The Students' Perspectives on Implementing the Mobile-based Video Calls Using AgoraIO in Face-to-face Distance Learning Activities

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Currently, the chat application development also has video chat and voice call facilities, but it is still general and not made specifically to facilitate education. This is considered less practical and dynamic in education, also, requiring different facilities from applications or conferences. Thus, in this study, the author wants to determine various students' perceptions of mobile-based applications in the learning process. This study aims to know the students' perspectives in using video calls for face-to-face distance learning activities based on mobile devices using AgoraIO. This study used probability sampling with the Simple Random Sampling technique. The Slovin technique was used to determine the sample size in the study. The population of the study was 31 students of the Diploma 3 Information System. The indicator raised in this study is a mobile device-based Video Call, which is useful for generating motivation and interest in learning. The descriptive analysis of the utilisation of mobile-based video calls using AgoraIO was obtained by 90.87%. This means that mobile device-based video calls in AgoraIO for the students of the Information System Diploma were highly expected. The score is 97%, which means that the use of information technology-based learning media for students is expected to generate motivation and interest in learning. Another indicator of this research is that information technology-based learning media is useful for increasing understanding of lessons. A score of 87% is obtained, which means that using information technology-based learning media for students is expected to improve lessons' performance.

Key words: *Students' Perspectives, Mobile Device-based Video Calls, AgoraIO.*

Introduction

The development of Information Technology (IT) is used almost in all aspects of human life. One issue cannot be separated from the use of information technology in education. Information technology is used as part of learning media to facilitate the learning subject matter to make it more interesting, attractive, and communicative. The utilisation of information technology (IT) in learning media consists of computers, laptops, in-focus, and other devices that are supported by software for making presentations, displaying moving images (video) and sound (audio) as assistive tools for teachers in delivering the learning materials.

Many educational institutions on campus have started implementing particular video conferencing (vi-con) or video calls (vi-call) as common areas for the learning activities. Students and lecturers can hold conferences for each class or large-scale conferences involving many parties and participants. Colleges have even been able to bring together groups from different universities and allow them to attend the same meeting at the same time. Therefore, the utilisation of vi-con or vi-call technology is ideal for today's modern educational institutions.

In general, the current chat application development has video chat and voice call facilities, but it is not explicitly made to facilitate education. This is considered less practical and dynamic in education. It requires different facilities from applications such as video call conferences with many people to interact digitally in real-time in sound or video. Thus, the author wants to determine various users' perceptions regarding the mobile-based application in the learning process. By implementing the web and mobile-based applications, students, and lecturers who want to do video chat will no longer encounter problems. They do not need to do the installation process, which will take time and think about the computer's memory capacity.

The application design and implementation of the network or channel network from AgoraIO do not need to be done from scratch. AgoraIO is a premium service that can be used as a Real-Time System (RTS) network platform, making it suitable for developing Video Call applications. It offers an application programming interface (API) and a software development kit (SDK). AgoraIO allows developers to plug in high-quality real-time communications for any application that gives real-time guarantees. They enable companies and internet users worldwide to make, share screens, exchange files, use data channels, and involve audiences with real-time audio, video, and live interactive streaming. Also, AgoraIO comprises full help over a scope of tech stacks. It makes it simple to convey profound joining of top-notch, outrageous low-idleness video calling over all stages and channel decisions, for example, macOS, Android, Desktop, Web, and Linux. So, it incorporates full help over a scope of tech stacks, making it simple to convey profound joining of excellent, low-inertness calling over all stages and channels

This research aims to know the students' perspectives in using AgoraIO video calls for face-to-face distance learning activities based on mobile devices. This study's results are used as an alternative learning media, which is expected to improve digital teaching quality and learn in higher education. With this mobile-based application, users can use it anywhere, thereby increasing the flexibility of application usability. Also, this application's use, a communication medium that functions well and is beneficial to the world of education, can be created to improve interactive teaching and to learn among the academic community.

Literature Review

Current technology has given many new features in learning media in the world of education. Technically, learning media can act as a learning resource that implies the meaning of activeness. Learning media as a learning resource is its primary function and other functions. In the educating and learning cycle, the instructional media can create new cravings and premiums, produce inspiration and incitement of learning exercises, and in any event, bring mental impacts (Na'imah, Supartono, and Wardani, 2015). In addition to arousing student motivation and interest, learning media can also help students improve understanding, present data attractively and reliably, facilitate data interpretation, and condense information.

Several previous studies have proven the learning media technology of using audio-visual media. Many software is classified as edutainment, a combination of education and entertainment. Heidi, Tan, and Neo (2015) stated that multimedia-based teaching systems or mobile devices (technology that involves text, images, sound, and video) can present a more attractive, less monotonous, and easier to deliver. Students can study certain materials independently using a computer or laptop equipped with a multimedia-based program. The learning media using multimedia-based Photoshop made learning more accessible and effective than conventional learning (Diartono, 2008). Also, using audio-visual media as an alternative to optimising the learning model that poured out through internet technology is an interactive learning medium for students. (Haryoko (2009) and Yazdi (2012)). In facilitating the media for supervision activity between lecturers and students, it was necessary to utilise the internet optimally while the supervision was lasting. . Kadja, et al (2019) said that the use of Skype and Google Docs combined to Video Conference could increase research productivity and accelerate publishing scientific articles' quality and quantity.

The new era of the development of learning media technology, which is very powerful, must be utilised by educators to make it easier to carry out learning in any condition, anytime and anywhere. For example, Rodrigues, et al (214) stated that the distance interactive learning with video conferencing presented by the instructor via a computer (software or other videos) could help the students spend more time watching and interacting with the interactive multi-video. Then, Widiantoro and Rakhmawati (2015) explained that schoology-based e-learning learning media is used as a learning medium and received a positive response from students on essential

competencies to understand the atomic model of semiconductor materials. While Watoni, et.al. (2017) concluded that the Edmodo's effectiveness as a media to support the teaching-learning process is adequate to support the teaching-learning process. Related to mobile applications' utilisation, Assisted Language Learning (ALL) could serve independent learning, and it was very helpful in improving students' skills (Yuliawati, 2018). Simultaneously, learning media technology is optimal for teaching the students in times of the Covid-19 pandemic. The social media platform's common use is suitable for use during this pandemic, including WhatsApp Group, Google Class, Google Docs, Google Application, Zoom, and others. It was more effective in learning using WhatsApp Group for elementary school. On the other hand, for higher education, it was explained that using Zoom Application for conducting the learning could give a more significant performance for the audience (Astini, 2020).

Therefore, through a Video Call connected to the internet, lecturers and students can interact even though they are far apart and not in one place (Gazali, 2019). The advantages of using video calls, among others, make the learning process not limited by space, in the sense that we can carry out the teaching and learning process anywhere as long as there is an internet connection. The learning process can also be more exciting and more relaxed because there is no need to meet face to face with the presentation participants. The most important thing is that we can know more about this technology as a learning tool and provide new learning experiences.

Methodology

This study used probability sampling with the Simple Random Sampling technique. The Slovin technique was used to determine the sample size in the study. This study's population was 31 students of the Information System Diploma. The data analysis technique in this study used descriptive statistics. The descriptive statistics used to analyse data by describing the collected data without making generalised conclusions or generalisations. Descriptive statistics included the presentation of data in the form of tables, graphs, pie charts, pictograms, mode calculations, medians, means, decile calculations, percentiles, calculation of data distribution through calculating means, standard deviation, and calculation of presentation (Sugiyono, 2013). The authors measured the operational research variables to get the students' perspectives related to the implementation of mobile-based video calls using AgoraIO in face-to-face distance learning activities. The primary variable used in this study was the utilisation of mobile-based Video Calls using AgoraIO. In this study, a hypothesis was not formulated, so that data analysis was used to answer the problem formulation quantitatively. The investigation was done by doing calculations so that this study identified the problem's formulation quantitatively.

There were three indicators followed by four statements that should be answered by the students as entirely written in table 1 below.

Table 1. Operational Research Variables

Variable	Indicators	Statements
Utilisation of mobile-based Video Calls using AgoraIO	Generating new desire and interest in learning	1. With the mobile device using AgoraIO, you have an interest in learning new things in learning.
	Generating motivation and interest in learning	2. You are motivated to learn when in class using mobile devices using AgoraIO.
		3. You are interested in learning the lessons delivered using a mobile device using AgoraIO.
	Increasing the understanding of learning	4. Learning activities with mobile devices using AgoraIO make you better understand the material presented.

Results and Discussion

Results

The following are the results of the calculation of descriptive analysis of the variable use of mobile-based video calls using AgoraIO.

The use of mobile-based video calls using AgoraIO with indicators to generate new desires and interests in learning.

Table 2. Results of Descriptive Analysis of Indicators Generating New Desire and Interest in Learning

No	Statement	VA	A	N	D	VD	Total Score	Statement Scores	
		5	4	3	2	1		Total	%
1	With the mobile device using AgoraIO, you have an interest in learning new things in learning	15	9	6	1	0	31	160	100%
	Total	15	9	6	1	0	31	160	
	Percentage	48.39%	29.03%	19.35%	3.23%	-	100%	162	100%
	Variable mean							162	97%

Table 2 showed the descriptive analysis results with the first indicator in generating the new desire and interest in learning; a 97% score of value was obtained. Most of the students had the perspective that by using AgoraIO, they had a high interest in learning new things in the learning process.

The use of mobile-based video calls using AgoraIO with indicators to generate motivation and interest in learning.

Table 3. Results of Descriptive Analysis of Indicators Generating Motivation and Learning Interest

No	Statements	VA	A	N	D	VD	Total Score	Statement Scores	
		5	4	3	2	1		Total	%
2	You are motivated to learn when classroom learning uses mobile devices using AgoraIO	13	9	6	2	1	31	154	50%
3	You are interested in learning the lessons delivered using a mobile device using AgoraIO.	12	8	7	3	1	31	150	50%
	Total	25	17	13	5	2	62	304	
	Percentage	40.32%	27.41%	21.00%	8.06%	3.22%	100%	162	100%
	Variable mean							152	89%

Table 3 showed the second indicator raised in this study related to the use of a mobile device-based Video Call. The score was 89%, which means that the use of information technology-based learning media for the students was useful and motivation and interest in learning could be generated.

Utilisation of mobile-based video calls using AgoraIO with indicators to increase understanding of learning

Table 4. Results of Descriptive Analysis of Indicators to Improve Understanding of Learning

No	Statement	VA	A	N	D	VD	Total Score	Statement Scores	
		5	4	3	2	1		Total	%
4	Learning activities with mobile devices using AgoraIO make you better understand the material presented	13	8	6	2	2	31	146	100%
	Total	13	8	6	2	2	31	146	
	Percentage	41.94%	25.81%	19.35%	6.45%	6.45%	100%	146	100%
	Variable mean							146	87%

Table 4 showed the third indicator raised in this study related to using the information technology-based learning media to enhance students' understanding of lessons. A score of 87% is obtained, which means that using information technology-based learning media for students was expected to improve lessons' performance.

Descriptive analysis of the use of mobile-based video calls using AgoraIO

Table 5. Results of Descriptive Analysis of the Utilisation of Mobile-based Video Calls using AgoraIO

No	Statements	VA	A	N	D	VD	Total Score	Statement Scores	
		5	**4**	**3**	**2**	**1**		**Total**	**%**
1	With the mobile device using AgoraIO, you have an interest in learning new things	15	9	6	1	0	31	160	100%
2	You are motivated to learn when classroom learning uses mobile devices using AgoraIO	13	9	6	2	1	31	154	50%
3	You are interested in learning the lessons delivered using a mobile device using AgoraIO.	12	8	7	3	1	31	150	50%
4	Learning activities with mobile devices using OgarIO make you better understand the material presented.	13	8	6	2	2	31	181	100%
	Total	53	34	25	8	4	124	645	
	Percentage	42.74%	27.42%	20.16%	6.45%	3.23%	100%	161.3	100%
	Variable mean							161.3	90.87%

Discussion

Based on the three tables above, the results of the descriptive analysis of the utilisation of mobile-based video calls using AgoraIO obtained 90.87%. This means that the use of mobile device-based video calls in AgoraIO for the students was highly expected. The instructional media could generate new desires and interests, generate motivation and stimulation of learning activities, and even bring psychological influences on students' teaching and learning process. Also, it helped students improve their understanding.

The use of mobile-based video calls using AgoraIO with the first indicator to generate new desires and interests in learning obtained 97% value. This means that the use of information technology-based learning media for the students has a value of 97% of what is expected to generate new desire and interest in learning. In connection with this indicator, it is supported by one of the learning media functions, namely the imaginative function. Learning media could increase and develop students' imagination. The second indicator raised in this study is a mobile device-based Video Call, which is useful for generating motivation and interest in learning. The score is 89%, which means that the use of information technology-based learning media for the students has 89% of what is expected to generate motivation and interest in learning. The third indicator of this research is that information technology-based learning media is useful for

increasing understanding of lessons. A score of 87% is obtained, which means that the use of information technology-based learning media for the students is expected to improve understanding of lessons.

From the instruments provided, it could be seen that the learning resources are essential components of an instructional system that includes messages, people, materials, tools, techniques, and the environment that could affect student learning outcomes. Thus, learning resources could be understood as outside sources and facilitate the teaching and learning process. Also, the students had the desire and interest in learning to increase and develop students' imagination. Furthermore, motivation is an art that encourages students to be motivated to carry out learning activities to achieve learning objectives. Thus motivation is an effort from the outside; it is the lecturer to encourage, activate, and move students to be actively involved in the learning process. Lecturers could motivate their students by arousing interest in learning and by giving and raising expectations. The expectation that the desires and goals would be achieved could motivate the lecturer to generate this in students. One way of giving hope is by making it easier for students, even those who are considered weak in understanding and receiving the lesson's content, namely the use of appropriate learning media. The students also understood the lessons delivered with hardware in the classroom better than learning activities using the software.

Conclusion

This study aimed to determine various students' perceptions regarding the utilisation of video calls for face-to-face distance learning activities based on mobile devices using AgoraIO. The use of mobile device-based learning media using AgoraIO for the students was highly expected and could generate new desire and interest in learning. In connection with this indicator in increasing understanding of lessons, AgoraIO could also develop students' imagination and improve the lessons' performance. There are some suggestions for mobile device-based Video Calls using AgoraIO in face-to-face distance learning activities: (1) implementing the applications to non IT study programs' students and the external or the general public, (2) there needs to be another user who could manage the entire application, such as adding or changing the displayed material or questions, and (3) adding material and questions to be more varied for use by the main users and the public.

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