

Investigating the Implementation of Multimodality and Spherical Video-Based Immersive Virtual Reality in the Indonesian Language for Foreign Speakers' Learning Materials

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Abstract—Experts have developed multimodality and spherical video-based immersive virtual reality (SV-IVR) for language learning to escalate learners' cognition. However, neither experts nor teachers have explored and optimised the use of multimodality and SV-IVR in the Indonesian Language for Foreign Speakers (BIPA) learning materials. This study investigates foreign learners' perception of multimodality and SV-IVR immersion in BIPA programme. The total sample involved in this study was 20 people from Europe, Asia, and the US. The results reveal that multimodality including utilisation of text, audio, video, and images contributed to the foreign learners' motivation and eagerness to learn the Indonesian language. Although the foreign students argued that the combination of text, audio, video, and images elevates foreign learners' eagerness to study the Indonesian language, the SV-IVR implementation indicated no significant effect on the foreign students' eagerness. Regarding the combination of multimodality and SV-IVR, the students indicated that the simultaneous use of multimodality and SV-IVR could increase their motivation to learn the Indonesian language.

Index Terms—multimodality, Indonesian language for foreign speakers, SV-IVR, learning materials

I. INTRODUCTION

Indonesian Language for Foreign Speakers or *Bahasa Indonesia Bagi Penutur Asing* (BIPA) is an educational programme for those who speak a foreign language and desire to learn the Indonesian language (Nugroho, 2017). Teachers and tutors are the two technical implementers in the BIPA programme who interact directly with learners. The use of four language skills, namely listening, reading, speaking, and writing, must be integrated (Siroj, 2015). Thus, vocabulary and sentence structure must be introduced to grow learners' expertise in using the Indonesian language (Junpaitoon, 2017). This requires a suitable BIPA approach to assist learners in fostering their Indonesian language skills. Additionally, the frequency of using the Indonesian language for specific purposes has developed significantly. The Indonesian language is not learned merely for academic purposes but also for specific purposes such as business communication, health, tourism, and economics. Foreigners in Indonesia generally select the Indonesian language for specific purposes to improve their language skills, which will potentially assist them in obtaining or providing information.

Researchers and experts have used several approaches and methods to foster learners' comprehension. Multimodality including images, video, text, and audio immersion plays a significant role in expanding learners' comprehension of learning the Indonesian language (Rahmanu & Santosa, 2022). The increased employment of multimodality in the learning materials has developed the teaching and learning equipment. The implementation of learning materials such as ebooks provides audio, video, and images which help foreign learners study the Indonesian language effectively. Audio implementation was deployed to enhance the learning media in the BIPA programme (Sahasti, 2019). Immersive audio is intended to escalate foreign learners' ability to listen to Indonesian words, which encourages students to grasp how to express the Indonesian language. Similarly, the video immersion in the ebook enriches the content, which potentially increases foreign learners' motivation to study the Indonesian language. Experts have also discovered the implementation of interactive contemporary images such as emoticons that underpin the BIPA teaching and learning materials. Emoticons include verbal and visual expression of emotion, because not only verbal communication such as text but also the facial expression itself (Merlina et al., 2013). The immersion of emoticons as an alternative in the BIPA programme enhances the instructional material variety (Arvianto, 2020). The learning media including audio, video, and handouts are deployed to develop the learners' language skills (Astuti & Bewe, 2020). The BIPA teaching systems and materials that attract BIPA learners abroad can be adjusted to the objectives of BIPA teaching through activities related to Indonesian culture such as intensive traditional games, materials, media, and pictures (Seni et al., 2019).

In line with the multimodality approach trend, the current technology frequently employed in the education field is spherical video-based immersive virtual reality (SV-IVR). Optimising information and communication technology could be fruitful for running the BIPA programme (Siroj, 2015). Further sophisticated learning media such as 3D models and animated characters are employed to help foreign speakers (Amani & Yuly, 2019). However, the tendency to spend extra time and money is the drawback of providing virtual animation. The high computer requirements are another shortcoming compared to employing a 360-camera to create SV-IVR. The 360-camera contributes to the advantage for the creator in generating SV-IVR for learning media. The satisfaction, interaction, and situational experience of SV-IVR reveal its vast potential in the field of education (Ye et al., 2021). The SV-IVR is an innovative technology with significant instructional potential. Furthermore, SV-IVR offers greater advantages in terms of technology and experience than common video. Researchers have proposed the effect of employing this technology in the education field. SV-IVR appearance gives teachers a fresh teaching concept and technique (Chen & Hwang, 2020). The SV-IVR had been utilised by teachers to elevate learners' academic competencies such as writing skills. The technology was adopted to analyse learners' writing competency and interest. The results revealed that students using SV-IVR obtained higher grades (Yang et al., 2021).

On the other hand, although learning and teaching resources have the potential to increase students' interest in and excitement for learning, this appears to be contingent on a variety of circumstances including an appropriate degree of familiarity with certain technology. Technological problems have been identified as a key contributing element in the continuation of BIPA learning programmes (Zamzamy, 2021). However, the SV-IVR immersion had no massive impact on learning achievement and learning motivation (Chang et al., 2020). In terms of the BIPA programme in Bali, the multimodal and SV-IVR advantages have not been explored significantly. With these concerns in mind, this study examines the following:

- a. To what extent is the foreign learners' perception of multimodality immersion in the BIPA towards the behavioural intention (BI) to learn the Indonesian language?
- b. To what extent is the foreign learners' perception of SV-IVR immersion in the BIPA towards the BI to learn the Indonesian language?
- c. What is the foreign learners' assumption if the immersions of multimodality and SV-IVR are applied simultaneously in the BIPA learning materials?

II. THEORETICAL FOUNDATIONS

A. *Multimodality*

Multimodality refers to the transition from paper-based to multimodal education that necessitates reconsidering how teaching and learning are designed, approached, and practised (Philippe et al., 2020). Multimodality media such as audio, visual, picture, video, and text have been leveraged to help students learn in the classroom. The multimodal learning experience of video making has assisted students in developing their knowledge of digital empathy. The term "multimodality" refers to communication and representation as more than just language. It emphasises various means of communication such as the visual modes of pictures, gestures, looks, posture, colour, typography, and composition (Kress & Van Leeuwen, 2020). Teachers frequently employed the pictures, gestures, looks, posture, and colour for teaching and learning activities. The educational setting has been impacted by visual literacy and communication modes (Kress & Van Leeuwen, 1996). The multimodality method in particular is viewed as useful to language learners with poor language because it allows them to engage in numerous reading and writing tasks. Because of the positive relationship between brain activity and the use of nonlinguistic representations, interactions between verbal and nonverbal communication are expected to increase understanding of content (Gerě & Jaušvec, 1999). This approach is closely integrated with critical analysis, which allows learners to become aware of the dominant structure of literacy (Rowse et al., 2008). By underpinning literacies as being conditioned in a situation where they develop (Bomer et al.,

2010), students gain an insight that literacy extends beyond learning only standard language and print-based representational modes (Mills, 2009). Language teachers use video clips or images to entertain students between lessons, but in many cases, the integration of multimodality may not be relevant to instruction or complement traditional literacies (Han & Kinzer, 2008).

B. The Indonesian Language for Foreign Speakers or Bahasa Indonesia Bagi Penutur Asing Programme

The Indonesian language has been popularised in the Unitary State of the Republic of Indonesia as the national language and the state's official language. The reach of the Indonesian language must be able to cover the entire country so that unity can occur among Indonesian citizens. Thus, Bahasa Indonesia has an important position (Murtiani et al., 2017). Bahasa Indonesia has recently acquired popularity among foreigners for a variety of reasons, including tourism, business, investment, and employment (Sudini, 2008). Moreover, Indonesia is a member of the Asian Economic Community (MEA), which means that workers from other Asian countries can apply for jobs in companies in Indonesia (Gusnawaty & Nurwati, 2019). BIPA was established to accommodate the demand for the Indonesian language used by foreign speakers. The BIPA programme is currently under the Ministry of Education, Culture, Research, and Technology, which assists teachers in expanding their ability to teach the Indonesian language to foreign speakers. One of the goals of this organisation is to establish partnerships and cooperation in the development of BIPA teaching in a more professional direction. The Language Agency has a vision of "implementing BIPA teaching that can improve Indonesia's positive image in the international world to make Indonesian language the language of broad communication at the international level" (Yaacob & Lubis, 2022).

C. Spherical Video-Based Immersive Virtual Reality

Virtual reality (VR) provides an opportunity for learners to experience remote areas during their lessons. The constructivist theory is particularly well suited as a theoretical background and foundation for this teaching and learning approach (Prisille & Ellerbrake, 2020). In recent years, the number of Spherical Video Virtual Reality (SVVR) systems or resources in the development process has expanded (Yang et al., 2021). One of the SVVR developments is SV-IVR, which can potentially meet the demands of the education field. The purpose of spherical video VR technology is to allow the viewer to continuously pan and tilt in a circle. Immersive technology improves students' learning experiences, increases collaborative involvement, and can encourage creativity and engagement; hence, it is advantageous for teachers to include immersive experiences in the education process as appropriate (Suh & Prophet, 2018). Immersive video offers viewers the freedom to explore 360 degrees and control the position and angles they need (Chien et al., 2020). In addition, SV-IVR solves the issue of VR's excessive reliance on 3D modelling. Compared to 3D model-based VR technology, SV-IVR saves a great deal of time. It is a simpler and more straightforward approach for teachers, lecturers, or experts to create VR resources that are easy to promote (Chen et al., 2021).

D. Learning Materials

Materials refer to anything which teachers or learners can apply to enable the learning of a language (Tomlinson, 2011). In other words, materials assist teachers and lecturers in elevating learners' comprehension or experience of the language. Materials should consist of novelty, including unusual topics and illustrations, variety, attractive presentation, appealing content, and achievable challenge (Tomlinson, 2011). Delivering a new idea through the materials has the potential to expand the learners' comprehension of learning a language. In line with this, the necessity of the variety of materials allows teachers and learners to conduct interaction during the teaching and learning process in the classroom. An attractive presentation assists learners in understanding how to present using the target language. This material leads learners to sharpen not only their speaking skills but also their speech ability in front of the audience. In terms of appealing content, materials could be generated using technology and a suitable teaching approach. Through technology immersion, the students' eagerness can increase during the teaching and learning activities. In terms of achievable materials, levelling the task or assignment tends to ease the learners in studying the target language. Providing students with the easiest assignment to the hardest allows them to gradually solve the problem in detail.

III. METHOD

A. Research Purposes

This research was intended to scrutinise the foreign learners' perception of the multimodality and SV-IVR immersion in the BIPA learning materials. Furthermore, the study explored the students' argument regarding the simultaneous use of multimodality and SV-IVR in the BIPA learning materials.

B. Setting and Participants

This research was conducted in June 2022, and the population of this study was the foreign students who joined the BIPA programme. The research sample included learners who attended the BIPA programme in Bali province. The sample of the BIPA programme is shown in Figure 1.

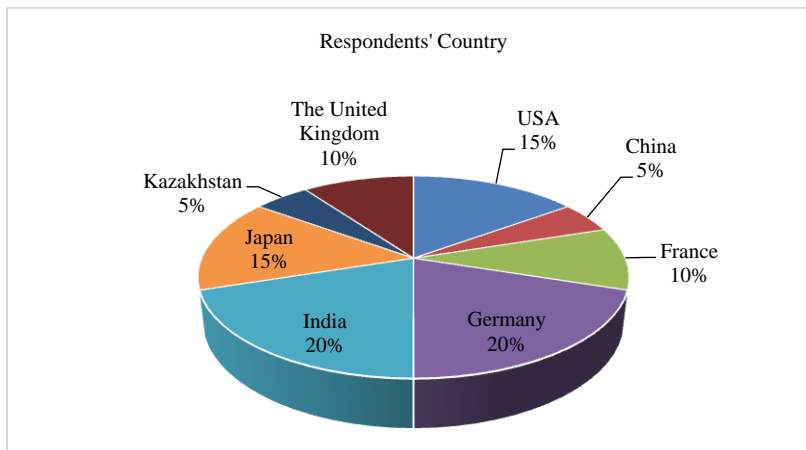


Figure 1. The Sample From the Indonesian Language for Foreign Speakers Programme

The total sample was 20 individuals from Europe, Asia, and the US. Five per cent of the respondents were from each of China and Kazakhstan compared to 20% from each of India and Germany. Ten per cent of the respondents were from each of the UK and France, and 15% were from Japan.

C. Data Collection

The participants were asked 13 questions using the Google Forms platform, which made it easy for the researchers to receive the specific data. The researchers employed a Likert scale from 1 to 5 to gauge respondents' arguments. The multimodality including words (text), sound (audio), images, and visuals (video; Jewitt & Kress, 2010) were employed. Additionally, performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating condition (FC), and BI from Unified Theory of Acceptance and Use of Technology (UTAUT) theory were entangled in this research (Venkatesh et al., 2016).

In terms of the questionnaire items, several questions were provided before the participants answered the multimodality and BI items. Table 1 outlines the questionnaire items. There were eight questions in the independent item and just one question in the dependent item.

TABLE 1
ITEMS OF THE QUESTIONNAIRE REGARDING THE STUDENTS' OPINION OF THE MULTIMODALITY IMMERSION

Multimodality (X1)	Item
Text	When learning a new language, Bahasa Indonesia for instance, vocabulary is very important part for me.
	When learning a new language, Bahasa Indonesia for instance, the generic structure is very important part for me.
	Images could assist me in learning Bahasa Indonesia.
Image	Visuals allow me to expand my comprehension in learning Bahasa Indonesia.
Audio	When listening to a new language on a video, Bahasa Indonesia for instance, voice-over helps me to learn.
	I can learn Bahasa Indonesia from Indonesian songs.
Video	Using video with Bahasa Indonesia voice-over could assist me to learn the culture and Indonesian language.
	Video immersion could assist me to learn a new language.
Behavioural Intentions	I want to learn a new language or Bahasa Indonesia using image, text, audio, video, and immersion virtual reality (360 Video degree).

TABLE 2
ITEM OF THE QUESTIONNAIRE REGARDING THE STUDENTS' OPINION OF THE SPHERICAL VIDEO-BASED IMMERSIVE VIRTUAL REALITY

UTAUT (X2)	Item
PE (Performance Expectancy)	Using E-learning, audio, video, text, image, or virtual reality (360-video) would help me in learning a new language.
EE (Effort Expectancy)	E-learning, audio, video, text, image, or virtual reality (360-video) are easy for me to use in learning a new language.
SI (Social Influence)	My friends are keen to use E-learning, audio, video, text, image, or virtual reality (360-video) in learning a new language.
FC (Facilitating Conditions)	I have media for example smartphones and internet access to run the E-learning, audio, video, text, image, or virtual reality (360-video) during the learning activities.
Behavioural Intentions	I want to learn a new language or Bahasa Indonesia using image, text, audio, video, and immersion in virtual reality (360-video degree).

D. Data Analysis

Regarding the hypotheses and problems urged in this research, the researchers conducted descriptive statistical analysis. They utilised the platform Statistical Product and Service Solutions (SPSS) to obtain the specific data and descriptive analysis, ANOVA and coefficients to analyse the effect of multimodality and SV-IVR on the students' BI to use learning materials. The statistical analysis was also employed to determine the foreign learners' argument about the

multimodal and SV-IVR immersion on learners' BI to use learning media in the BIPA programme.

IV. FINDINGS

A. Result of Research Question 1

To examine the students' assumptions about the use of multimodality immersion, the researchers employed descriptive and regression methods. As shown in Table 3, the respondents agreed on the utilisation of multimodal absorption in the teaching and learning materials. The rate of learners who agreed on the multimodal immersion was 75% compared to the 20% of respondents who opined the disadvantages of multimodality. Subsequently, the percentage of students who totally agreed on the multimodal utilisation was 5%. Based on the descriptive analysis results, students were keen to apply multiple modes including text, image, audio, and video in the learning materials.

TABLE 3
MULTIMODALITY DESCRIPTIVE ANALYSIS INCLUDING THE USE OF TEXT, IMAGES, AUDIO, AND VIDEO

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	3.00	4	20.0	20.0	20.0
	4.00	15	75.0	75.0	95.0
	5.00	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

To further investigate the result of the learners' argument on the multimodality, including text, image, audio, and video towards the BI to use learning materials, the experimental results are shown in Table 4, and according to the results, the multimodality scores are $F = 19.578$, $p < 0.05$ and the mean square is 4.064, which indicates a significant effect of the use of multiple modes on the BI to utilise Indonesian language learning materials.

TABLE 4
ANOVA RESULT ABOUT THE LEARNERS' OPINION ON THE USE OF MULTIMODALITY TOWARDS THE BEHAVIOURAL INTENTION TO USE LEARNING MATERIALS

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.064	1	4.064	19.578	.000 ^b
	Residual	3.736	18	.208		
	Total	7.800	19			

a. Dependent Variable: Y

b. Predictors: (Constant), X1

B. Result of Research Question 2

Table 5 shows the descriptive analysis of the SV-IVR utilisation in the teaching and learning process in the BIPA programme. Eighty per cent of the respondents believe that the SV-IVR meets the PE, EE, SI, and FCs. The result of students' opinion of the SV-IVR use also reveals that the respondents totally agreed with the benefit of SV-IVR use, which accounts for 15% compared to the 5% of foreign learners who argued that SV-IVR provides less significance for teaching and learning process in BIPA programme.

TABLE 5
SPHERICAL VIDEO-BASED IMMERSIVE VIRTUAL REALITY DESCRIPTIVE ANALYSIS INCLUDING THE OPINION OF PERFORMANCE EXPECTANCY, EFFORT EXPECTANCY, SOCIAL INFLUENCE, AND FACILITATING CONDITION

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	3.00	1	5.0	5.0	5.0
	4.00	16	80.0	80.0	85.0
	5.00	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

The data in Table 6 explains the analysis of SV-IVR about foreign learners' BI to apply the learning materials. The SV-IVR scores ($F = 0.397$, $p > 0.05$) and the mean square (0.168) denote an insignificant result of the SV-IVR use of foreign learners' BI to utilise the learning materials.

TABLE 6
ANOVA RESULT OF THE LEARNERS' OPINION ON THE USE OF SPHERICAL VIDEO-BASED IMMERSIVE VIRTUAL REALITY TOWARDS BEHAVIOURAL INTENTION TO USE LEARNING MATERIALS

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.168	1	.168	.397	.536 ^b
	Residual	7.632	18	.424		
	Total	7.800	19			

a. Dependent Variable: Y

b. Predictors: (Constant), X2

C. Result of Research Question 3

Regarding the result of the effect of multimodal and SV-IVR on the learners' BI to utilise the learning materials, The

F score of the multimodality and SV-IVR is 9.503, $p < 0.05$). Furthermore, the mean square score is 2.059, which means the multimodality and SV-IVR immersion simultaneously made a significant contribution to the learners' BIs to employ the learning materials in the BIPA teaching and learning activities.

TABLE 7
ANOVA RESULT CONCERNING THE LEARNERS' OPINION ON THE USE OF MULTIMODALITY AND SPHERICAL VIDEO-BASED IMMERSIVE VIRTUAL REALITY TOWARDS BEHAVIOURAL INTENTION TO USE THE LEARNING MATERIALS

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.117	2	2.059	9.503	.002 ^b
	Residual	3.683	17	.217		
	Total	7.800	19			

a. Dependent Variable: Y
b. Predictors: (Constant), X2, X1

V. DISCUSSION

Because multimodality and SV-IVR utilisation contribute to the learners' learning language comprehension, this study aims to gauge the foreign learners' perception of multimodality and SV-IVR immersion on the desire to employ the BIPA learning materials. Generally, the use of multimodality (text, audio, video, and image) contributes to the foreign learners' motivation and eagerness to learn the Indonesian language. Although the combination of text, audio, video, and images helps foreign learners to study the Indonesian language, the SV-IVR implementation revealed no effect on the foreign students' motivation and attitude. In terms of the combination of multimodality and SV-IVR, the students argued that the immersion of multimodality and SV-IVR could simultaneously escalate their motivation to learn the Indonesian language.

A. Foreign Learners' Perception of Multimodality Immersion in the Indonesian Language for Foreign Speakers on the Behavioural Intention to Use Learning Materials

A multimodal lens can illuminate a language's specific evidences and constraints (Grapin, 2019). The data indicate that foreign learners favour combination of text, audio, video, and images to learn the Indonesian language. Using audio-visuals when delivering material is necessary when participating in the BIPA class. For instance, the combination of pictures, video, audio, and games assists students in enhancing their BIs to learn the Indonesian language as a foreign language. According to the data in the multimodality use, vocabulary and generic structure allow learners to expand their writing skills. Linguistics is identified as a part of multimodality that improves foreign learners' skill in using a foreign language. Employing diverse multimodal resources (linguistic, visual, and gestural) fosters learners' appropriation of knowledge, strategies, and attitudes (Valero-Porras & Cassany, 2015). Students believe that the role of the image during the teaching and learning process assists them in learning the Indonesian language. Similarly, by obtaining Indonesian language vocabulary, foreign learners have the potential to not only support their writing skills but also improve their speaking ability. In terms of audio use in the classroom, utilising Indonesian songs related to education can be fruitful. In general, the learners appreciated the role that video technology played in feedback generation and delivery, emphasising that feedback in video mode not only promotes greater interaction but also more individualised learning and attentive engagement. The current study uncovered a variety of cognitive and social strategies that learners used to ensure the fluency and accuracy of their oral feedback to achieve cognitive goals by efficiently producing feedback, observing positively reinforced behaviours from peers, and collaborating with others to generate ideas for future improvement (Hung, 2016). It is important to emphasise that the study's results were achieved when learners were exposed to videos, which appeared to be more appealing because the findings show that students followed instructions accurately, possibly due to clearer instructions given through the audio-visual materials. This indicates that providing clear instructions increases students' motivation to participate in the teaching and learning process (Salazar & Larenas, 2018). Their speech contributions increased with each contact with the multimodal text (Kaminski, 2019).

B. Foreign Learners' Perception of Spherical Video-Based Immersive Virtual Reality Immersion in the Indonesian Language for Foreign Speakers on the Behavioural Intention to Use Learning Materials

According to the results, the implementation of SV-IVR had lack of impact on the foreign learners' BI to learn the Indonesian language. VR applications provide significant opportunities for both engaging students in the foreign language learning process and successfully achieving the discipline's three primary objectives of enhancing foreign language learning, preparing undergraduates for real life and expert circumstances outside of the native language environment, and enhancing student communication abilities (Symonenko et al., 2020). However, the analysis reveals that VR could not influence foreign students' BI to learn. This study underpins Chang in 2020 about the less significant contribution of SV-IVR use alone. The SV-IVR immersion had no major effect on learning achievement and learning motivation (Chang et al., 2020). The lack of a suitable approach to applying the SV-IVR and the deficiency of time to introduce the SV-IVR utilisation are factors that could affect learners' eagerness to learn the Indonesian language. Additionally, the learners must be familiarised with the use of SV-IVR for it to elevate their academic comprehension.

Furthermore, writing skills tend to be difficult to study using SV-IVR (Van Waes et al., 2014). The demand to provide extra time to introduce the SV-IVR would potentially increase English language skills. Providing a short period of SV-IVR implementation to run the classroom would be a barrier to escalating foreign learners' eagerness to learn. The SV-IVR used in the classroom requires additional time to allow learners to adopt the technology. Furthermore, it would be beneficial to investigate the impacts of learning strategy and engagement level on students' other talents in other tasks. Finally, for the sake of educational sustainability, more impressive innovations in language teaching and learning should be investigated (Huang et al., 2021).

BIPA classroom management remains a key aspect of integrating technology into regular teaching. The use of VR in education involves not just technology and curriculum but also health and psychology (Castaneda et al., 2016). Several issues must be addressed in terms of technology and curriculum to handle health and psychology, such as students being concerned about the use of modern technology, being too eager to focus on studying, or feeling dizzy when viewing SV-IVR content. One key issue is the lack of physical equipment for use with SV-IVR, which means that teachers must utilise their knowledge and expertise of applying SV-IVR when structuring learning activities. When intending to include SV-IVR in their education, they must answer the 5W-H questions (who, what, when, where, why, and how). Teachers must also evaluate whether they will serve as learning agents, facilitators, or supervisors in SV-IVR language learning. This is followed by the question of how to measure learning results when SV-IVR is incorporated into the BIPA programme given that standard pencil-and-paper examinations are insufficient. How to incorporate tests into the virtual experience (Lan et al., 2018) and provide FL learners with appropriate feedback (including text-based and verbal feedback) are also major challenges.

C. Foreign Learners' Opinion if Multimodality and Spherical Video-Based Immersive Virtual Reality Are Applied Simultaneously in the Indonesian Language for Foreign Speakers' Learning Materials

In terms of the multimodal and SV-IVR combination as the learning material in the Indonesian language, foreign learners argue that the immersion of text, image, audio, video, and 360-video provide an opportunity to enhance students' urge to study the Indonesian language. Based on the analysis, these combinations contribute to the learners' desire and motivation to learn the Indonesian language. The use of text, image, audio, conventional video, and SV-IVR is probably able to empower foreign learners' Indonesian language cognition. VR enables activity-based multimodal learning and instruction (Dickey, 2003). Integrating text into SV-IVR allows learners to grasp the instruction more clearly. Providing text also leads learners to create Indonesian language familiarization. The SV-IVR without text has potential to confuse the users; thus, it would be difficult to reach the goal of learning the Indonesian language. Similarly, the use of audio allows learners to obtain a new vocabulary and way of pronouncing the Indonesian language and familiarise themselves with the Indonesian words. The importance of text and audio use is in line with the demand for utilising the image on the SV-IVR. Including pictures in the learning tools contributes to the users' keenness in receiving the knowledge (Choi et al., 2020). The incorporation of multimedia learning into various modes of learning appears to enable learners to adopt a more adaptable approach focused on enquiry and data retrieval (Hazari et al., 2009; Mayer, 2005). The use of multimodality and SV-IVR expand the teaching and learning tools as an approach in the education field. However, deep interaction is still necessary when tutors deliver the lesson in the classroom.

VI. CONCLUSION

The research proves that foreign learners are keen to use multimodality or the combination of SV-IVR and multimodality compared to the partial utilisation of SV-IVR. Foreign learners favour multimodality because it assists students in elevating their Indonesian language ability. SV-IVR is a great learning tool; however, it must be suitable for the BIPA programme. The technology immersion of multimodality and SV-IVR for Indonesian language learning materials has the potential to increase foreign students' eagerness to learn. The use of text, audio, images, and SV-IVR combined provides an opportunity to expand learners' language skills, especially in Indonesian. The elements of multimodality such as text lead the foreign learners to read the explanation. Providing text in the SV-IVR is beneficial for increasing foreign learners' understanding of the lesson. Similarly, pictures are advantageous for enriching foreign learners' comprehension. Adding images to the SV-IVR potentially assists students in starting to learn the Indonesian language in the BIPA programme. Exploring multimodality is a call for experts and researchers to generate more interactive learning tools in the BIPA programme.

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