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Videoconferencing Language Learning, a Blessing or a Curse? Students' Voice of Online Course Through Zoom Videoconferencing

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Abstract. The pandemic has changed instructional delivery from offline to online learning models. By doing so, teachers need to adapt to this transition and explore several online learning platforms. One of the popular and effective platforms is Zoom as videoconferencing. It includes several features, such as a chat box, polls, breakout rooms, and share documents or files. This qualitative case study aimed to explore the students' views of Zoom as Videoconferencing. This qualitative research used questionnaires, observation, and interviews as data collection. The results revealed that Zoom as videoconferencing was effective, accessible, and flexible. Several positive responses were obtained from the learners as Zoom facilitated them with live-online interaction and boost their engagement in an online course. Future researchers should investigate the student-student as well as teacher-student interaction in the Zoom videoconferencing and how student engagement and student motivation impact the success of online courses.

Keywords: Online Course, Videoconferencing, Zoom

INTRODUCTION

The use of technology in the first or second language classes has become a hot issue nowadays. Technology can both facilitate students to interact with each other in the learning process and create a communicative and interactive classroom atmosphere [1]. By utilizing synchronous computer-mediated communication (SCMC), students experienced real-time virtual courses, as well as video conferencing via computers, mobile phones, or tablets anywhere and anytime [2]. This technology provides collaboration opportunities for students [3] and the opportunity to engage in live-online interactions [4]. In an online course, the teacher plays a very important role in creating a pleasant

interaction, an effective learning environment, and a successful learning process [5]. By doing so, teachers need to adapt to the technological literacies and facilitate students with attractive and easy-to-use learning platforms based on the learners' characteristics and learners' needs. Online learning will be effectively implemented when the educators and policy makers work together and support the success of the online learning process [6].

Nowadays teachers can explore various online learning websites and utilize online learning platforms to facilitate students for specific learning goals. Teachers can choose asynchronous learning as it facilitates teaching and learning in different places and at different times. This asynchronous mode does not require face-to-face students. Teachers can upload learning materials or recordings based on topics which are then uploaded on the platform for students to access. Another option, synchronous learning allows teachers to have an online interaction with students at the planned time. This allows teachers and students to interact face-to-face in real-time. Students can ask questions and can get immediate feedback [7].

Instructors must be prepared to deal with technical problems that may occur with online platforms such as loss of connectivity or slow connection during meeting sessions. Zoom can be exploited as a platform for live interaction or videoconferencing. With technology involved in delivering material, the design of effective and fun teaching activities will be an important point so that students can participate and be actively involved. Instructors should understand Zoom's features: (1) audio, video, text chat, whiteboards, polls, and break room (2) Audio, only one person can speak at a time (3) Video image via webcam, and simultaneous screen sharing (4) Text sharing and image creation (whiteboard) (5) The use of audio, video, text chat, and board write in parallel (6) The use of slides and videos (7) Automatic recording of meeting sessions (allows participants to review the recorded-video) [8].

Furthermore, teachers should have a good approach to the students during online learning and understand their different characters and their difficulties. The students may have different preferences regarding online platforms, some may enjoy synchronous learning but others may enjoy asynchronous learning [9]. Some students may have limitations in accessing online learning due to poor signals, inability to use online media, or lack of interest in online learning. Therefore, the teacher needs to pay attention to this and provide the appropriate online learning platforms that suit their needs.

Engagement is defined as the student's energy both physically and psychologically where they actively participate in the experience academic [10]. There are three student engagement types; cognitive, emotional, and behavioral engagement [11]. Cognitive engagement includes the cognitive resources and effort that students invest, emotional engagement includes motivation and commitment, and behavioral engagement deals with student behavior in completing tasks [12]. Student involvement will increase with the collaboration and interaction during the learning process and more focused on the development of co-creation, satisfaction, and commitment [13].

The theory about the exploitation of video and conferencing technology known as Voice over Internet Protocol (VoIP) in qualitative data collection is bounded. Video conferencing, which is equipped with video, voice, and text messaging features, helps teachers and students interact directly and more closely [14], [15]. In brief, the students from different zones, as well as different times, can interface in real-time with synchronous online methods from their respective homes for an engaging videoconferencing classroom.

Zoom as a video conferencing platform offers a variety of features that are simple, attractive, and effective. The facilities provided by Zoom are online meetings, group messages, meeting recordings, breakout rooms for small group collaboration. Like other synchronous learning platforms, Zoom can be downloaded and run-on computers, tablets, and mobile devices [16]. When teachers find it difficult to motivate students' engagement in virtual learning, Zoom becomes a solution as teachers can distribute polls and surveys to explore the learners' perceptions and answers during virtual classes. This is a formative assessment to monitor their understanding of the learning material as well as to provide feedback. Besides, the teachers and students can easily facilitate Zoom to share browser screens such as Mentimeter and Go Soapbox, create active and interactive learning, share files and provide audio videos [17], [18].

Schools and universities are familiar with Zoom. They use it for audio/visual conference meetings, online classroom teaching, office meetings, and student presentations. Participants receive an email invitation to join the Zoom meeting. Instructors can easily mute participants to prevent disturbing noise during the meeting whenever they want. Zoom is also equipped with gallery views and speakers. In addition, it allows instructors to meet live with students in regularly scheduled classes. Compared to another videoconferencing system, Microsoft Teams, for instance, facilitate faculty, staff, and students to have separate channels. Each faculty member has his own dedicated channel (in teams) to carry out the class. Instructors can also access other individual channels for a collaborative project. Microsoft Teams has a built-in meeting feature for holding classes and sharing documents, such as power-point presentations, interactive websites, videos, and e-books that can be attached to post. Virtual whiteboards and video calls are also available. In addition, One Note (a special note-taking tool) is included with the Team for various learning materials and activities [19]. As a synchronous platform, Zoom has a fairly complete set of features for

teaching purposes such as audio, video, text chat, whiteboards, polls, and breakout rooms [8]. Most interestingly, Zoom has been the only videoconferencing platform that provides a raise a hand and breakout room feature for small discussions.

As reported from the previous research, Master's students of Computer-Based Learning programs at universities in the UK were recruited to participate in remote courses using video conferencing. The total number who pursue Master's studies were 66 students; 45 local students and 21 students in remote locations. Data was gathered by using diary research. Findings showed that local students received more information and explanations from lecturers, in addition, they were more receptive to reading, reviewing materials, working in groups, and making presentations than students living in remote areas. In brief, the quality of online learning with the videoconferencing system is not similar to face-to-face learning [20].

Furthermore, the research article exploring Zoom was conducted by collecting qualitative interview data in the context of health research [21]. The participants were 16 practice nurses where they participated in an online qualitative interview about their experience using Zoom. The results showed that Zoom is considered satisfactory as it provides convenience, cost-effectiveness, data management features, as well as security options. In addition, Zoom provides innovative and attractive features such as face-to-face, telephone, and video conferencing services. Research on students' perceptions of video conferencing in higher education was also explored [22]. Second and third-year students were recruited to participate in a 30-minute English class using video conferencing. However, the results revealed that learning with video conferencing did not have a positive impact on students as they tend to show negative attitudes and lack of participation.

Findings related to the effectiveness of Zoom have been explored in numerous publications, however, since several studies reported that Zoom Videoconferencing did not contribute to the learner engagement in Zoom videoconferencing courses, it is crucial to conduct an in-depth investigation on the learners' lack of engagement in a live-online course or videoconferencing system. Therefore, the researchers attempted to answer these research questions: 1) how is the accessibility and flexibility of online learning through Zoom Videoconferencing? 2) how is the learner engagement of online learning through Zoom Videoconferencing? and 3) what are the challenges they experienced during online learning through Zoom Videoconferencing?

METHODS

This qualitative case study was intended to explore the students' views of Zoom as videoconferencing through participatory analysis, in which both the learners as well as a lecturer were involved in Zoom videoconferencing course over one semester. The participants in this study were 25 students at the State Islamic University Kiai Haji Achmad Siddiq Jember, East Java Indonesia by using purposive sampling. After prospective participants completed videoconferencing English language learning course and had willingly become research participants, they (n=25) were recruited and given a questionnaire in the form of a survey and a semi-structured interview through Google form. Furthermore, it was necessary to distribute an in-depth interview through virtual-written WhatsApp to participants (n=3) to complete the unclear responses on Google form. The study employed content-related evidence of validity, which entails having two experts check the instrument's content and assess whether or not it is relevant. In addition, capturing the student's participation and engagement in the Zoom videoconferencing course was needed to strengthen the data from the interview., The virtual interview agreed with the predetermined time and place and lasted for 10-15 minutes. The interview was recorded through Google Form and WhatsApp, viewed repeatedly, transcribed, and copied into a format table to help the researcher easily identify and classify data. The interview was conducted in Bahasa Indonesia; thus, the students could answer questions correctly.

RESULTS AND DISCUSSION

Q1. Providing accessibility and flexibility

The results of questionnaires revealed that Zoom in an online course was effective. 18 out of 25 students or 72% agreed with the effectiveness of Zoom while 7 out of 25 students or 28% confirmed that it was less effective. The procedure for using this application is simpler and can be accessed either on a cell phone or a computer. Meanwhile, data in the observation indicated that Zoom was easier for both lecturer and students to access information, as it was seen when students shared YouTube videos while doing group presentations. Besides, Zoom facilitated the learners

with some attractive features and provided convenience in learning anytime and anywhere, whether on campus or at home.

Data that emerged from the interview displayed that Zoom becomes popular due to its simple and attractive features. Zoom makes online learning more accessible and flexible. The learners can easily download and use the benefits of its features. Not only can they access Zoom at university but also can they access it home safely.

Yes, it is very simple to download Zoom. We can download it on Playstore. Online learning via Zoom is easily accessed and flexible to be applied in all aspects, especially in education. Besides, it becomes the effective one. Exactly, it helps us to be safe during this pandemic and respect the government's decision. (S3 through WhatsApp)

Not only does Zoom facilitate meeting schedules and document sharing for slides presentations but also does it provide chat features. Two excerpts are as below.

Yeah, it is easy to make a schedule for our group presentation, we can share the link a week before on Whatsapp group (S1 via WhatsApp)

We can share materials or documents so that teacher and all students can see them on screen. (S5 via Google form)

Q2. Engaging the learners in live-online courses

Data seen from the observations showed that the students enjoyed the presentation session with their group, they were so enthusiastic and engaged in the question-and-answer session after the presentation. By taking advantage of the best features on Zoom: The Raise Hands feature facilitates participants the learners to provide questions and a Chat feature that help those who were not confident to ask directly, or just to clarify if the questions posed were not accepted. Furthermore, students enjoyed the Q&A discussion forum, in this session, all students were equally involved so that students who were weak in language had the same opportunity to be involved and could express their opinions regarding the topic of discussion. Sometimes teachers invited students to ask questions in chat box or asked other students to give comments on other students' opinions. This situation helped students to participate more and engage interactively and communicatively. The sense of presence and appreciation could increase when everyone turned on their camera, and they noticed that enabling video was an important part of their participation and engagement in videoconferencing classes.

Furthermore, data that emerged from the interview displayed that Zoom facilitates the learners with engaging, and communicative classroom activities. Besides, Zoom facilitates students and teachers to meet face to face virtually so that their closeness can be maintained. Some students feel more comfortable asking questions and expressing opinions directly in discussion forums via Zoom and they prefer direct feedback from lecturers as two participants confirmed below.

What makes Zoom interesting is we can directly listen to the teacher's explanation and we can directly ask questions to the teacher. (S13 via Google form)

Students will be active in a virtual classroom when the teacher can create a good learning atmosphere, such as some activities that boost them to speak up or boost their participation and engagement in the meeting. (S3 via WhatsApp)

I need to focus on class and try to actively participate in the English virtual classroom session. It is not easy but I am struggling to express my opinion when the teacher gives us a chance to provide comments regarding the topics. (S1 Via WhatsApp)

Zoom also provides a breakout room for small group discussion. Teachers can schedule courses and students can also schedule their group presentations via the Schedule feature. They can also record and save videos during virtual courses.

I once joined the Breakout room as the teacher asked us to join a breakout room for a discussion in intercultural listening. There were 5 participants in the breakout room. The host determines which rooms for the participants to join. (S2 via WhatsApp)

Well, it is an interesting Breakout room that provides us with small group discussion. Five students in a group feel like a home, I can freely express my idea and we can share and find some related information on the internet together as a team. (S3 via WhatsApp)

Some students argue that an offline classroom is still the best option for them in facilitating the learners with physical interaction in the classroom and boosting their self-confidence to speak up in front of their teacher and classmates. However, two of them argue that non-physical interaction with the teacher makes the students more confident in conveying ideas or asking for difficult materials. As one participant revealed:

Well, before the pandemic, I am always afraid to ask when the class is offline. Zoom is very helpful; I can ask for the difficult materials on the Chat box. (S15 via Google form)

By clicking the "Raise a hand" button is simple, I know it sometimes depresses me when I have no idea to say something but I need to build my confidence to practice my English language. (S1 via WhatsApp)

Q3. The Challenges of Zoom

Data from observations revealed that students expressed their frustration when they experienced technical problems, especially in case of poor audio quality, out of sync between audio and video, as well as the ability or adaptation to new technologies, hence it created anxiety in language learning. This anxiety made students fail to use technology properly. In addition, the problem that occurred in language learning videoconferencing was that students were still reluctant to turn on their cameras as they were not confident in speaking directly in front of the lecturer or classmates.

Students reported several obstacles in an online course via Zoom videoconferencing. Some learners experienced difficulties in joining the meeting, and they were frustrated to try overtimes. The challenges are related to broadband internet service availability, poor internet signal, limited quota, and difficult connectivity. This condition is reported by students in the following interview excerpts.

Our obstacle is related to the availability of internet service. We need to have big data or a big quota to access Zoom. (S7 via Google form)

The audio is not good, I cannot hear the voice. It is less effective due to difficult connectivity. (S16 via Google form)

Another obstacle is dealing with student motivation. Monotonous learning in a synchronous Zoom class creates a negative learning atmosphere. Some students reported that some teachers cannot facilitate the learners with interesting activities instead of the lecture model, in which the teacher explained the materials by providing PowerPoint slides throughout the course. Students' awareness in learning becomes another obstacle as some of them either feel comfortable or self-isolated at home.

The challenges that I found; firstly, I get difficulties on internet signal. Secondly, I get bored in learning when the lecturer teaches us in a monotonous learning model. Thirdly, there is a lack of motivation and inspiration from the lecturer" (S3 through WhatsApp)

Unfortunately, not all students have a good awareness of the importance of learning and lack the motivation to learn more deeply. (S1 through WhatsApp)

Talking about the benefits of Zoom in online courses, one of the benefits is providing flexibility. The flexibility is in terms of access anytime and anywhere. This finding agrees with [23], [24], confirming that Zoom provides the flexibility and convenience in an engaging interaction of videoconferencing, written communication as well as multimedia for the learners. The most interesting feature of it is that it provides a breakout room. The results of this

study indicated that the breakout room was effective to facilitate the learners' engagement. This is consistent with the previous studies that confirm the effectiveness of breakout rooms. The learners can privately chat with the lecturer, and it is more convenient for them [25]. This facility provides opportunities for students to participate and engage in student-student interactions in small group discussions or role-playing, and explore their language and ideas to communicate with each other, thus, the learning objectives can be achieved. However, the teacher must provide interesting learning materials, and ensure that every student feels comfortable to participate and be actively involved in discussions in the breakout room [18].

The learners reported that during the Zoom video conferencing course, they experienced challenging activities in a virtual classroom, live interaction creates either joyful learning or a stressful learning experience for several learners with low self-confidence. Through Zoom video conferencing, second language learners can participate and engage by having live conversations. Not only does it facilitate them with live-online student-student interaction, but also does it allow them to discuss their experiences related to coursework topics [26], [27]. Some students who live in rural areas with unstable internet access often complain that it is difficult to get into Zoom classes. When they successfully enter the Zoom meeting, they face other challenges, like poor sound quality, or cannot turn their video on. It is in line with several studies which confirmed the technical issues on Zoom. The learners experienced difficulty in accessing Zoom due to its loss of connection, quality of sound and video, call connection issues [21], [28].

Why do some students feel bored in Zoom class? Some reported that the teachers could not facilitate the learners with clear explanations and enjoyable tasks. As it impacts learner motivation, the teacher needs to find out the solution. What the students want is live engagement with interesting activities, not monotonous but interactive and communicative. As reported in the previous study on why learners prefer pre-recorded video to Zoom, the findings revealed that clear explanations, presentable teachers, and real engagement are the concerns that need to highlight [29]. Therefore, incorporating some strategies by providing interesting tasks in breakout rooms, chat features, and whiteboards in Zoom videoconferencing can successfully enhance student engagement [30].

CONCLUSION

This paper represents the voice of the learners dealing with online courses through Zoom Videoconferencing in terms of accessibility, flexibility, engagement as well as challenges encountered by the learners. This present study highlights the success of video conferencing in an online course through Zoom in a foreign language course. Synchronous videoconferencing can create an accessible, flexible and effective classroom environment, facilitate an engaging online learning environment, and boosts teacher-student interaction as well as student-student interaction interactively and communicatively. Future researchers are suggested to examine the student-student as well as teacher-student interaction in the Zoom application and how student engagement and student motivation impact the success of online courses.

REFERENCES

- [1] U. Balaman and O. Sert, "Development of L2 interactional resources for online collaborative task accomplishment.," *Comput. Assist. Lang. Learn.*, vol. 30, no. 7, pp. 601–630, 2017, doi: <https://doi.org/10.1080/09588221.2017.1334667>.
- [2] D. Healey, *Language learning and technology: Past, present and future.*, In F. Farr. Abingdon, UK: Routledge, 2016.
- [3] C. Reinders, H., & White, "20 years of autonomy and technology: How far have we come and where to next?," *Lang. Learn. Technol.*, vol. 20, no. 2, pp. 143–154, 2016, doi: 10.125/44466.
- [4] E. Rassaei, "Video chat vs. face-to-face recasts, learners' interpretations and L2 development: a case of Persian EFL learners," *Comput. Assist. Lang. Learn.*, vol. 30, no. 1–2, pp. 133–148, 2017, doi: 10.1080/09588221.2016.1275702.
- [5] A. R. Rojabi, "Exploring EFL students' perception of online learning via Microsoft Teams: university level in Indonesia," *English Lang. Teach. Educ. J.*, vol. 3, no. 2, pp. 163–173, 2020, doi: 10.12928/eltej.v3i2.2349.
- [6] M. Wicks, *A National Primer on K-12 Online Learning - Version 2*, no. October. John Watson, Evergreen Education Group, 2010.
- [7] C. K. S. Singh *et al.*, "Rethinking English language teaching through Telegram, Whatsapp, Google Classroom and Zoom," *Syst. Rev. Pharm.*, vol. 11, no. 11, pp. 45–54, 2020, doi: 10.31838/srp.2020.11.9.

- [8] C. H. Ng, "Communicative Language Teaching (CLT) through synchronous online teaching in English language preservice teacher education," *Int. J. TESOL Stud.*, vol. 2, pp. 62–73, 2020, doi: 10.46451/ijts.2020.09.06.
- [9] M. Kunin, K. N. Julliard, and T. E. Rodriguez, "Comparing face-to-face, synchronous, and asynchronous learning: Postgraduate dental resident preferences," *J. Dent. Educ.*, vol. 78, no. 6, pp. 856–866, 2014, doi: 10.1002/j.0022-0337.2014.78.6.tb05739.x.
- [10] A. W. Astin, "Student involvement: A developmental theory for higher education," *J. Coll. Stud. Dev.*, vol. 40, no. 5, pp. 518–529, 1999.
- [11] J. A. Fredricks, P. C. Blumenfeld, and A. H. Paris, "School engagement: Potential of the concept, state of the evidence," *Rev. Educ. Res.*, vol. 74, no. 1, pp. 59–109, 2004, doi: 10.3102%2F00346543074001059.
- [12] G. Northey, T. Bucic, M. Chylinski, and R. Govind, "Increasing Student Engagement Using Asynchronous Learning," *J. Mark. Educ.*, vol. 37, no. 3, pp. 171–180, 2015, doi: 10.1177/0273475315589814.
- [13] R. J. Brodie, A. Ilic, B. Juric, and L. Hollebeck, "Consumer engagement in a virtual brand community: An exploratory analysis," *J. Bus. Res.*, vol. 66, no. 1, pp. 105–114, 2013, doi: 10.1016/j.jbusres.2011.07.029.
- [14] D. Lo Iacono, V., Symonds, P., & Brown, "Skype as a tool for qualitative research interviews," *Sociol. Res. Online*, vol. 21, no. 12, 2016, doi:10.5153/sro.3952.
- [15] S. Weller, "Using internet video calls in qualitative (longitudinal) interviews: Some implications for rapport," *Int. J. Soc. Res. Methodol.*, vol. 20, pp. 613–625, 2017, doi: 10.1080/13645579.2016.1269505.
- [16] Zoom Video Communications Inc, "Security guide. Zoom Video Communications Inc.," 2016.
- [17] L. Kohnke, "GoSoapBox – Encourage participation and interaction in the language classroom," *RELC J.*, pp. 1–3, 2019, doi: <https://doi.org/10.1177%2F0033688219872570>.
- [18] B. L. Moorhouse and L. Kohnke, "Using Mentimeter to elicit student responses in the EAP/ESP classroom," *RELC J.*, vol. 51, no. 1, pp. 198–204, 2020, doi: <https://doi.org/10.1177%2F0033688219890350>.
- [19] D. M. Barry, H. Kanematsu, N. Ogawa, and P. McGrath, "Technologies for teaching during a pandemic," *Procedia Comput. Sci.*, vol. 192, pp. 1583–1590, 2021, doi: 10.1016/j.procs.2021.08.162.
- [20] M. Knipe, D., & Lee, "The quality of teaching and learning via videoconferencing," *Br. J. Educ. Technol.*, vol. 33, no. 3, pp. 301–311, 2002.
- [21] M. M. Archibald, R. C. Ambagtsheer, M. G. Casey, and M. Lawless, "Using Zoom videoconferencing for qualitative data collection: perceptions and experiences of researchers and participants," *Int. J. Qual. Methods*, vol. 18, pp. 1–8, 2019, doi: 10.1177/1609406919874596.
- [22] H. G. Candarli, D., & Yuksel, "Students' perceptions of video-conferencing in the classrooms in higher education," *Procedia-Social Behav. Sci.*, vol. 47, pp. 357–36, 2012, doi: 10.1016/j.sbspro.2012.06.663.
- [23] D. Serhan, "Transitioning from face-to-face to remote learning: Students' attitudes and perceptions of using Zoom during COVID-19 pandemic," *Int. J. Technol. Educ. Sci.*, vol. 4, no. 4, pp. 335–342, 2020, doi: 10.46328/ijtes.v4i4.148.
- [24] Z. Almahasees, K. Mohsen, and M. O. Amin, "Faculty's and students' perceptions of online learning during COVID-19," *Front. Educ.*, vol. 6, no. 5, pp. 1–10, 2021, doi: 10.3389/educ.2021.638470.
- [25] D. Bailey, N. Almusharraf, and R. Hatcher, "Finding satisfaction: intrinsic motivation for synchronous and asynchronous communication in the online language learning context," *Educ. Inf. Technol.*, vol. 26, pp. 2563–2583, 2021, doi: 10.1007/s10639-020-10369-z.
- [26] L. Starkey, *Teaching and learning in the digital age*. London, UK: Routledge, 2012.
- [27] C. A. Lenkaitis, "Technology as a mediating tool: videoconferencing, L2 learning, and learner autonomy," *Comput. Assist. Lang. Learn.*, vol. 33, no. 5–6, pp. 1–27, 2019, doi: 10.1080/09588221.2019.1572018.
- [28] C. A. Tuttas, "Lessons learned using web conference technology for online focus group interviews," *Qual. Health Res.*, vol. 25, pp. 122–133, 2015, doi: <https://doi.org/10.1177/1049732314549602>.
- [29] M. Islam, D.-A. Kim, and M. Kwon, "A comparison of two forms of instruction: Pre-recorded video lectures vs. live ZOOM lectures for education in the business management field," *Sustainability*, vol. 12, no. 19, pp. 1–11, 2020, doi: 10.3390/su12198149.
- [30] S. Berges, S. Martino, L. Basko, and C. McCabe, "Zooming" into engagement: Increasing engagement in the online classroom," *J. Instr. Res.*, vol. 10, pp. 5–11, 2021.