aspects ³⁰
2.	Dunleavy and Dede	Virtual, Augmented, Mixed Realities in education	Augmented Reality is the natural view of phenomenon through camera from mobile phone

²⁷ Evenddy, S. S., & Hamer, W. (2016). Edmodo as a Media to Teach Vocabulary. *The Journal of English Language Studies*. Vol. 1, No. 1. pp. 26-34

²⁸Goldiez, B, et.al. (2005). Proceedings from the Army Science Conference (24th): Advancing Human Centered Augmented Reality Research. Orlando, FL.

²⁹Rabea, T. (2016). cited in Salmi, Kaasinen, and Kallunki (2012, p.285). The Effectiveness of Augmented Reality Applications on Developing Third Graders' English Vocabulary in Gaza Governorate

³⁰Furht, B. (2011). *Handbook of Augmented Reality*. New York, USA: Springer

	and it give the information by video simulation ³¹
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According to Furht, Augmented Reality is blended from real and virtual objects that put the three dimension aspects to make it interactive³². The interactive media will help the students easier to catch what the teachers' material and to build the students' imagination. While, Dunleavy and Dede said Augmented Reality is the natural view of phenomenon through mobile phone camera³³. The natural view is like what we see with our eyes directly. So, the outline is Augmented Reality is the interactive media online in mobile phone that build the students' imagination from three dimension thing on teaching learning process.

E. How the way to use Augmented Reality

In the implementation of Augmented Reality, there are a lot of applications that support the Augmented Reality. Every application has a different way to run the Augmented Reality application. For example, according to Furht, he mentioned if the process from putting the video into a tracking process then render it, then wait a minute until the overlay of the work of Augmented Reality will standing in the object³⁴. Firstly when we want to use Augmented Reality, we must have the application of Augmented Reality, like HP Reveal (before HP Reveal, it called Aurasma). From the previous study, Amar et al., he used AR to teach kindergarten students to learn about the vocabulary³⁵. He used the card to learn about the vocabulary especially teaching in kindergarten students. Amar also adds how the way to use Augmented Reality. First Amar used the software of Augmented Reality. The software of Augmented Reality that Amar use is Aurasma and knows it changes to be HP Reveal. Second, after we have the software of AR but before that make the trigger is an important thing. After the trigger has done, then scan the trigger. The trigger it can come only from the things around us or just the picture. In his research, Amar use the picture to teach the alphabet to the kindergarten students. Third, the video or picture can be seen after the scanner work but it must have a good internet connection to know the Augmented Reality

³¹Liu, D., Dede, C., Huang, R., Richard, J. (2017). *Virtual, Augmented, and Mixed Realities in Education*. Singapore: Springer. ISBN 978-981-10-5490-7

³²Furht, B. (2011). *Handbook of Augmented Reality*. New York, USA: Springer

³³Liu, D., Dede, C., Huang, R., Richard, J. (2017). *Virtual, Augmented, and Mixed Realities in Education*. Singapore: Springer. ISBN 978-981-10-5490-7

³⁴Furht, B. (2011). *Handbook of Augmented Reality*. New York: Springer

³⁵Safar, A.H., et.al (2016). The Effectiveness of Using Augmented Reality Apps in Teaching the English Alphabet to Kindergarten Children: A Case Study in the State of Kuwait. *EURASIA Journal of Mathematics Science and Technology Education*. Vol.13 No.2. DOI: 10.12973

work. So, from all of the examples from previous researchers there are different ways to start the Augmented Reality.

F. Augmented Reality in education

Four types of Augmented Reality mostly be used for research, like; advertising and commercial, entertainment and education, medical, and mobile applications for iPhone³⁶. In that explanation, the studies focus on the education aspects. Augmented Reality in education will facilitate the students knowing of each vocabulary. The user of Augmented Reality will help the student to interact with the learners with the object. Augmented Reality not only about seeing the real-objects like the phone number, video about the tutorial, but it also can teach in the classroom. According to Rabea, Augmented Reality can teach in the class by the application. The application of Augmented Reality will make the images, videos, or music can be real-objects, but it must scan it first³⁷. The application of Augmented Reality will be scanner, but if we want to see what the Augmented Reality works, we must make the trigger like a flashcard. The application will build the students imagination, and the students will be active because it includes the picture, images, and videos³⁸. Here are the features of Augmented Reality in the UniteAR application.



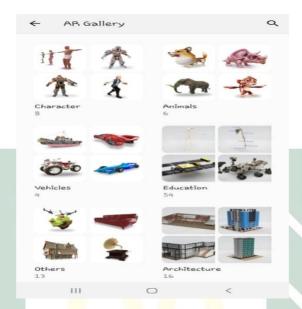
Picture 2.1. Scanner Feature in UniteAR

³⁶Furht, B. (2011). *Handbook of Augmented Reality*. New York: Springer

³⁷Rabea, T. (2016) cited in Stewart-Smith (2012). The Effectiveness of Augmented Reality Applications on Developing Third Graders' English Vocabulary in Gaza Governorate

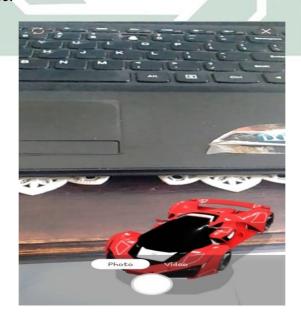
³⁸Rabea, T. (2016). cited in Lubrecht (2012). The Effectiveness of Augmented Reality Applications on Developing Third Graders' English Vocabulary in Gaza Governorate

For the picture 2.1, the first feature in UniteAR is scanner. The purpose of the scanner is to show the object become reality. The scanner must match with the same object which creates from the Augmented Reality application.



Picture 2.2. 3D pictures in UniteAR

In the picture 2.2 it will show the Augmented Reality. In that feature, the UniteAR use the 3-dimension object. The picture in UniteAR have some categories, like character, animals, vehicles, education, others, and architecture.



Picture 2.3. Documentation in UniteAR feature

The picture 2.3 will show up after the object has already scan (in the picture 2.1 about the purpose of the scanner). In there picture, the user of UniteAR can photo or record the video after the object show up.

G. The implementation of Augmented Reality in the classroom

As a media, Augmented Reality will facilitate the students from a different level. This media has already been used on a different level. Based on the previous study, there are three different levels that have already implemented the Augmented Reality application. The level is kindergarten, a third-grade elementary school, and a college student. For the other two, it discussed the Augmented Reality to teach English vocabulary to the student and one to know the connection of Augmented Reality between reading comprehension, self-efficacy, autonomy, and attitudes.

A kindergarten level uses the Augmented Reality to teach students' vocabulary in learning alphabet³⁹. In kindergarten level it must give the simple and fun situation in teaching-learning process. Augmented Reality gives the different situation when teaching-learning process be held. The situation made because there is a distinction from the treatment in two groups. Group one is experimental group, it was used the Augmented Reality media to the kindergarten students. Another group is control group, it was used the traditional method and teacher as e main role in the classroom.

Augmented Reality also brings the interactive and makes the students to be active. In the third grade elementary school in Gaza Governorate⁴⁰, it also to use teaching vocabulary to the elementary students. In this level, third grade elementary students use the showed that improving the English vocabulary. Same with the kindergarten level, this study also stated if experimental group bring the benefit impact to the third grade rather than control group.

The media of Augmented Reality is not only for the students in elementary and kindergarten school but in the college students it can be implemented. This is different with two previous studies above because it is not discussed about the students' vocabulary when using Augmented Reality but to know the relationships between reading comprehension,

⁴⁰Rabea, T. (2016). The Effectiveness of Augmented Reality Applications on Developing Third Graders' English Vocabulary in Gaza Governorate

³⁹Safar, A.H., et.al (2016). The Effectiveness of Using Augmented Reality Apps in Teaching the English Alphabet to Kindergarten Children: A Case Study in the State of Kuwait. *EURASIA Journal of Mathematics Science and Technology Education*. Vol.13 No.2. DOI: 10.12973

self-efficacy, autonomy, and attitudes with the media⁴¹. It media present the connection with those aspects and also produce the positive result.

H. Need Analysis

Need analysis is the parts of qualitative research to gather the information and it also about planning the activities. The planning of activities must base on the curriculum of the course. According to Songhori, need analysis is the activities that have a purpose to get much information to make the curriculum will be better or upgrade⁴². From Iwai's opinion, the need analysis is consists from the parts that solve the problems in the teaching ways. The parts of need analysis are from the two words "need" and "analysis." The first part is need; it explains about the lacks, necessities, and wants of the teacher or students⁴³. While the second part is analysis, according to Alsamadani, it is about the target language that the teacher or students to do⁴⁴. The analysis is an important thing because it can help the teacher and students to find a way to solve the common difficulties when teaching-learning process held. The curriculum of the course will find the lack of some materials, so from need analysis it can make the curriculum will be upgraded. This is in line with Aflah and Rahmani, need analysis is the main parts of developing the curriculum, materials, and methods that suitable for the students' ability or level and it also gives the motivation and successful way to achieve the students' best result⁴⁵. When need analysis implemented, it can help the students and teacher when to do the teaching-learning process because, from the need analysis, it can be evaluated if there are lacks when the teaching-learning process begins. Aflah and Rohmani need analysis; it will help to know are the programs and targets of the teaching-learning process work well or not, if the program and target do not work well it can be an evaluation for the future⁴⁶.

Table 2.3 Definition of Need Analysis

No.	Author name	Title of the book	Statement

⁴¹Alsowat, H (2016). Breaking Down The Classroom Walls: Augmented Reality Effect on EFL Reading Comprehension, Self-Efficacy, Autonomy, and Attitudes. *Studies in English Language Teaching*. Vol. 5 No. 1. DOI:10.22158

⁴²Songhori, M (2016) cited in Iwai (1999). Introduction to Need Analysis. *English for Specific Purposes*

⁴³Alsamadani (2017) cited in Hutchinson and Waters, 1987. Need Analysis in Specific Contexts: Saudi Engineering Students a Case Study. *Advances in Language and Literary Studies*. Vol. 8, No. 6

 ⁴⁴Alsamadani, H (2017) cited in Al Otibi (1994). Need Analysis in Specific Contexts: Saudi Engineering Students a Case Study. *Advances in Language and Literary Studies*. Vol. 8, No. 6
 ⁴⁵Aflah, M., Rahmani, E. (2018) cited in Otilian (2015). Analisa Kebutuhan (Need Analysis) Mata Kuliah Bahasa Inggris untuk Mahasiswa Kejuruan. *Jurnal Pendidikan Bahasa*. Vol. 7 No. 1
 ⁴⁶Aflah, M., Rahmani, E. (2018) cited in Otilian (2015). Analisa Kebutuhan (Need Analysis) Mata Kuliah Bahasa Inggris untuk Mahasiswa Kejuruan. *Jurnal Pendidikan Bahasa*. Vol. 7 No. 1

1.	David Nunan	The learner centred curriculum A study in second language teaching	"needs analysis is a set of procedures for specifying the parameters of a course of study ⁴⁷ "
2.	I.S.P Nation and John Macalister	Language curriculum design	"need analysis is the goals and contents of the language program to make the effective, useful, and suitable with the learners get, and it focus on wants; neccessities; and also lacks ⁴⁸ "
3.	Jack C. Richards	Curriculum development in language teaching	"need analysis is the planning to improve the course that suitable with the curriculum of the school ⁴⁹ "

The table 1.3 there are three experts that explain about what is need analysis. From those all that experts said is almost same each others. If we talk about the definition of need analysis, it will analyze what the teacher or student need. In this way, need not only refers to what they looking for in the course but need refers in the big whole that have several aspects in there. Based on the Brindley needs is consists of a lot aspects, it like wants, desires, demands, expectations, motivation, lacks, constraints, and requirements⁵⁰. In a conclusion, need analysis is the first step to develop the course that focus on three main aspects; wants, necessities, and lacks and to achieve the goals of the course.

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⁴⁷Nunan, D. (1988). *The Learner-Centered Curriculum a Study in Second Language Teaching*. Cambridge, UK: Cambridge University Press. ISBN 0 521 35483 4

⁴⁸Nation, I.S.P., Macalister, J. (2010). *Language Curriculum Design*. New York, USA: Routledge. ISBN 0-203-87073-5

⁴⁹Richards, J.C. (2001). *Curriculum Development in Language Teaching*. Cambridge, UK: Cambridge University Press. ISBN 0-521-80060-9

⁵⁰Richards, J.C. (2001). *Curriculum Development in Language Teaching*. Cambridge, UK: Cambridge University Press. ISBN 0-521-80060-9. page 54

I. Review of Related Studies

There are a lot previous related research that discuss about the effectiveness of Augmented Reality for the students like in subheading Augmented Reality in Education above. In this part, there is one previous research that discuss about the Augmented Reality based on the teachers' perspective. The title of the research is "Augmented Reality Applications in Education: Teachers Point of View". The purpose of the research is wants to know the Augmented Reality based on the teachers perspective and to know the teachers' creativity in designing Augmented Reality, and the feasibility of Augmented Reality development in teachers and students. The research is qualitative research and it was conducted on February 2019 in rural suburban areas of North-Western Greece on secondary education teachers of different specialities, and the participants are 20 teachers. The result showed Augmented Reality application is bring the benefit things to the teacher in any condition, like decreasing the lacks of the curriculum, and it is match with all of the teachers that have different specialities.

The previous study by Amar, Ali, and Zainab that using Augmented Reality as media to measure the impact on improving the kindergarten students' vocabulary. The study was focus on the three target of Augmented Reality; (1) to spotlight the synergy between experimental and control class, (2) to point out the vocabulary of kindergarten students' scores in two classes, and (3) to find out the correlation in vocabulary lesson and the test. This study was designed by experimental research with done in two different classes. Every class in two different class will got a different treatment by the educators. The treatment will influence the atmosphere in the class. The atmosphere from the two groups are very different; in the experimental group the situation is fun and attractive, while in the control group the situation is not interesting like experimental group. The result of students' vocabulary in both of group are distinct each other. From the situation in the experimental group, the result stated if the scores in this class is better than control group with the convincing scores.

The second current study from Tahani Rabea entitled "The Effectiveness of Augmented Reality Applications on Developing Third Graders' English Vocabulary in Gaza Governorate". This study aimed to scrutinize the impact of Augmented Reality in improving the students' vocabulary. The experimental research was used to know the score in pupils' abilities of vocabulary. Besides, this study was conducted to measure the Augmented Reality gives the benefit or not, the hyphoteses was explained if there was no significant effect when they used it. Despite, the hypotheses was stated if the Augmented Reality did not give a high score to the experimental group but in the result it brings the far scores. Additionally, Augmented Reality brings the positive value to construct the students' imagination with the real-world from that media.

Others current studies based on the Hamad entitled, "Breaking Down the Classroom Walls: Augmented Reality Effect on EFL Reading Comprehension, Self-Efficacy, Autonomy, and Attitudes". This research held on college students level to explore the connection between Augmented Reality and college students' characteristics. The hypothesis of this research is really sure if Augmented Reality will bring the positive effect. The hypotheses are suitable with the result of this research. The result showed that with the Augmented Reality gives the profit to rise the interest of the college students. Also, the Augmented Reality will facilitate the teacher in the digital era nowadays.

The study of "Exploring the effect of materials designed with Augmented Reality on language learners' vocabulary learning" was structured by Ekrem Solak and Recep Cakir in 2015. In their study, Augmented Reality will be a medium to establish the students' level of motivation in the classroom and identify the correlation between academic achievement and motivational level. The researchers were used descriptive qualitative research; it helped them to describe with clear and specific. The instrument of this study was the Material Motivational Survey by Keller. There are 130 students undergraduate, and consists of 82 females, 48 males. The researchers selected the participants from a state-run University in Turkey. Augmented Reality is implemented in the classroom to be a media of teaching vocabulary by researchers. Doing AR as a medium improves the undergraduate students' motivation when learning vocabulary in the school. Another benefit of AR it also gives a positive effect on the correlation between the students' academic achievement and students' motivation.

Another study was designed by Ahmed Ashley-Welbeck and Dimitrios Vlachopoulos, and the titled "Teachers' Perceptions of Using Augmented Reality for Language Learning in Primary Years Programme (PYP) Education. International of Journal English Teaching". The researchers want to explain some of the possibilities in applying the AR, positive value, and difficulties when using AR in the Egyptian International Baccalaureate (IB) school. In this study, the researchers mentioned three objectives study based on their research question. The first objectives are to know the Teachers' abilities and knowledge in supporting the implementation of Augmented Reality when doing the Primary Years Programme (PYP). The second is to find out the difficulties of using AR in PYP learning that Teachers faced, third is to discover the AR opportunities when implemented in PYP language education. Researchers chose the qualitative case study because this study is still developing, especially for Augmented Reality media is something new, and the Teacher was going interviewed by researchers. The researchers used a semi-structured interview to collect the data. Then, the Teachers' perception was analyzed, observed, and recorded by face-to-faced. The researchers conclude by using AR, it motivated the students to engage their levels. For the challenges, the researchers said the challenges are significant but not too much. Teachers should well prepare to design the Augmented Reality application and to connect with the students' material.





CHAPTER III

RESEARCH METHOD

The research method will be explained in this chapter; it also discusses the design that will be applied, the subject, setting, source of data, data collection, what instrument that chosen, and data analysis.

A. Approach and Research Design

A case study is matching with this study because there is some case that different with the others. Sometimes, many of Teachers disagree when the students use their mobile phone in the classroom. The researcher knows this case after doing an observation to complete the task last year in the same school. In Barunawati High School, the researcher observed one English Teacher when teach in the classroom. The Teacher gave the exercise to the students, and they must answer it. The Teacher gave permission to the students to use their mobile phone. The Teacher gave the command to students to use their mobile phone in learning vocabulary. The Teacher also argued if the students do not allowed use their mobile phone based on the school rules but she give the permission to them. One of the characteristics of qualitative based on Creswell is a phenomenon that happens in education now⁵¹. The qualitative of this research needs analysis. The need analysis will be the first way to know what the teacher needs when teaching the vocabulary to the students. The need analysis also collects much information that helps the teacher and students to find the best way to solve their problems.

B. Setting and Subject

This study was held in Barunawati High School Surabaya. The researcher selected the Teacher by purposive sampling. The English Teacher has interviewed one English Teacher that had fulfilled the criteria that the researcher made. The requirements were, (1) the English Teacher that give the permission and agreement of using a mobile phone in the classroom, (2) English Teacher that teaches in the two different classes, regular and exclusive, (3) English Teacher that have teaching experience more than five years, and (4) English Teacher that also as a homeroom teacher. The phenomenon that influences the researcher to do this research is that the English teacher permits the students to use their mobile phones in the teaching-learning process. Also, Augmented Reality is something new in the English curriculum because there is still not too much researcher concern with the AR media, especially for higher school. For that case, only one English Teacher that suitable for those categories.

⁵¹Creswell, John. (2009). Research Design. London, Thousand Oaks, California: *SAGE*. ISBN 978-1-4129-6556-9

The researcher took place research at Barunawati High, which is located in Jl. Perak Barat No. 173 Surabaya. This school was selected because the researcher has already done the observation last year to finish the task. The researcher observed the English Teacher when doing the teaching in the classroom. The observation result showed if the Teacher permit students to use their mobile phones when the teaching-learning process was held.

C. Data and Source of Data

1. Data

The data of this research occur in the form of words took from the interviewed with one English teacher by qualitative research. The English Teacher selected by purposive sampling that fulfilled with the categories. The Teacher categories are Teacher that gives the students' access to use their mobile phone, teach in the different classes, have an experience in teaching more than five years, and also as a homeroom teacher.

2. Source of Data

The source of data is from the teachers to respond on the interview questions based on their experience. The Teacher got the question related with the Augmented Reality application based on the teachers' opinion. The researcher interviewed one English Teacher.

D. Data Collection Technique

The data collection got from interview question. The interview session was conducted by the English teacher directly or face-to-face. Then, the interview question used semi-structured interview. The semi-structured interview helped to dig a lot of information based on the Teacher's argument. The duration of the interview question is around 10-15 minutes and it held only once and open-ended questions because to make a clear and specific explanation from the teacher. The researcher recorded the result of the interview then transcript all of the data. The difficulties when the researcher faced is the time that school give was so limit because when collect the data, there is a pandemic issue nowadays. Then, it also must adhere to health protocols, such as using a mask and keeping a distance.

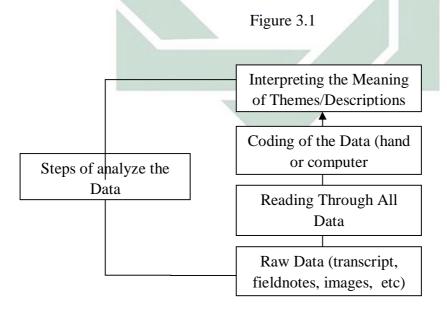
E. Research Instrument

The research instrument of this study was interview question. The interview question had purpose to answer the first and second research

questions. The researcher conducted the interview with semi-structured type to gather the Teacher's opinion about Augmented Reality application to teach English Vocabulary for High School students. The interview questions, took a time 10-15 minutes by asking and collecting the information from the teacher's opinion. In the interview question there are two sessions. The first session asked about the Teacher's knowledge about Augmented Reality application. In the first session had purpose to introduce the AR application. The second session asked about the Teacher's opinion about Augmented Reality. According to Creswell, there are three advantages of interview; first the interview is beneficial if the participants cannot be directly, second the participants can give the broad answer base on their opinion; three it can control the researcher's interview question⁵².

F. Data Analysis

The data analysis was served from interview with the one English Teacher. The researcher recorded the information to the mobile phone, then transcript all of the data manually. The step of the data analysis from the interview was structured systematically. The first step researcher was recorded all of the interaction with the Teacher, second the researcher copied the recording result to do the transcribed, third read all of the data to got important information, fourth do the coding, and the last interpreted the data. This is suitable with the Creswell explains about the diagram of the data analysis process in qualitative research⁵³ (see the figure 1)



⁵² Creswell, John. (2009). Research Design. London, Thousand Oaks, California: *SAGE*. ISBN 978-1-4129-6556-9

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⁵³ Creswell, John. (2009). Research Design. London, Thousand Oaks, California: *SAGE*. ISBN 978-1-4129-6556-9



CHAPTER IV

FINDINGS AND DISCUSSION

In this chapter, the researcher describes the findings in the field based on the data from the participant as an English Teacher in Barunawati High School Surabaya. After describing the findings, then it will be linked to the experts' opinions.

A. Research Findings

This research was conducted at the Barunawati High School in Surabaya on June 25th, 2020. This research was conducted while pandemic covid-19 happened. At that time, Surabaya was still a red zone. Therefore, this study cannot be done with a long duration because the school does limit the duration for guests. While conducting the research, Barunawati High School Surabaya is also conducting new students' acceptance or it called PPDB (*Penerimaan Peserta Didik Baru*).

In this research finding, it will discuss what the findings found from the field through interviews with one of the Barunawati High School Surabaya teachers who teach in regular classes and superior classes are. Furthermore, this research was conducted once, and there are two stages in it. The first stage is pre-interview; there are two activities; the first questions are about Augmented Reality, and the second, the participant will be given examples of how Augmented Reality's work and the practice of making the triggers. In the second stage, the interviewees will be interviewed in order to provide answers to the problems that arise in the research question.

Introductory Questions about Augmented Reality

Before entering into the question of needs analysis and what strategies will be used by the Teacher in the plan to implement Augmented Reality media for vocabulary learning in the classroom, the first step is to provide an introductory question about Augmented ReaPrelity. The introductory question aims to find out whether the Teacher has known about the Augmented Reality media before. There are three questions about the extent to which Teacher knows this media that adopted from Tzima, Styliaras, and Bassounas mentioned; (1) have you ever heard of or read about Augmented Reality? (2) Have you used the Augmented Reality application? (3) If ever, what application have you used? However, Tzima, Styliaras, and Bassounas use the question only with yes or no answers; but in this case, the question is changed with open-ended questions to know the participant's response of the participant

Table 4.1 Introductory Question⁵⁴

Have you ever heard of or read about Augmented Reality?

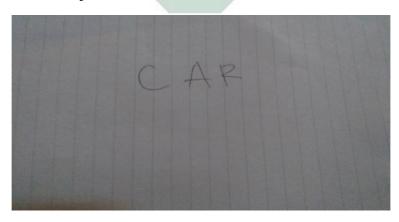
Have you used the Augmented Reality application?

If ever, what application have you used?

In the first question, the participant answers if she has never heard of and knows what Augmented Reality is. In addition, she also does not know more precisely what Augmented Reality is and how. Here, the participant still does not understand what Augmented Reality is, so the second question he answers has never been used. Therefore, in the third question, the researcher did not give the question because the participant did not yet know what Augmented Reality was and what applications were used. In the outline, the participant still does not understand what is Augmented Reality and what is Augmented Reality.

Practice and How the Augmented Reality Work

After doing a few questions in this first step, then in this second step, introduce what Augmented Reality to the participant is. The introduction aims to provide the participant's understanding of the participant about what Augmented Reality is, how it works, and so on. The opening is carried out in various ways; the first is by displaying a video that was previously made about the workings of Augmented Reality. When presenting the video, the researcher explained each step about the functioning of the media. The second way is to try to make Augmented Reality independently and practice it to the speakers. Here, practice it by making a simple trigger that is by writing vocabulary and sticking 3-dimensional objects into it.



⁵⁴ Addopted Tzima, S. Styliaras, G. Bassounas, A. (2019). Augmented Reality Applications in Education: Teachers Point of View. *Educational sciences*. Vol. 9, No. 99. pp. 1-18. DOI:10.3390

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Picture 4.1 Simple trigger

Like the picture above, the image is the example of a simple trigger created to be practiced independently. After knowing what Augmented Reality is and how it works, the participant gives a good impression in this matter. The participant was surprised about the object that could appear in the writing.



Picture 4.2 Object 3-dimension

From picture 4.2, that is an object of the trigger. The trigger shows a 3-dimension picture. The picture 4.2 use unite AR (Augmented Reality). There are a lot of application that use the Augmented Reality concept, like HP Reveal, UniteAR, IKEA Augmented Reality, Pokemon Go, and many more.

The participant also suddenly gives the question, "is only the picture that appears?". Responding to the question from the Teacher, the researcher explains if Augmented Reality not only raises only three-dimensional or moving objects but can also make a sound. In the case of this vocabulary, in addition to helping students understand the meaning of the vocabulary, it can also help them to see the object. It can even know how to pronounce the vocabulary correctly.

1. Teachers' Need in using Augmented Reality as a medium to teach vocabulary

This first part will explain the Teacher's needs in determining an appropriate learning media. Therefore, the first step is to analyze the needs to determine what the Teacher needs. However, the Teacher's need to be

sought is the need for the use of Augmented Reality as a medium in vocabulary learning. The Teacher's need is appropriate with the first research question, which is "What do teachers' need to teach vocabulary using Augmented Reality as a medium?" In concert with the opinion of Nation and Macalister stated in analyzing the needs must pay attention to three aspects; (1) wants, (2) lacks, and (3) necessities⁵⁵. These three things will find out what is needed by the participant.

Wants

In this first aspect, it will explain what the wants of the Teacher are related to the vocabulary learning media, especially Augmented Reality that will be implemented in the classroom. In this first aspect, there are six questions about instructional media expected by the Teacher. Of course, every Teacher who will use the media has a wish for the success of the media in the teaching-learning process. How useful is the media when applied in class, whether students will better understand the material delivered through the media or not, and much more. Here, the Teacher says there are several desires from a learning medium, which are as follows:

a. Facilitate the students

A good media is media that can provide benefits and help students' understanding of learning-related delivered by the Teacher. Likewise, with what was delivered by the participant, "...whatever to help the students, I certainly do". The participant also added that the most important thing in media was how to make them understand the material that has already done in class. Concerning vocabulary learning using Augmented Reality media, the participant agreed to use the media because now it is a digital era where everything uses technology, as an example of this Augmented Reality media. In addition, the use of Augmented Reality media, according to the participant, includes one component of 4C (collaborative, creative, critical thinking, and communicative), namely critical thinking. "... It should yes, they must not only find for the crude, we must try to thinking deeper", added the participant. With critical thinking, the participant revealed that students would try to be more active and think deeply.

b. Attract the Students' Interest

Not only to help students more easily understand the material to be taught, but the media must also be able to attract the attention of students. Currently, digitalization provides updates to help support one's life, one of which is online-based learning media or also commonly use gadgets like laptops or mobile phone. Augmented Reality itself is a technology-based

⁵⁵ Nation, I.S.P., Macalister, J. (2010). *Language Curriculum Design*. New York, USA: Routledge. ISBN 0-203-87073-5

tool, which can also be applied as a medium to make something that is not real becomes real. Here, the participant said that if this medium applies in vocabulary learning in class, students will be interesting with the media. The participant added the reason why students would be interested in Augmented Reality. The participant said, "...because now is the truly handphone minded, if it is not with the handphone.. if with laptop the students may be big but if with the handphone, oh it is amazing". The students feel happy to use the mobile phone because students currently always use mobile phone wherever and whenever. Besides, the use of mobile phones is also considered efficient according to the participant, because it is easy to carry anywhere compared to the use of other electronic objects. The Teacher added "...I think, may be the students will..will interesting in using mobile phone because still use it".

c. Simple

Sophisticated technology makes everything more efficient and practical. As explained in the previous point, the use of Augmented Reality media can work on a mobile phone. According to the participant, in general students, they will be more interested in using a mobile phone rather than a laptop because in terms of the shape of the laptop is bigger than the mobile phone. At this time, generally is a digital era where everything is fast and easy. The participant said, "...But mainly I have to learn first and the basic is digital, I think the students will like it". From that statement, the participant argued that students would like Augmented Reality because it belongs to the digital environment. In the statement, the participant expressed her interest by wanting to learn the Augmented Reality media because indeed, the educational needs that are currently changing from learning directly to learning from home.

d. Suitable with the KD (Basic Competence)

Basic competence or commonly called KD, is a factor in the curriculum applied. In one Basic Competence, there are two assessments; first is knowledge, and second is a skill. Both assessments can be related to the media that will Teacher used later. Just as the participant said "...now whatever the KD, I try to connect with the digital name", so any kinds of digital-based media must be suitable with the Basic Competence. But, here the participant added "...to implement I see it from KD, for example I need this KD, I definitely use it. For example in another KD I need another media I will use it like that". In the participant's statement, Basic Competence will influence the mobile phone usage for students. The mobile phone usage for the students must obtain permission from the homeroom teacher because it has become a school rule. The rule is to supervise the students when they use their mobile phone in the classroom.

Lacks

Every media that will be applied must have been prepared carefully and following the learning plan. However, the media that has been properly arranged with the learning plan, there are still some obstacles and shortcomings that occur unexpectedly. The obstacle will hamper the process of teaching and learning activities in the classroom. Sometimes these obstacles are beyond the expectations of the Teacher such as classroom situations that suddenly turn out to be uncontrolled. As for this deficiency, it can come from several factors. Except, in this case, is the Teacher uses online-based media. These factors, as follows, are:

a. Students' Level

Each student has different characteristics. Besides the characteristics, there are also different levels of students. The level here affects the level of students' understanding of the material delivered by the Teacher in the classroom. By using learning media, both digital-based and not only limited to helping students to be able to make them better understand. But here, the participant added, "In my opinion, the shortcomings for learning vocabulary are not in the media, in their own students". Following the opinions expressed by the participant, the level of students will not develop if the students do not try to improve it themselves. Besides, from the opinion of the participant, whatever the medium, whether digital or not, especially Augmented Reality, there is no significant lack.

b. Provider

In this digital era, many online-based media have sprung up. In conjunction with online-based media, of course, will use a network to support the media. There are so many networks today that have sprung up with different facilities. These network facilities can make a striking difference, for example, the speed of a network. The speed of a network is determined by how spread the network is in an area. This speed difference is often a complaint of network users. The connection with online-based Augmented Reality media is very dependent on the speed of a network. Moreover, if a network is having problems with a variety of reasons, such as e weather one of them. The problem of the provider is as stated by the participant if each provider has a different speed, sometimes there is a very fast, but it is also very slow.

Besides each network has a different speed in the facilities obtained by the user of the provider, other facilities are different quota amounts in each provider. The variations provided by this provider vary, depending on the user's comfort level in buying the quota. The relationship with this quota, the participant said, "besides that, they also have different quota, they want to use 10, 20, 30, 60 thousand, that's different facilities, that's all". The less quota purchased but with great use, the quota will be faster. However, if the greater the quota purchased, it will not immediately run

out even though it is with frequent use. This Augmented Reality media is based online and will certainly use enough quota to use it.

c. Creativity

Augmented Reality is one example of the many applications that Teacher can apply as learning media. Based on previous research, this media was used for vocabulary teaching and learning activities in the classroom. From previous research, researchers developed the Augmented Reality media by themselves. From that, creativity is essential. In this case, not only the Teacher must be creative in determining media, but students must also be creative. Students are expected to be more creative by finding ways that are efficient and fast in absorbing and understanding what is conveyed by the Teacher in class. As said by the participant, "..based on the person wants to be creative or not", from the exposure of this participant, both Teachers and students must be equally creative to establish sustainability. Continuity here is when the Teacher determines a medium that can attract students' attention and help students understand easily. For students, they must find a way so that they can better understand the material from the Teacher.

d. Students' Habit

Habits that are done all the time will certainly be difficult to reduce. As is the case with the use of mobile telephones. At present, the mobile phone is a thing that can not keep away from the habits of students. The informant said that at this time, the students could not be separated from the mobile phone. This Augmented Reality media itself uses a mobile phone to run the application. According to the participant, the school have allowed the use of mobile phones in learning. Although schools have allowed the use of mobile phones, schools also still minimize the use of the mobile phone. The school facilitates students by providing a certain cupboard in each class to place students' mobile phone. It aims to control and supervise the students in order to do not to use mobile phone if they are not needed in learning, as said by participant, "We ask all students to collect ... we have a special cupboard to store the items ... the keys are carried by the homeroom teacher. But, for example when we needed the use of new gadgets we ask for permission to borrow the keys to share it later when KBM is finished locked again".

Necessities

The third aspect is about what the participant need as a teacher in a specific situation. The situation can be in the form of material adjustments, students' needs, and much more. The need for the participant in Augmented Reality media arises based on the participant's interview result about how the media works. From the observations of the speakers, what is

needed when they want to use the Augmented Reality application are quotas, gadget usage, and online-based media usage.

a. Quota

When you want to connect your mobile phone to the internet, of course, you must have a quota first. The quota will help to find all information when connecting with the internet. Quotas not only help students to find the information but also for Teachers, it is also beneficial. Quotas will help Teachers find information about the materials and media that can be used in class. Just like with this Augmented Reality application, this media uses the internet network to run it. As a result, the application must have a quota to be able to enter and run it.

b. Gadget Using

Nowadays is a digital era; everything can be found quickly and instantly. That is all is the people needed and what information you want to get is available on the internet through the gadget you are using. These gadgets can be as diverse as mobile phone, laptops, smartwatches, and so on. The user of the device is used by all ages and all existing environments, one of them in school. In schools now, especially in Barunawati High School Surabaya, permits the use of gadgets in the school area.

Gadgets that are often used by students are mobile phone because of their practical use and can be taken anywhere and used at any time. Even though schools allow the use of cell phones in the school area, students are still not allowed to use a mobile phone during teaching and learning activities unless the teacher requires the use of the mobile phone. When the teacher involves the use of the mobile phone in the classroom, the teacher who is teaching at that time must get permission from the homeroom teacher first. Permission has aims to limit the use of the mobile phone in the classroom.

In addition, it is currently experiencing a pandemic which all changed the learning system. Learning systems that were previously faced to face directly transformed into learning from home for students and work from home for teachers. From these problems, the teacher strongly agrees with the use of gadgets when teaching and learning activities take place. In his opinion, the participant said "I guess, I totally agree, because the era is indeed surrounded ... around the millennial digital era, yeah ... from uh ... now it's no longer a teacher centre but students centre. We are no longer books but digital".

c. Using Online-based Media

In the realm of increasingly sophisticated technology today, Teachers are required to be more creative and can take advantage of the sophistication of the technology, especially during this corona virus pandemic. Teachers also have to change the plans they have made for teaching and learning activities in class. Alternative for that, according to Circular No. 4 of 2020 concerning the Implementation of Education in Emergency Corona Virus (Covid-19) published by Minister of Education and Culture (*Mendikbud*) Nadiem Anwar Makarim explained "*learning in networking (daring) or distancing learning is carried out to provide meaningful learning experiences for students, without being burdened by the demands of completing all curriculum achievements for grade and graduation" from that explanation teaching and learning activities will continue but are carried out online.*

Therefore, the teacher will also certainly use applications and software that can support teaching and learning activities online. Apps and software that already exist today can be accessed quickly and through their respective gadgets, one of which is this Augmented Reality. Augmented Reality is indeed very new for the speakers, but the participant agrees that the Augmented Reality media is developed for vocabulary learning. The development of Augmented Reality media can improve cognitive and motor skills for students according to the participant, "Of course if it is from vocabulary itself... it is from their cognitive skill. But it also may be from their motoric, so how to pronounce itself".

Cognitive abilities will help students to understand the meaning of the vocabulary, while motor skills will help students know how to pronounce correctly. In fact, the speaker also said three reasons why he agreed with the technology-based Augmented Reality media for vocabulary learning, "I guess how good it is ... it is good. First, indeed to develop the creativity of the teacher ... second, from that era, yeah ... third, it seems that there are demands from students as well where students are boring with the KBM that is just like that. So, learn with anything that has digital matters by using mobile phone and the internet and YouTube".

2. Teacher's Strategies in addressing the challenges of Augmented Reality to teach vocabulary at Barunawati High School

The use of technology-based media such as Augmented Reality is indeed very efficient in terms of form. Although the media is already good for use in the classroom, but the situation in the classroom will significantly affect the course of teaching and learning activities in the classroom. Conditions that Teacher can control initially to become

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⁵⁶Nadiem Anwar Makarim. "Circular letter of the Implementation of an Emergency Education" *Ministry of Education and Culture* ,(https://www.kemdikbud.go.id/main/blog/2020/03/mendikbud_terbitkan-se-tentang-pelaksanaan-pendidikan-dalam-masa-darurat-covid19, accessed on 15 July 2020)

complicated or even cannot control again. Tackling classroom situations that cannot predict, we need a strategy to be able to manage students in the classroom. A good plan will make the Teacher will be more comfortable when doing the teaching-learning process in the class.

The strategy used is also, of course, based on the experience experienced by the Teacher. The strategy also will make the teaching-learning process will be a success. In accordance with the answers given by the participant, she explained several strategies based on his personal experience. These strategies include the following:

a. Always asking

As educators in this digital era must surely be able to make the best use of applications and software to be used as learning media. However, this uses The Teacher must also learn how to use it. The participant said, "...I have never known, so I have to study, that's all, secondly, no, do not be ashamed to ask, I still not understand well about the technology. I am also old, there must be young people who understand better, right?", based on the participant explanation, there are fundamental differences when using a technology, those are age and generation. Those will affect the speed of understanding related to software or digital-based applications.

Therefore, the participant revealed that the Teacher should not be ashamed to ask younger people, even the students themselves. It will also help the Teacher to be more able to master applications or online software. The relation with this Augmented Reality which is still considered new by the speakers, he also will not be ashamed to ask first. As the participant said, "...I guess the younger who know the current era better than me, which is all".

b. Controlling the Students

When going to teach in class, as a teacher, the participant revealed that the mastery of the class must be done before starting teaching and learning activities. The participant said, "...I mastered the class first and certainly for example every lesson I would have to walk", based on the participant's opinion, she manages the class by controlling to each student's table. She said "...sometimes students play with their self so controlling by walk around", the activity of participant doing is carried out to monitor and minimize the use of mobile phone that are not necessary, if indeed at that time the Teacher told to use a mobile phone then only used as needed. However, the participant also said that if not all classes are being taught also supervise by going around.

The participant revealed "because I use a microphone. So, for example there is something a little move I directly just call it.. Amos ...

that's it, I usually do that and I will scream and wuttt ... But if in regular classes I get used to going back and forth, standing, explaining, etc., usually I control like that.", because there are indeed two classes at Barunawati Surabaya High School namely; excellent and regular class. So, each resource class has its own way when supervising students in class.

When the participant is teaching in a regular class, he will go around to do the control and supervision. In contrast, for the superior level, the participant can call the name of the students who are doing suspicious movements using the class microphone. This supervision is essential, considering the use of Augmented Reality media for vocabulary learning using mobile phone as a support tool and also keeping students using their mobile phone wisely when learning and when needed. The participant added his opinion regarding the influence of mobile phones on students, "...because it is extraordinary, the effect of HP was extraordinary, an extraordinary game interesting".

c. Divide the Group

Augmented Reality media in this vocabulary learning uses mobile phones as a supporting tool. Like the strategy previously mentioned by the informants, the use of mobile phones for students nowadays is widespread in class. Although the Teacher allows students to use cell phones, there are still many students playing cellphones during teaching and learning activities. In an attempt to minimize the use of mobile phones when they are going to use in learning, the speakers will divide the groups.

The participant divide the group has aims to monitor students if they want to use Augmented Reality media in vocabulary learning in class. The participant said, "...I will form a group so it is divided there, the use for Augmented is also not allowed for all students, so for example, in one group only one can finally the other one has the opportunity to also discuss together so not just playing alone", besides to do the monitoring to the students, divide the group will make each students will be more active.

B. Discussion

In accordance with the explanation of the above research findings, the participant has several needs that must be had in determining the media. For this reason, a needs analysis is conducted to identify these needs. In research question 1 discusses the needs of the participant based on three aspects of needs analysis; wants, lacks, and necessities. While in the research question 2 discusses the strategies that will the participant applied if implementing the Augmented Reality as a medium to teach vocabulary.

1. Teachers' needs to teach vocabulary using Augmented Reality as a medium

In the aspect of wants, the participant wants if a media will help him in teaching and learning activities in the classroom. Correspondingly, Wahyudi, Wibawanto, and Hardyanto revealed that learning media is a tool used and created by teachers to help to teach⁵⁷. The media are expected to facilitate students to be able to understand the material delivered by teachers in class. But here facilitates not by always guiding them and providing content instantaneously, but students must also be more active. Because, in essence, the media is a tool to support instructor learning in class. Therefore, the media must also be able to contain the ability of critical thinking from 4C. From that ability, students will try to be able to think deeper and be more active. Along with the media as a tool for understanding students, it must also make students become the focus of the material to be delivered.

As of now, the media that can make students more enthusiastic is to use technology-based media. This technology-based media has many benefits for students and teachers. Based on Razak, Jalil, and Ismail, the use of technology-based media can also provide active learning⁵⁸. In the previous explanation of technology-based media such as Augmented Reality, students will be more interested in using it because the media uses mobile phones. As for the instructors themselves, technology-based media are straightforward to carry anywhere and can be used at any time. Neilson, Beekhuyzen, Craig said, teachers must be able to adapt to the current era and still give the impression of balanced learning between practice and use of technology, which is entirely digital⁵⁹.

Augmented Reality is a media that is very easy to carry anywhere because this media is indeed an application that must be downloaded first via a mobile phone. Although Augmented Reality media attract the attention of students and teachers, this media must also adjust to the Basic Curriculum (KD), which will be used when teaching in class.

The second aspect concerns the shortcomings of using Augmented Reality media to teach vocabulary in class. Sadieda, Bimantoro, Muzakie,

Primary Education Teachers: The Roles of Leaders and Stakeholders. *International Journal of Emerging Technologies in Learning*. Vol.14, No. 24. pp. 184-205. DOI: 10.3991.

Wahyudi, U., Wibawanto, H., Hardyanto, W. 2017. Pengembangan Media Edukatif Berbasis Augmented Reality untuk Desain Interior dan Eksterior. *Journal Unnes*. Vol. 6 No. 2. pp. 98-107.
 Razak, N. Jalil, H. Ismail, I. 2019. Challenges in ICT Integration among Malaysian Public

⁵⁹Neilson, J., Beekhuyzen, J., Craig, A. cited in Farnan, Paro, Higa, Edelson and Arora. 2012. Which E-Learning Technology is Right for me?. *International Journal of Emerging Technologies in Learning*. Vol. 7, Issue 2. DOI: 10.3991.

Bagus., Rahmawati vocabulary is a specific material in the language⁶⁰. As English Foreign Language students certainly have different vocabulary abilities. These different abilities can influence the level of students in understanding a vocabulary. Of course, with any media students who have the level above will understand more quickly than the level below. Overcome this; additional media is needed to facilitate students who have a level below that. Furthermore, the creativity of students and teachers in using Augmented Reality media for vocabulary teaching.

For students and Teacher, this media is extraordinary in their ears because they do not know the name of Augmented Reality. For teachers with this Augmented Reality media, they must be able to follow and study technology-based media. This media is needed trigger that can bring up the desired object, for that creativity is needed to create a trigger and adjust the object that has been determined. Also, making Augmented Reality media suitable for the material so that learning can be useful and not easily bored. The third is the habit of participants with frequent use of mobile phones. The mobile phone is items that cannot be kept away from students. Mobile phone themselves are often used as entertainment by students to find fun and also stay abreast of the times, such as playing online games and active social media⁶¹. Khaeriyah and Mahmud, on a mobile phone, there is an operating system that can run various applications⁶². They look for every opportunity to be still able to play mobile phone even when learning takes place. From that case, it is certainly a concern when trying to use Augmented Reality media because its use will be used by students to play. Fourth, the Augmented Reality media itself is derived from the provider used by teachers and students. Each provider will provide different facilities, such as facilities and speed.

The third aspect of needs analysis is necessities. There are needs that affect Augmented Reality when it will be used. When you want to use this media, of course, you must have a quota. Quotas will help you to be able to access services online, such as this online-based Augmented Reality example. Besides the existence of a quota to be able to access Augmented Reality media, the use of gadgets is also very much needed. For example, a laptop and mobile phone that are used as a tool to be able to find information quickly. Needs in this increasingly advanced era should also be able to master the use of technology well because education

⁶⁰Sadieda, L., Bimantoro, R., Muzakie, A., A. Bagus., Rahmawati, R. (2019). The Effect of Using Dictionary to Develop Students' Vocabulary in MTs. Al- Musthofa. *Atlantis Press*. Vol. 434. pp. 179-183

⁶¹Asmurti., Unde, A., Rahamma, T. 2017. Dampak Penggunaan Smartphone di Lingkungan Sekolah Terhadap Prestasi Belajar Siswa. Vol. 6, No. 2. *Jurnal Komunikasi KAREBA*. pp. 225-234.

⁶²Khaeriyah., Mahmud. 2017. Pengaruh Intensitas Penggunaan Smartphone dan Pemanfaatn Internet Terhadap Motivasi Belajar dan Hasil Belajar Ekonomi. *Economic Education Analysis Journal*. Vol. 6, No. 1. pp. 140-149.

and technology will always coexist. Link up with technology will also be able to provide an exciting atmosphere and not be bored⁶³. Apart from, indeed, because of the increasingly digital era, education must also always be changed by the needs needed.

When learning with the gadget, it will facilitate the students and Teacher. For the teachers themselves, it will facilitate the carrying of flexible media and can also improve critical thinking for students. So that it will be able to change the learning patterns that were initially from teacher centres to student centres because they are not fixed with books and students are also required to be more active. The use of Augmented Reality will be able to attract the attention of students because this media application is based online. In addition, students will also prefer to use online-based media because it will not burden students in carrying it, for example, is a dictionary.

Based on the needs analysis with the teachers in Surabaya Barunawati High School about Augmented Reality as a vocabulary learning media, there is a vital need for teachers. The first need is a learning medium that is very easy to carry anywhere and flexible too. This makes it easier for teachers to take media that will be used in the classroom and also does not burden teachers with large media that is difficult to carry. The media that is flexible now is media based online because it is enough to use a mobile phone. The relation with online-based media, Augmented Reality media is one of them.

Although, media Augmented Reality is still new for teachers, this media is expected to facilitate in increasing the interest and focus of students in vocabulary learning. However, the use of online-based media must also be in accordance with the Basic Curriculum. It aims to make the media used in accordance with the objectives of each Basic Curriculum. Although Augmented Reality is a suitable medium for vocabulary learning, it must still pay attention to the Basic Competence in the current curriculum. It must be ideal with the Basic Competence in curriculum because the Augmented Reality is still new in the English curriculum.

The second requirement is the use of gadgets, especially mobile phones, when teaching and learning activities take place. The use of mobile phone while learning raises its polemic, although it has the advantage of using gadgets also has a negative influence on education. Digital marketing research institute Emarketer estimates "in 2018, there are more than 100 million active mobile phone users in Indonesia" ⁶⁴.

Graders' English Vocabulary in Gaza Governorate

64 Digital Marketing Research Emarketer. "Indonesia is the bigest user in Asia's Technology

"Ministry

marketer. "Indonesia is the Communication

est user in Asia's Technology and Informatic",

⁶³Rabea, T. (2016). The Effectiveness of Augmented Reality Applications on Developing Third Graders' English Vocabulary in Gaza Governorate

From Emarketer data, the user of the mobile phone always increases in a year-to-year. Students will be very dependent on mobile phones because it is too addictive.

Meanwhile, the mobile phone will bring benefits to the Teacher, although the students addicted to the mobile phone and always use it anytime. The benefits of using a mobile phone are useful for teachers, which can increase creativity. At this time, teachers will try to create new media to make students not saturated. Indirectly the Teacher can master the new media and can find out how to implement it in class.

However, this also raises anxiety for teachers. Generally, students will undoubtedly be able to take advantage of the use of the mobile phone for other activities, such as playing games. In addition, students will also look for instant ways to browse the internet and are lazy to read books because reading requires strong intentions. By reading, it will get an extraordinary ignition can and can increase the level of students⁶⁵.

The third requirement is to support providers of Augmented Reality media in teaching vocabulary. The provider will greatly influence the success or failure of the Augmented Reality media. To be able to run Augmented Reality media, a good internet network is needed. The internet will provide convenience in accessing sources of information instantly and in accordance with the needs required 66. The internet will also depend on speed and quota.

The speed of the internet that is in the provider will determine how quickly the desired object will appear or not even appear when it is experiencing an unstable network. Based on the results of research from Kamba (2009), found problems in using the internet, which is located on a slow internet connection⁶⁷. Moreover, not only about speed of the internet, quota also has an effect because if you want to access online-based media, of course you must have enough quota. Quota differences in each provider will cause price differences as well. At the same time, teachers worry about the economic level of different students. The economic level will undoubtedly be a significant factor in buying the provider that will be used.

(https://kominfo.go.id/content/detail/6095/indonesia-raksasa-teknologi-digital-asia/0/coretta, media accessed on 15 July 2020)

asia/0/sorotan media, accessed on 15 July 2020)
 Alsowat, H. 2016. Breaking Down The Classroom Walls: Augmented Reality Effect on EFL Reading Comprehension, Self-Efficacy, Autonomy, and Attitudes. *Studies in English Language Teaching*. Vol. 5 No. 1. DOI:10.22158

⁶⁶Khaeriyah., Mahmud. 2017. Pengaruh Intensitas Penggunaan Smartphone dan Pemanfaatn Internet Terhadap Motivasi Belajar dan Hasil Belajar Ekonomi. *Economic Education Analysis Journal*. Vol. 6, No. 1. pp. 140-149.

⁶⁷Kamba, M. 2009. Problems, Challenges and Benefits of Implementing E-learning in Nigerian Universities: An Empirical Study. *International Journal of Emerging Technologies in Learning*. Vol. 4, Issue 1. pp. 66-69. DOI:10.3991

2. Teacher's strategies in addressing the challenges of Augmented Reality to teach vocabulary at Barunawati High School

After knowing what is needed from the instructor about Augmented Reality that is used as a medium for vocabulary learning, then how do teachers use strategies to improve when using this Augmented Reality media. From the interviews conducted by teachers obtained three strategies.

This Augmented Reality Media is still new to many people, starting from how it works, how to make it, and what its benefits are like is still unknown. Therefore, the instructor's first strategy is to find out how Augmented Reality is and what the media looks like. Teachers find out about the media of Augmented Reality by asking younger people and understanding about the media. This is triggered due to differences in age and era that are not the same. With the younger ones, surely it will understand because now is the digital era. This is happen because there is a different era, and the Teacher also still try to adjust the situation from now. At this time, the school is close, but the teaching-learning process even happens with the in networking (Daring). It is like teaching-learning process by virtual or video call in the application.

Even though now is the digital age, and everything is fast-paced, it will be a challenge if the use of Augmented Reality media for vocabulary learning is implemented in the classroom. The reason the constant use of the mobile phone will fixate students while learning takes place. The purpose of the mobile phone will also trigger students to access things that are not needed when teaching and learning activities take place, such as playing games. The people consumption, especially for students are very wasteful in using quotas.

Overcoming that, the second strategy is to manage the class and master the class. If the Teacher can learn the lesson well, of course, he can lead each student. According to Saban mastery of classes aims to provide a comfortable learning atmosphere and prevent students from misbehaving⁶⁸. In addition to supervising the use of the mobile phone, the Teacher also goes around and calls out the names of students who cannot be conditioned.

Mobile phones are certainly very necessary in running the Augmented Reality media for vocabulary learning. However, not all students will use their respective mobile phone. Students will be divided into groups and each group will only use one mobile phone to use this Augmented Reality media. This is done to minimize the use of the mobile

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⁶⁸Saban, A. (2009). Management of Teaching and Class Control. *Procedia Social and Behavioral Sciences*. Vol. 1. pp. 2111-2116. DOI:10.1016

phone that are not in accordance with instructors' instructions and also to encourage students to discuss so as not to play alone actively.

In addition, this grouping aims to create cooperative learning. Nhan and Nhan (cited in Johnson and Johnson, 2019) explained that cooperative learning could improve the quality of students and can provide chemistry between students⁶⁹. While for the Teacher, cooperative learning can make the easier when the Teacher explain the material in front of the class. Cooperative learning can also make the atmosphere in the class will be attractive. That is happen because each students in their group will be active not just talkative. They will share their ideas to reach their goal.

The Augmented Reality application will give the advantage for the Teacher and students. For the previous studies, Augmented Reality alwaysimproving the students' motivation and also improve their score. The students' motivation increase because the Augmented Reality will be worked on mobile phone and it will show the 3-dimension object to become real⁷⁰.

⁶⁹Nhan, H., Nhan, T. cited in Johnson and Johnson (2019). Different Grouping Strategies for Cooperative Learning in English Majored Seniors and Juniors at Can Tho University, Vietnam. *Education sciences*. Vol. 9, No. 59. pp. 1-16. DOI:10.3390

⁷⁰Furht, B. (2011). *Handbook of Augmented Reality*. New York, USA: Springer



CHAPTER V

CONCLUSION AND SUGGESTION

This chapter is filtered to provide the conclusion of this study from the data that have already analyzed in the previous chapter and it will link-up with the previous study. In this chapter also add suggestion for further researcher, teacher, and school.

A. Conclusion

The Teacher's needs to teach English vocabulary through Augmented Reality application are explained in the three important aspects. The first aspect is choosing a correct provider that gives good facilities as internet speed and quota. The second aspect is the using online -based media for teaching learning process in the classroom. Then, the third aspect is applied the gadget as a tool for teaching vocabulary in the classroom. Those three aspects are the Teacher's need to develop the Augmented Reality application as a medium for teaching vocabulary for the students.

The Teacher's strategies in addressing the challenges of Augmented Reality to teach vocabulary are divided into three strategies. The first strategy is always asking about AR application to the younger that understand better than the Teacher. This application is the newest in Indonesia curriculum of English. So, that is why the Teacher must learn it before applying the media. The second strategy is controlling the students in using their mobile phone. As software, Augmented Reality needs a mobile phone to operate the media. In fact, the students try to use mobile phone clandestinely in the classroom. They used their mobile phone to plays some game or open their social media. The management class is very important to reduce the student using their mobile phone. Alternative way to decreasing the students' habit in using mobile phone, the Teacher mentioned the last strategy is dividing the group. Grouping students have purposes to make the students more active because they can discuss together with their members, and also it will reduce the excessive mobile phone use to them.

B. Suggestion

Based on the conclusion and the limitation of the research above, the researcher has suggestion for :

1. Further researcher

In this research, the researcher focuses on the teacher's need when use the Augmented Reality to teach vocabulary and the strategies that teacher's implementing the media. For the further researcher that want to investigate more about Augmented Reality application to teach vocabulary can consideration the teacher's need and the strategies when want to apply the media in class. The consideration can help the further researcher to be ready when overcoming the challenges.

2. Teachers

Augmented Reality is online-based learning media. It also uses as media to teach the students in the classroom, especially vocabulary. From that, the teacher must know more about Augmented Reality. So, the teacher must learn more about the media to improve their skill and creativity when teaching the students in the class.

3. School

The teacher must have the role of that school make. Augmented Reality is the media that use the mobile phone to operate it. The students and teacher, of course, will use the mobile phone, because with a mobile phone it will facilitate when teaching-learning process held. So, the school can give support to the teacher.

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