Need an analysis of virtual reality-based learning media for French listening skills of DELF A1

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ABSTRACT

Interesting learning is the dream of every educator and student, especially in distance learning. The use of technology is the primary key in applying learning media to support 21st-century skills. The main reason for analyzing the need for virtual reality-based learning media is that there are not yet varied learning media and the difficulty of making and finding the appropriate learning media, especially for French listening skills. This study aimed to analyze the needs related to virtual reality-based learning media in the DELF A1 French listening skills course appropriate to the current situation during the pandemic. This study focuses on the perspectives of lecturers and students regarding the need for virtual reality-based learning media, especially in the French listening skills of DELF A1 at the French Language Education Study Program. This research used the research and development design. Data were collected through observation, documentation, and questionnaire distributed to 55 students and 6 lecturers. Data analysis was carried out using three phases, including data reduction, data display, and conclusion drawing/verification. This study showed that the use of virtual reality-based learning media in listening skills is crucial and needed by lecturers and students. It was proven with the lecturers and students' statements that 70% of the lecturers strongly agreed and 30% agreed, and 67% of the students agreed and 33.3% strongly agreed. Therefore, this needs to be done so that it can be a solution for students and lecturers regarding the application of technology-based interactive learning media and the addition of teaching materials from the Alter Ego1+ book used in the French Language Education Study Program. As a result, the learning atmosphere is more interesting and effective and invites students to feel the sensation of being in a real situation in the conversation.

Keywords French language, Learning media, Listening skills, Virtual reality

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INTRODUCTION

The learning process at every level of education, from elementary to tertiary levels, has undergone major changes since the emergence of the covid-19 pandemic. Everything has changed, from textbooks to e-books, face-to-face meetings to virtual meetings, to increasingly varied learning platforms. The change in learning that was initially done offline is now online with a new life order.

According to Pannen (2021), to face this new order of life, a new mindset, attitude, and way of doing things are needed. These three aspects show that every teacher and lecturer must think creatively during distance learning (distance learning).

Rouet, Thibault & Balacheff (2003) also explain that *« Les nouvelles caractéristiques de la société en réseau favorisent des formes collectives de travail, d'accès au savoir, d'apprentissage, d'enseignement. Communautés virtuelles et intelligence collective sont au cœur du développement des TICE. »* The new characteristics of networked societies support collective forms of work, access to knowledge, learning, and teaching. Virtual communities and collective intelligence are the heart of ICT development.

Not only in Indonesia, but the Romanian education system also manifests several innovative trends: of competency-based curriculum approach, new diverse training programs, flexible vocational training, the use of interactive training strategies, concentration of education on students, portability, and mobility. To achieve this goal, it is necessary to develop skills to use information and communication technology (ICT) as a necessary prerequisite as explained by Petrovici and Ganea (2014). *« Le système éducatif roumain manifeste de multiples tendances innovantes: approche curriculaires basé sur les compétences, des nouveaux programmes de formation diversifié, des itinéraires de formation professionnelle flexibles, utilisation de stratégies de formation interactives, concentration de l'éducation sur l'apprenant, la portabilité et la mobilité. Pour atteindre ces objectifs, la nécessité de développer les compétences pour utiliser l'information et les technologies de la communication (TIC) devient un préalable nécessaire. »*

Karsenti et al. (2020) explain that *« Le passage de l'enseignement en présentiel à l'enseignement en ligne, devenu une préoccupation centrale pour les universités du monde entier qui semblent s'être métamorphosées en quelques mois. »* The shift from face-to-face to online education that becomes a major concern of universities around the world, seems to have changed in a matter of months. Universities have spent most of their summers improving their quality of distance learning practices as well as increasing their use of digital tools for online learning (see McCormack, 2020).

The need to adapt to technology during the covid-19 pandemic in the learning process is urgently needed, especially in learning foreign languages such as French. The role of technology in distance learning is very influential, such as using Google Classroom, Google Meet, WhatsApp Group, Zoom, YouTube, Skype, Microsoft Team, and other applications that can be used as learning platforms.

In the French Language Education Study Program, teaching materials for skills courses such as listening skills, reading skills, writing skills, and speaking skills are still centered on the use of the Alter Ego+ in the form of a textbook. The teaching materials provided in the book are in the form of texts, images, and audio that are integrated to support the four skills taught at each level.

The teaching materials contained in the Alter Ego+ textbook are appropriate with the needs of learning French and the situation in France, but the use of the Alter Ego+ textbook in this distance learning situation is less than optimal. Many of the students are not focused during the learning process.

This is because there are no appropriate language learning media, especially in French listening skills. Tarigan (1987) reveals that listening is a process of listening to verbal symbols with full attention, understanding, appreciation, and interpretation to obtain information, capture content or messages, and understand the meaning of communication that the speaker has conveyed through speech or oral language. Tangkakarn & Gampper (2020); Abdulrahman et al., (2018); Tanrikulu (2020); and Listiyaningsih (2017) show that effective listeners tend to be more successful in learning. Thus, it can be claimed that listening skills can be a key factor in a person's learning in the classroom. Momang (2021) argues that there are basic things that need to be distinguished between listening and hearing skills in understanding listening skills. This is because many people still think that listening and hearing activities go through the same process. The difference between hearing and listening can be seen in terms of intensity. Hearing activities do not really need attention, while listening activities require attention in understanding what they are listening to.

In line with the statement above, (Cornaire, 1998) states that *"L'écoute (même s'il ne s'agit pas vraiment d'écouter en vue de comprendre sémantiquement les textes oraux entendus mais tout simplement à écouter pour pouvoir les répéter) est une étape obligée avant la production."* Listening (although it is not really about listening to understand semantically or the spoken text which is heard but just listening to repeat it) is a necessary step before production. The term "oral comprehension" can refer to phenomena of different complexity involving more or less important attentional resources and a wide variety of processes, ranging from the simple identification of linguistic forms, passing through the construction of a semantic representation of the text and ending with a critical interpretation of the meaning proposed by the speaker (Wojciechowska, 2021). Based on several definitions of listening skills, it can be concluded

that listening is the ability to understand sound symbols to capture the content or message of the information conveyed by others. Its role is quite important because listening is the initial process of language learning, then it is followed by producing words, phrases, and sentences in the next process.

One of the important elements in learning is the material presented based on the students' abilities. The accuracy of the material is determined when the teacher chooses the right material according to the skills and interests of students (Puspitoningrum, 2015). However, this is not limited to teaching materials but also learning media. For this reason, lecturers' creativity is needed to support optimal distance learning, especially for students studying French in the first year. According to Arsyad (2011), learning media is a tool that serves to convey messages. Learning media has an important role in the process of delivering teaching materials.

Rahmayantis (2017) clarifies the opinion above, and she says that in the learning process, educators who are teaching function as a source of messages, while students become recipients of messages in the form of subject matter. Educators must strive so that the message to be conveyed can be understood easily by students. The subject matter and competencies contained in the curriculum are changed in such a way that the materials are easily absorbed by students properly. Skinner in Sadiman et al. (1984) state that one of the important components in teaching and learning activities is learning media. Therefore, learning media must be able to be a communication bridge between the sender of the message and the recipient of the message. In this case, the sender of the message is the educator, while the recipient of the message is the student.

One way to increase student interest in learning is to use technology-based learning media (Hadza, Sesrita, & Suherman: 2020). The use of technology in learning can help students understand the material so that the learning process becomes more effective by providing examples that can support students' understanding compared to the lecture method practiced so far. Learning media is something related to the use of real objects and visual images that are used for learning and delivered to students in which from these media, the teacher can provide stimulation so that learning becomes more effective (Jalinus & Ambiyar, 2016).

According to Satrianawati (2018), there are four types of learning media, namely visual, audio, audio-visual, and multimedia. The application of teaching media during distance learning in teaching French listening skills can be visualized by using learning media based on virtual reality (VR). Nowadays, it is not uncommon to apply VR as a learning medium. The material used in VR can be adopted from the Alter Ego 1+ book, which was used in the French Language Education Study Program to complement the material in Alter Ego 1+, but with various adjustments in which the lecturer did not only teach and train listening skills, but the content of the material was based on intercultural education, considering learning the language will not be separated from studying the culture of the country.

Martini Kristo (2017) states that VR can be widely used in various fields, including education, health, fashion, business, sports, media, construction, games/video, film and cinema, medical-therapeutic, and so on. The use of VR, with its various advantages, can support distance learning. Various interesting features such as 3D content, freedom for creators to add images, text, audio, 3600 videos, quizzes and assessments, and many more can make it easier for lecturers and students in the learning process because this learning media is easy to be accessed. The material in the form of images, text, audio, and video contained in VR can be visualized to be more interesting and created according to the wishes of the lecturer to achieve the targeted learning goals. This is reinforced by the opinion of Tsaï (2016). "

Le « raconter des histoires » collaboratif est une activité archaïque qui remonte aux sociétés les plus anciennes. Les outils de réalité virtuelle, au travers des serious games, ont prouvé leur efficacité en matière éducative. Car ce que nous cherchons avant tout au travers de l'expérience de la réalité virtuelle, c'est à renforcer notre attachement aux autres et au monde pour ressentir une intensité d'être qui justifie l'existence. Expérimenter la réalité virtuelle, c'est tenter de faire résonner un réel brut, sans fard et infini, dans notre conscience." The lecture method that is often used is a conventional way. While in the world

of education, virtual reality has proven effective because people can actually feel real situations when using it.

Various VR features, especially for listening skills, further support each student's learning style. As we know that every student has a different learning style, utilization of VR technology can maximize the three learning styles generally owned by students, namely auditory, visual, and kinesthetic learning styles.

VR has been widely proposed as a significant technological breakthrough that has great potential to facilitate learning activities (Sun, Lin & Wang: 2010). One of the benefits of using VR is that it can encourage student learning retention (Chou, 2017). This is inseparable from the ability of VR-based learning media to bring students to the real situation without having to go to the object being observed.

The application of VR learning media can be adapted to the teaching materials provided by the lecturer. Besides being useful in supporting distance learning, this VR-based learning media can also be used in offline learning so that it is more flexible. Students can also better understand the material during the learning process.

Inoue (2008) also argues, *"Educational virtual reality (Edu VR) learning environment is not only an interactive multimedia tool but also a learning environment that is extremely close to reality."* So, the use of VR-based learning media is not only a tool but also a learning environment that is very close to reality. The use of VR is characterized by using avatars that are realized to interact with the environment. In this way, the avatar serves as a true image of the learner.

The results of research conducted by Rahma and Nurhadi (2017), who discussed VR in BIPA learning, concluded that the features of VR technology could help BIPA students master Bahasa as their target language. Kusumadewi et al. (2019) also state that VR technology is suitable for information visualization intensively. VR implementation enhances the experience of real and pseudo-space collaboration as a contribution to education. Several studies from Bahar (2014) discuss the application of VR in architecture; Hakim (2016) on the Development of Learning Media for Arabic Speaking Skills; Riyadi et al. (2017) on Virtual Reality as a Campus Introductory Media; and Ratriana (2017) regarding the Development of Learning Video Based on Virtual Reality in Elementary School shows that VR is very useful and flexible to be used in various fields.

The relevant research above shows that VR is good learning media and suitable for use, especially in online learning. VR-based learning media for French listening skills has not yet been utilized optimally in Indonesia. Facts showed that the learning process was still focused on books, audio, and sometimes video. VR media was still rarely used, especially in French listening skills. Therefore, this study provides novelty in the form of information related to the needs analysis of students and lecturers, especially in the listening subject in the French Language Education Study Program, which can provide new variations in online-based learning. Bonk Curtis J. (2002) implicitly states in the Online Training survey in an Online World that the concept of online learning is the same as e-learning. Online learning requires students and teachers to communicate interactively using information and communication technology. The advantage of online learning is that it is a fun medium, thus arousing students' interest in online programs (Riyana, 2019). As a result, online learning is ideally able to arouse students' learning interest through interesting learning media. Besides, flexibility is also a special attraction in online learning so that students can learn anywhere and anytime, which fits perfectly with the concept of this VR-based learning media. Thus, students can control their respective ways of learning and support the listening skill learning that requires oral content or materials.

The results of this study were expected to be useful for French lecturers and students related to the development of learning media based on virtual reality to face distance learning during the COVID-19 pandemic, especially in the DELF A1 French listening skills course. Besides, the results of this study were expected to be useful for audiences interested in research on the development of learning media based on virtual reality in the DELF A1 French listening skill courses and other language skills (speaking, reading, and writing) in accordance with the technological demands of 21st century. Thus, it was expected

that the three learning styles, including auditorial, visual, and kinesthetic styles in listening skills courses, could be applied optimally using technology and adjustments to the distance learning situation.

With the aim of analyzing the needs related to virtual reality-based learning media in the DELF A1 French listening skills course in the current situation during the pandemic, this research was expected to be a solution for students and lecturers, especially in the listening course in the French Language Education Study Program regarding the application of learning media as an addition to teaching materials from the Alter Ego+ book used in the French Language Education Study Program. The development of VR-based learning media was later expected to produce creative, innovative, interactive, and interesting learning for students so that students' activeness and understanding of the material being taught can be more optimal and better understood.

METHODS

This research used the research and development design, while the model used in developing virtual reality-based learning media was the development model of Lee and Owens (2004). This development model was chosen because the researchers developed multimedia development, and it has various complete procedural stages, including (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation. This was in accordance with the research that aimed to understand or analyze data in depth using the development model. Data and sources data were obtained from the questionnaire results of lecturers and students as a sample. The participants in this study were fifty-five students in the 1st and 2nd grades and six lecturers. These students were selected through the purposive sampling technique, and they agreed to participate in the research. They have gained learning experiences in French classes to provide information about the need for appropriate learning media for them. Data collection was carried out for approximately three months. Data were collected through observation, documentation, and questionnaire. The source of data for the documentation came from RPS, reference books, student assignments, and relevant articles. There were 15 questions for students and 20 questions for lecturers designed in Bahasa to ensure that all participants understood each item. The questionnaire was then distributed to respondents via Google form. All data were analyzed qualitatively according to the research questions. Data analysis was carried out using three phases, including data reduction, data display, and conclusion drawing/verification based on the theory of Miles and Huberman (Sugiyono, 2015). Then, the result was also incorporated with the existing literature.

This study used the Likert scale to measure the scale in the questionnaire. There were 5 intervals used, namely intervals 1 to 5, as follows: Strongly Disagree (SD)= 1, Disagree (D)= 2, Slightly Agree (SAg)= 3, Agree (A)= 4, Strongly Agree (SA)= 5. While the range of assessment scores used the following formula Nazir (2005).

Index formula % = Total Score/ y x 100%
Description:
y = Likert's highest score x number of respondents

The score interpretation criteria are as follows:
0% - 19.99% = very (disagree/ bad/ poor)
20% - 39.99% = disagree / not good
40% - 59.99% = slightly agree /sufficient/ neutral
60% - 79.99% = agree/ good/ like
80% - 100% = very (agree/good/like)

RESULT AND DISCUSSION

This research produced a product in the form of learning media based on virtual reality for French listening skills. Conducting needs analysis and finding problems in learning were the initial stage of this

research. This stage was an integration of the first stage of the Borg and Gall's development model (Borg & Gall, 1983), namely research and information collection in the form of literature review and classroom observations, and the three stages of model development from Dick and Carey (Dick & Carey, 1996) namely identifying learning objectives, analyzing learning, and identifying students' behavior and characteristics. Therefore, the researchers used data collection techniques in the form of observation and questionnaires to identify the needs of students and lecturers.

Based on observations made in the French Language Education Study Program, technology-based learning media was still rarely done. Although several lecturers have used songs, podcasts, and films in the listening skills subject, these media were not used very often. Besides, VR-based learning media had never been applied in learning. The audio was still the main medium used in learning by referring to the textbook in the French Language Education Study Program, namely Alter Ego+. Whereas listening skills, especially in French, have their own challenges. It can even be said to be one of the language skills that are quite difficult.

The students were asked to listen to the audio that was playing. After finishing playing the audio once, the lecturer began to explore general information obtained by students, such as how many people were in the conversation or where the conversation took place. Students would answer the information obtained from the audio played for the first time. Next, the lecturer played the audio again for the second and third time, followed by a question-and-answer session related to information from the conversation, starting from general information to specific information.

During the audio playback, students often found it difficult to understand the context of the situation and what was being discussed in the conversation. Moreover, the French-speaking style is very fast, and the information becomes blurry and less well understood.

Based on the results of the observations, it was determined that VR-based learning media was needed in the listening skills subject. For this reason, technology-based interactive learning media was needed by using audio-visual to make learning more effective and fun. VR-based learning media can be a solution to these problems. VR technology in learning can help lecturers and students in the learning process, especially in distance learning during the Covid-19 pandemic.

To find out the needs of French Language Education students and lecturers regarding learning media in the subject of *Réception Orale* especially DELF A1, questionnaires were distributed to French Language Education lecturers and students. The questionnaire was made based on the theory adopted by the research team in chapter II. Questionnaires for lecturers and students were made separately, as seen in the appendix.

The questionnaire for lecturers consists of 20 statements and for students consists of 15 statements. There are 25 questions with 5 answer choices, namely SA (Strongly Agree), A (Agree), SAg (Slightly Agree), D (Disagree), and SD (Strongly Disagree). The questionnaire was then distributed to French Language Education lecturers and students via google form media.

Meanwhile, documents were obtained from the study of documents used in listening skills learning, such as semester lesson plans, lecture assignments plans, scoring rubrics and teaching materials, students' assignment results and reference sources used, and relevant research. The findings indicated that (1) there was a discrepancy between the learning objectives and the learning experience, (2) the assignment plan was more directed towards cognitive competence related to conceptual knowledge of listening, (3) the availability of an assessment rubric that accommodated all exercises, and assignments given, and (4) unupdated reference sources. The problems that have been identified refer to the same two problems with previous findings related to learning media (Made Darmayanti, 2018; Nurani et al., 2018; Soerraya & Sriwulandari, 2019; Momang, 2021). Besides, the researchers also distributed questionnaires to students and lecturers to confirm the results of observations and literature reviews and identify the needs for listening learning.

Moreover, students' needs based on the results of questionnaires also showed that listening skills learning required technology-based learning media based on updated material designs, assignments and

assessments, and media that can be accessed easily as a reference source for learning. This media also needed to be packaged attractively to accommodate various forms of material such as images, animations, audio, and video. Based on the results of the identification of problems and learning needs analysis for listening skills, the researchers tried to design this learning media by containing learning objectives and materials in accordance with real-life in French society based on the Alter Ego 1+ book reference, audio, along with questions in each material. Moreover, the packaging of the *virtual reality*-based learning media was designed digitally by maximizing applications and sources of materials that can contribute to increasing students' competencies.

The following were the description results of the questionnaire given to students and lecturers. There were 55 students who filled out this questionnaire from the 2020 and 2021 batches. The number of questions asked for students was 15. Besides, the lecturers who filled out the questionnaire were 6 people with 20 questions.

Table 1
Results of Questionnaire Given to Students

No	Statement	Response					Total Score	%	Description
		SA	A	SAg	D	SD			
1	Listening skills subject *(Réception Orale)* is not easy for students.	7	17	19	12		184	67	Agree
2	I find difficulties when taking the listening skills subject *(Réception Orale).*	3	14	21	17		168	61	Agree
3	I am not able to understand the learning material well if only using audio in the listening skills subject (*Réception Orale*).	3	20	23	9		182	66	Agree
4	I am not able to understand the situation context well if only using audio in the listening skills subject (*Réception Orale*).	1	25	21	8		184	67	Agree
5	The use of audio-based learning media sometimes makes me less understand the learning material.	1	22	19	13		176	64	Agree
6	The availability of learning media in the classroom for the listening skills subject (*Réception Orale*) is inadequate.	3	15	16	19		181	66	Agree
7	The availability of learning media in the classroom for the listening skills subject (*Réception Orale*) is not variative.	5	18	20	12		181	66	Agree
8	I am excited if learning using technology-based learning media.	20	28	6	1		232	84	Strongly Agree
9	I need a variety of interactive learning media with the combination of audio and visual to increase my understanding of the listening skills subject (*Réception Orale*).	23	25	6	1		235	85	Strongly Agree
10	I have never used virtual reality-based interactive learning media for the listening skill subject (*Réception Orale*).	27	22	3	3		238	87	Strongly Agree
11	I am interested in using virtual reality-based interactive learning media for the listening skill subject (*Réception Orale*).	20	26	8	1		230	84	Strongly Agree
12	Virtual reality-based interactive learning media is needed in distance learning.	10	27	17	1		181	66	Agree
13	Virtual reality-based interactive learning media is needed in the listening skills subject (*Réception Orale*).	7	29	16	3		205	75	Agree
14	I have an android smartphone to support distance learning.	21	28	4	2		233	85	Strongly Agree
15	I have an android smartphone to support the use of interactive learning media based on virtual reality.	11	25	13	6		185	67	Agree

The table of students' questionnaire results above shows that 67% of students agreed, and 33% expressed that they strongly agreed. Besides, the percentage of lecturers' statements showed that 70% of lecturers strongly agreed and 30% agreed, as shown in the table below.

Table 2
Results of Questionnaire Given to Lecturers

No	Statement	Response					Total Score	%	Description
		SA	A	SAg	D	SD			
1	The subject of listening skills *(Réception Orale)* is difficult.	2	3	1			25	83	Strongly Agree
2	I only use audio when teaching the listening skill subject *(Réception Orale).*		3	1	2		19	63	Agree
3	I want to use other technology media in teaching the listening skill subject *(Réception Orale).*	4	2				28	93	Strongly Agree
4	I want to use interesting learning methods in the listening skill subject *(Réception Orale).*	5	1				29	97	Strongly Agree
5	I want to use interesting learning media in the listening skills subject *(Réception Orale).*	5	1				29	97	Strongly Agree
6	Interesting learning media is very needed in the listening skill subject *(Réception Orale).*	5	1				29	97	Strongly Agree
7	The availability of learning media in the classroom for the listening skill subject *(Réception Orale)* is inadequate.	2	2	2			24	80	Strongly Agree
8	The availability of learning media in the classroom for the listening skill subject *(Réception Orale)* has not been able to motivate students optimally in learning.	1	1	4			21	70	Agree
9	Learning media used in the listening skills subject (*Réception Orale)* are not variative.		5	1			23	77	Agree
10	Learning media used in the listening skills subject (*Réception Orale)* are not innovative.		4	1	1		21	70	Agree
11	I have not yet used audiovisual-based learning media in the listening skills subject *(Réception Orale).*		3	3			21	70	Agree
12	I am excited when teaching using technology-based learning media.	3	3				27	90	Strongly Agree
13	I need a variety of interactive learning media by combining audio and visual to increase students' learning motivation further.	3	3				7	90	Strongly Agree
14	I have not yet used virtual reality-based interactive learning media in distance learning.	1	4	1			24	80	Strongly Agree
15	I have not yet used virtual reality-based interactive learning media for the listening skill subject *(Réception Orale).*	1	4	1			24	80	Strongly Agree
16	I need a variety of interactive learning media by combining audio and visual in the listening skills subject *(Réception Orale).*	2	4				26	87	Strongly Agree
17	I am interested in using virtual reality-based interactive learning media for the listening skill subject *(Réception Orale).*	1	5				25	83	Strongly Agree
18	Virtual reality-based technology is needed in distance learning.	3	3				27	90	Strongly Agree
19	Virtual reality-based interactive learning media is needed in distance learning.	2	4				22	73	Agree
20	Virtual reality-based interactive learning media is needed in the listening skills subject *(Réception Orale).*	3	3				27	90	Strongly Agree

The tables above show that the use of virtual reality-based learning media in listening skills is very important and needed for lecturers and students. Lecturers and students consider that the use of virtual reality-based learning media in the learning process is indeed necessary.

Furthermore, the validity test shows that the significance value (sig) P1 to P15 is less than 0.05. This shows that the indicators P1 to P15 are said to be valid and able to measure the question variables given to students. Meanwhile, the reliability test can be seen in the table below.

Table 3
Reliability Statistics of Questionnaire Given to Students

Cronbach's Alpha	N of Items
.829	15

Based on the results of the SPSS output above, the Cronbach's Alpha value of 0.829 is greater than the limit of the reliability test, which is 0.60. The value of 0.829 > 0.60 means that the variable indicators of the questions given to the students are reliable, which means that these indicators have consistency in measuring the questions variables given to the students.

Table 4
Reliability Statistics of Questionnaire Given to Lecturers

Cronbach's Alpha	N of Items
.646	20

Based on the results of the SPSS output above, the Cronbach's Alpha value of 0.646 is greater than the limit of the reliability test, which is 0.60. The value of 0.646 > 0.60 means that the variable indicators of the questions given to the lecturers are said to be reliable, which means that these indicators have consistency in measuring the variables of questions given to the lecturers.

The above research reinforces previous research from Pratama et al. (2019) on Virtual Reality Application Development to Know Various Objects Around the House in English. The research that has reached the implementation stage involved 20 respondents that showed a result of 87.35%, indicating students' enthusiasm in learning using virtual reality application media regarding the introduction of various objects around the house in English. VR can answer the problems of students who have difficulty imagining the shape of objects around the house and easily get bored with learning media of package books that do not clearly describe the shape of the objects described by the teacher. This VR-based learning media can help the learning process become more innovative and fun, and this is very helpful for students in exploring and understanding materials, as well as for teachers in delivering materials.

Further research is from Pramintya et al. (2017) about the Virtual Reality Application to Learn Foreign Language Vocabulary Using Google Cardboard. This research allows users to interact with an environment simulated by a computer, and with the addition of google cardboard tools, users increasingly feel like they are looking for objects in the real world. Besides, users also get new vocabulary from the names of the objects in various languages given by the application, including English, Arabic, and Japanese. Based on the application testing using the results of the questionnaire, it can be known that the assessment of interface convenience done by the examiners reached 58.3%, the similarity of objects reached 79.1%, the usefulness of information reached 91.6%, system performance reached 75%, and immersive feelings reached 91.6%. This media can help students to know noun vocabulary in various foreign languages.

Research related to the analysis of the needs of virtual reality-based learning media was difficult to find, and previous research has only been found related to the implementation of VR in the learning process so that this research can be a reference for future researchers who want to analyse learning needs using VR. Both of the above studies focused on English, Arabic, and Japanese, while this study focused on French. This study showed that students and lecturers responded positively to VR-based learning

media, in which 67% of students agreed and 33% of students strongly agreed. Meanwhile, the results of the needs analysis of lecturers showed that 70% strongly agreed and 30% agreed.

The needs analysis questionnaire in this study involved lecturers from French Language Education Study Program and students from the 2020 and 2021 batches. Based on the questionnaire, it was found that most of the students stated that the subject of listening skills *(Réception Orale)* was difficult. Although the use of audio was quite helpful in learning, students did not understand the material and context of the given situation well. Besides, the availability of learning media for the *Réception Orale* subject was still less varied and inadequate. However, if students used technology-based learning media, they felt excited.

The study results also showed that there was a need for students related to variations of interactive learning media with the combination of audio and visual to increase understanding in the subject of *Réception Orale)*. Students were interested in using learning media based on virtual reality in the listening skills subject *(Réception Orale),* especially in distance learning. They said that this learning media was needed in the listening skills subject *(Réception Orale)* to support distance learning. Besides, they also have Android smartphones to support technology-based learning.

Meanwhile, the questionnaire results given to the lecturers showed that the majority of lecturers also considered that the listening skills subject *(Réception Orale)* was difficult. Most of the lecturers only used audio in learning, but there was a desire to use technology-based learning media to make it more interesting and increase students' learning motivation. The lecturers said that interesting learning media was very needed in the listening skills subject *(Réception Orale)*.

Currently, the availability of learning media in this subject was not adequate and had not been able to motivate students optimally in learning. They considered that the learning media used in the listening skills subject *(Réception Orale)* was still less varied and innovative, and they have not used audio-visual intensively. The lecturers were also enthusiastic when teaching using technology-based learning media with the combination of audio and visual to increase students' learning motivation. The use of VR-based learning media has not been used by lecturers yet, especially in the subject of listening skills subject *(Réception Orale)*.

For this reason, it is necessary to have a variety of interactive learning media by combining audio and visuals in the subject. The results showed that the use of VR-based interactive learning media was needed in the listening skills subject *(Réception Orale)* because it was considered interesting to support distance learning.

Based on the validity and reliability tests carried out on the above questionnaire, it is known that the questionnaires distributed to lecturers and students are valid and reliable. This is evidenced by the results of the existing questionnaire with Cronbach's Alpha value of 0.829 > 0.60 for students and Cronbach's Alpha value of 0.646 > 0.60 for lecturers.

This research also produces a mind map of the material used as material in VR-based learning media. The material used refers to the Alter Ego A1+ textbook used in the French Language Education Study Program, starting from levels 1 to 4. There are 10 dossiers in the book. However, 5 dossiers will be taken for one semester, namely dossiers 1, 2, 3, 4, and 5.

The materials that will be discussed in the first dossier are *Demander des informations* and *Donner des informations personnelles.* The material of *Parler de sa ville* will be discussed in the second dossier. Next, the material in the third dossier is *Parler de sa famille* will be discussed, Moreover, *Indiquer l'heure et les horaires* will be discussed in the fourth dossier, and *Comprendre le questionnaire d'enquête* will be discussed in the fifth dossier.

CONCLUSION

The model used in the development of learning media based on *virtual reality* used the development model of Lee and Owens (2004), including (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation. The needs analysis stage was the initial stage done for further research

after knowing the results of the needs analysis in this study. At this stage, the researchers identified learning needs for listening skills related to the needs of virtual reality-based learning media that accommodated learning objectives, material variations with factual and interesting listening content, as well as structured and clear forms of assignments and assessments. Furthermore, listening skill learning requires attractive learning media that can be accessed easily. These needs were then used as a basis for consideration in developing technology-based research products.

Based on the results of needs analysis using observation and questionnaire methods given to students and lecturers, the following conclusions can be drawn:

a. Learning media based on virtual reality for listening skills have not been used in the French Language Education Study Program of UNJ.
b. Lecturers and students of the French Language Education Study Program need various learning media of technology-based French listening skills.
c. Learning media based on virtual reality can solve distance learning problems and support the current learning process. This media can also provide a variety of learning methods by using learning materials with a more attractive audio-visual display so that students do not feel bored in participating in learning.

Furthermore, several recommendations need to be considered, especially for further research. The recommendations include (1) learning in the listening skills subject must be supported by the use of interesting learning media so that students are more active so that they do not get bored quickly, and make it easier to accept the material presented, (2) learning media based on virtual reality can be used as a learning media in the listening skill subject for each level because it can provide better feedback for students. In order for production results of VR-based learning media to be maximized and suitable for further use, the development needs to be done including students or respondents from various institutions, experts in the field of study, material experts, media experts, financial support, facilities, and available time as well as the ability of facilities and infrastructure in producing adequate media, (3) lecturers must have creativity in making learning media for students and make more use of other technology-based learning media such as educational videos, animations, and interactive learning media, and (4) related to needs analysis, researchers developed VR content that suits the need for French listening skills. There are six materials developed referring to Alter ego 1+ book including Questionnaire on identity (Questionner sur l'identité), Providing personal information (Donner des informations personnelles), Talking about his city (Parler de sa ville), Talking about his family (Parler de sa famille), Telling the time and schedule (Indiquer l'heure et les horaires), and Understanding survey questionnaires (Comprendre un questionnaire d'enquête).

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