

## HOW VIRTUAL LEARNING TOOL AFFECT STUDENTS' LEARNING ACHIEVEMENT

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### ABSTRACT

*The pandemic that strikes around the world in 2020 has forced educational institutions to conduct teaching learning activities virtually through internet connection. In our university, virtual learning by video conference (henceforth VC using Zoom) has been chosen to replace face-to-face classroom meetings. However, due to limited connectivity and other sources, only half of the sessions were provided with video conference using Zoom application in which the teacher can present the materials synchronously to the students. While for the rest of the learning sessions, students were assigned to do self-study. For all sessions, with or without the video conference, students were provided with the learning materials in the forms of Power point slides, learning videos and e-textbook. This study aimed to find out to what extent video conference session affect the students' achievement in comparison to their achievement by self-study. Moreover, the other objective is to discover students' opinions regarding the video conference sessions. This study took 40 students of English Department, Binus University as participants. They were taking the subject of Projects in Language, Literature and Culture which basically contains research ideas or projects in those three areas. The data were taken from the six class sessions (3 VC sessions, 3 self-study sessions) and the students' assignment scores for all six sessions. A survey through an online channel was also done to obtain students' opinions regarding the VC sessions in virtual learning. Results show that video conference sessions generate a slightly higher scores compared to those without VC sessions. Moreover, students also showed positive attitude toward the VC sessions for the course. This study implied that students still need to interact and listen to their teacher's explanation even though it is done virtually. Even though synchronous virtual learning cannot fully replace face to face meetings, it can at least supplement the need for teacher-student interaction. Thus, teachers need to keep improving their teaching technology skill to achieve students' learning goals.*

**Keywords:** *Interaction, self-study, teaching technology, video conference, virtual learning*

### INTRODUCTION

On March 11, 2020, the World Health Organization announced that the novel coronavirus (popularly known as Covid-19) outbreak had become a worldwide pandemic. This was because the cases outside China rose 13 times and the number of countries with infected cases increased three times in just over two weeks (Cucinotta and Vanelli, 2020). Until now, Covid-19 pandemic has not been resolved, and all over the world are still being affected.

The outbreak of Covid-19 has forced the educational institutions to change the learning system from offline to online. Since June 2020, almost all schools and universities have applied the policy of remote teaching and online learning (Purwanto et al. 2020) In effect, teachers and students are undesirably asked to change their teaching learning system from the offline session in the classroom into a virtual/digital teaching system through various online applications.

Conducting a full online learning is not an easy matter either for the teachers or for the students. One of the most frequently stated objections for online learning is lack of interaction. Crawley, Fewel & Sugar (2009) stated during online learning many instructors struggle with the delivery of the content and engagement of their students. On the other hand, students also have difficulties in interacting with their fellow classmates, with their teachers, and also with the technology used in e-learning (Anderson, Imdieke, and Standerford, 2011).

Some universities, including our university, however, have applied a blended learning practice long before the pandemic outbreak. A blended learning system is a combination of face to face learning sessions with online learning sessions which are conducted through a certain learning management system or teaching technology. In our university, we adopt 70% face-to-face meetings and 30% self-learning. On face to face meetings, students should come to the campus and study with the teachers; meanwhile, on GSLC (guided self learning class), students can stay at home and study the materials by themselves through the internet. The arrangement of all teaching learning activities were incorporated in a virtual learning environment called Binusmaya.

Like other learning management systems, Binusmaya contains several features such as course materials, discussion forums, absence, file sharing, exam, video learning, and many others. Yet, due to the obligatory online learning, video conference feature should be added. The addition of video conference

feature is meant to substitute the face-to face meeting in the previous learning system. Synchronous video conference meetings enable teachers to teach or present the materials in real time. With an internet connection, a virtual real-time video presentation is synchronously delivered from the teachers' desktop or laptop computers to the audience (students) anywhere (Flatley 2007).

Thus, the learning system was slightly adapted, with 70 % video conference meetings and 30 % self-learning (GSLC). GSLC sessions are intended to promote learners' autonomy by letting them study on their own without the teachers' instructions. They are supposed to study the materials given (textbook, powerpoint slides, learning video, or find other sources) and do the assignment given. The only difference is the lack of teacher's presentation.

However, in my observation, students admit having difficulties doing the assignments without the teacher's guidance. Therefore, in this study, I will address two research questions. First, to what extent video conference sessions affect the students' assignment scores. Second, how do the students perceive the online learning materials (VC, PPT, and videos). To answer those questions, I will do a statistical analysis of the students' scores of VC and non-VC sessions. Moreover, a questionnaire regarding the online learning materials will be given and analyzed.

Several studies regarding the use of digital platforms in e-learning have been carried out. Amin and Sundari (2020) did a survey to 140 students in Jakarta and Aceh regarding three online learning tools: Cisco Webex, Google Classroom and Whatsapp. They found that Webex has the highest score in authenticity and meaning focus, while Whatsapp was the most preferred app by the students. Another study by Permatasari (2018) who surveyed 56 students claimed that video conference enhances teachers' productivity and students' learning experiences. Similarly, Wichadee (2013) found that the use of technology, especially video conference and learning management system was a new learning experience. More collaborative and enjoyable learning experience can be attained by combining social media, web, and e-learning technology (Gunawan et al. 2018). The video conferencing technology used in our university is Zoom. In its website, Zoom is defined as a collaborative, cloud-based video conferencing service offering features including online meetings, group messaging services, and secure recording of sessions (Zoom Inc., 2016).

## RESEARCH METHOD

The participants of this study were 40 students of English Department, Binus University. They were taking the course subject *Projects in Language, Literature, and Culture*. This course consists of basic/introductory theories within the fields of linguistics, literature, and culture. Therefore, some topics such as Phonetics, Word Formation, Poetry, Drama, Cultural Differences were given. As has been mentioned before, 70% of the topics were presented with video conference, while the rest should be learned by the students in GSLC sections. For this study, three topics with VC (culture, semantics, phonetics) and three topics without VC (drama, pragmatics, word-formation) were chosen.

The data taken for this study were assignment scores of the chosen six topics. After studying each topic, students were given quizzes/ assignments relating to the materials given in particular sessions. The scores were then statistically calculated using SPSS ver. 24 to find out if any significance difference exists between the VC and non-VC sessions. Moreover, a questionnaire regarding the course materials was distributed to the students. The results of the questionnaire were descriptively analyzed to discover students' perception.

## RESULTS AND DISCUSSION

The first research question asked whether video conference sessions affect the achievement of students' scores. The answer to this question will be shown in three tables below.

Table 1. Assignment Scores

	N	Descriptive Statistics			
		Minimum	Maximum	Mean	Std. Deviation
culture	40	10	100	92.38	16.211
semantic	40	38.00	100.00	76.7500	15.64797
phonetics	40	50.00	100.00	81.5000	14.93748
drama	40	80.00	100.00	92.1250	5.97940
pragmatic	40	36.00	100.00	71.0500	14.88408
wordform	40	40.00	100.00	79.2000	14.59048
Valid N (listwise)	40				

Table 1 shows that students got the highest score (92.38) for the topic of culture, which was included in the VC session. For this topic, students were assigned to write a three-page essay about cultural differences they can find in a Korean drama. Meanwhile, the highest score for non-VC session was achieved for the topic of drama. Similarly, for this topic, students were assigned to write an essay about the elements of a TV drama. In contrast, the lowest score for VC session was obtained for semantics, while for non-VC sessions, it was taken for pragmatics. The similarity of these two topics were both related to the linguistics field, and the assignments given were in the form of exercises.

Table 2. Mean comparison of VC and non-VC sessions

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	VC	83.5417	120	16.81181	1.53470
	nonVC	80.7917	120	15.16625	1.38448

In general, table 2 shows that the mean of VC sessions was slightly higher than non-VC sessions. The results indicated that students can understand more of the materials when they are presented / explained by the teachers through video conference and consequently can do the assignments better.

Table 3. Test of significance of VC and non-VC sessions

		Paired Samples Test					t	df	Sig. (2-tailed)
		Paired Differences							
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference						
			Lower	Upper					
Pair 1 VC - nonVC	2.7500	14.60646	1.33338	.10977	5.39023	2.062	119	.041	

An analysis to compare the VC sessions and non-VC sessions showed the two-tailed significance level of 0.041 (thus, the one-tailed significance is 0.0205), which is lower than the  $\alpha = 0.05$ . The significance value obtained in this test signified that the scores in VC sessions differ significantly from the scores in non-VC sessions. That can also mean that lessons presented synchronously by the teacher through video conference gave a positive effect towards the students' scores in general.

The results above indicated that live synchronous meetings using video conference technology were beneficial both for the students and the teacher. Lowenthal and Mulder (2017) claimed that online meetings using video conference can help to quickly clarify the problems, help decrease isolation, and improve social presence or community. Similarly, in this virtual classroom, the teacher can clarify some difficult materials, give direct feedback to students' questions or problems, and engage students in live discussion. Although there are some challenges in using zoom such as lack of technological skill and internet connection, in general the benefit of zoom outweighed the challenge (Archibald et al. 2019); (Lederman 2020).

The second research question asked the students' opinions regarding the video conference, learning videos and the course materials. Most students thought that video conference sessions were the only possible alternative in an online learning environment, even though they said "it feels different from how we study directly/offline" (Ag). Students also mentioned that the teacher's presentation is understandable and interesting. Vicon sessions were interactive too because the teacher used other

applications such as Mentimeter, Kahoot, and videos. However, students also stated their concerns regarding the vicon sessions, namely the unstable internet connection and inattentive students “who did not pay attention to the presentation because they’re offcam.” (Ar).

As for the course materials which were given in the form of PowerPoint slides, most students said that they are helpful in understanding the topic, especially since the teacher posted extra materials in google classroom after each lesson. The materials are also easy to understand and quite entertaining. “The materials you gave to us in GClass are really help me for doing my assignments” (Kn). Here, students also found the materials to be related to assignments given. However, one student wished that the materials be more detailed.

Besides the course materials, one or two learning videos were given to the students for each topic. Most students really appreciated that the teacher made videos containing the materials given in class. They said that the videos were helpful for understanding the materials better or for reviewing the materials, especially for difficult topics like linguistics topics. The only problem for the videos was sometimes the teacher’s voice was not clear enough. Another student complained that sometimes the videos given were not matched with the assignments, so that he should find other internet sources to do the assignment.

PowerPoint slides and learning videos can be categorised as asynchronous e-learning materials. They can be given as supplementary to video conference sessions. These two types of materials have their own benefits. They can be accessed before the VC sessions as learning preparation or after the VC session for review and relearning. These benefits are in line with Lowenthal et al.’s (2020) who mentioned the benefits of asynchronous videos for emphasizing students’ reflection, establishing and maintaining emotional connection, providing feedback and assignments.

## CONCLUSION AND SUGGESTIONS

This study found that the scores that the students obtained were due to three things, namely the topic that interests them, the type of assignment and the learning mode. Some students found that linguistic topics were more difficult than culture or literature topics, thus they gained lower scores. Secondly, the type of assignment such as writing an essay will generally generate higher scores as the teacher’s assessment was typically more subjective rather than doing a filling in exercise which was more objective in nature. Lastly, lessons presented through video conference will also produce higher scores since students have the opportunity to listen to the teacher’s explanation. Teacher’s instruction is still deemed necessary to aid students’ understanding of the lesson.

Although video conference sessions cannot replace fully face-to-face classroom meetings, students gave positive opinions to this kind of online learning since it is the only possible way of conducting the teaching learning activity in the current situation. Similarly, other learning materials in the form of videos and powerpoint slides were positively appreciated by the students.

As we cannot be sure when the face to face learning activities can be resumed, video conference meetings will continue to be the best alternative in doing the e-learning. Thus, as teachers we should always be adaptable by learning new teaching technologies. Yet, the most important thing is to seek a more creative way to engage with the students so that they can achieve their learning goals and teachers can also achieve their teaching objectives. Increasing students’ engagement during e-learning can be an option for future research.

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