An Outlook of Rarely Used Feature Functions on Zoom Video Conference Technology in Higher Educations

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***Abstract*—Common online learning systems have functions with collaborative methods to accomplish all academic activities such as deploying curricula, sharing documents, managing and tracking the results. Since Covid-19 pandemics, the need of a sophisticated learning management system is in high growth to benefit academic communities, such as greater collaboration among teachers and a more consistent measurement of students' progress. Survey was conducted to investigate what and how they operate on some functions at Zoom Video Conference technology. Using statistics to support quantitative data processing, and analysis results triggers some ideas to initiate developing more friendly functions for much greater benefits to gain.**

Keywords—Questionnaires, Zoom Video Conference, digital learning, online learning

I. INTRODUCTION

The new normal era is ongoing to replace the old normal modes post of Covid-19 pandemic. One of demands in this new normal mode is a sophisticated digital or online learning, it is like a new renaissance in academic communities to mean learning. This new platform has attributes to increase learning power, supported by tremendous supply of resources. Students or lecturers are to seek for clicking magic functions to fit all their needs to accomplish their education activities. However, it comprehensively is undeniable to include internet technologies and other important knowledge to produce materials for delivering them in the classrooms, technology to teach learners, and could also regulate how courses are set in an organization.

Some technologies of digital or online learning are used as tools to deliver those course materials, such as Skype, Microsoft Meeting, Google meet, WhatsApp, Moodle, MOOC and Zoom Video Conference (ZVC) [1]. Majority of the worldwide seem to like to use ZVC, including Indonesia. Along the way of ongoing online learning among academic communities, although there were some differences of opinions and noted in the level of their satisfaction from personal experiences. On having ZVC as a technology tool, overall satisfactory that students rated for their online instruction as moderate modes, however, higher satisfaction is rated for hybrid or blended online courses compared to fully online courses [2]. Relegation of students' motivation and persistence, usually due to negative perceptions, rise gradually, because students do not like the learning process and its results. Online learning is not for every student with their unique backgrounds; however, their diverse backgrounds could be an attribute for institutions in designing a better quality of online learning to meet student needs. Methods supports and course structure design are expected to facilitate instructional performance and student satisfaction [3]. There two keywords captured dominantly in terms of online learning, they should be "Convenience", as the most cited reason to associate with satisfaction and "Lack of interaction" as the most cited reason to associate with dissatisfaction [4].

Popularity of information technology for ZVC as a digital or online learning rises and evolves rapidly towards its better capabilities nowadays. Technology is expected to create a variation for classroom activities, as the objective of using digital or online learning (ZVC) is to create a platform of the existing knowledge combined to Information Communication Technologies [5]. User friendly, accessible, and reliable technology at the same time providing a newly modified approach for collaboration among academic communities. For example, students from different units and majors would be able to collaborate forming cross-unit teams, helping each other and working on common or multiple tasks and assignments in unique ways. Well established collaborative technology tools for exchange of information, such as internet, video conferencing, and emails are well worth investigating to record reasons that there are some needs of updated technology in education [6].

II. METHODOLOGY

A. Questionnaires Survey

Survey was conducted in the third week of August 2020, by questionnaires printed in Indonesian language text and was not designed to reach overseas respondents. Questionnaires were distributed in random and independent

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modes among students and lecturers in Banten, West and East Java provinces, and Jakarta Capital. Data derived from Surabaya and Malang (East Java section), Tangerang and South Tangerang (Banten Section), and West Jakarta (Jakarta Capital Section). Those regions unfortunately were majority responses amount gained from distributed questionnaires, though they were widely distributed to other regions. There are a total 149 participants voluntarily responding to fill in the digital or online survey form among students and lecturers in those mentioned regions.

B. *Questionnaires Contents Design*

Since majority users at academic communities use ZVC, the questionnaires are designed to question participants with such questions like category 1: "which features do you use during the learning process using the Zoom application", category 2: "how Important the following features are in the learning process in your classroom", and category 3: "how often do you experience problems using the following features during your Learning Process". The features are file sharing, screen sharing, chat, recording, annotate, breakout room.

The participants' answers are collected as validated data to proceed its statistical post. Participants were asked to rate if those ZVC features are helpful for assisting them along the online learning process and how frequently they use them and what difficulty level they have in utilizing ZVC technology-based classroom tools. These questions are designed to synchronize the answers, if they use those features means that they know how to do it, and the frequency of using them would show the features degree of importance. Finally if they have some difficulties in some frequent level, then there should be some issues to be investigated using quantitative and qualitative approaches, in this case a simple statistic is applied to seek for some numbers and analysis is applied to resolve a betterment [6].

III. Finding and Discussion

The results of overall processes mentioned in methodology section, the feedback of participants on responding those three categories is displayed at following table 1:

TABLE I. PROCESSED DATA

Feedback Terms	Questions Category		
	Category 1	*Category 2*	*Category 3*
Never Used	32.14 %	14.76 %	24.16 %
Not Important (don't know)	13.42 %	83.90 %	74.50 %

Category 1 question feedback shows that features were "Never Used" shows 32.14% refer to annotation feature function and 13.42% considered that breakout room feature function is not important. Category 2 question feedback shows that features were "Never Used" shows 14.76% refer to annotation feature function and 83.90% considered that breakout room feature function is not important. Category 3 question feedback shows that features were "Never Used" shows 24.16% refer to annotation feature function and 74.50% considered that breakout room feature function is not important. Figure 1 Chart is provided to vision these numbers.

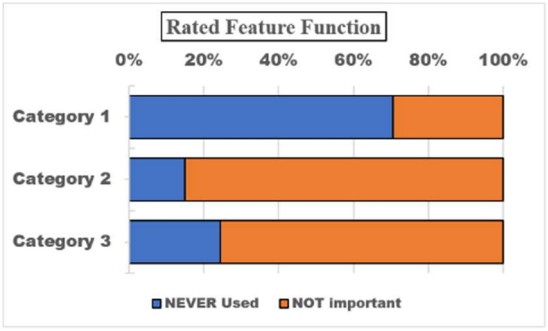

Fig. 1. Rated Feature Functions

The feature functions elements are repeatedly asked in each category, and the participants' unfavorable answers tend to point at annotation and breakout room feature functions. Regarding the feature functions of file sharing, screen sharing, chat, recording gain participants' high percentage rate. Assumptions came up to point to familiarity of the functions that they could have been using frequently in some other technology tools.

Something interesting is that when participants were provided by additional remarks on the survey questions with "don't know" term, some of the answers surfaced with "don't know", however data processing concludes to combine these two answers: "NOT important" and "don't know" as one term considering when people do not know about it, it could alternate either they do not want to know because it is not important. However, there are some percentages that come up as to represent some participants that used the annotation feature functions at 16.78% and breakout room feature functions at 26.12% which are not quite much exciting numbers. These percentages could derive from lack of information regarding those two feature functions or in other words, participants need to get more tutorials to operate the functions. In the perspective of developing and socializing those two feature functions, ZVC could create more attractive tutorial videos to advance users' knowledge, including their academic activities related to those functions' usability.

IV. Summary

In general, ZVC, as an online learning technology, has made a strong impact in the teaching and learning process. The smooth implementation, of course, in some access issues has not been fully resolved due to several different demographic infrastructure factors. However, during a pandemic like nowadays, though the ZVC has greatly contributed to the perpetuation of educational, socio-economic and government activities, there are some demands, in higher education institutions, for the importance of teaching and learning process, especially related to the modern information and communication technology used. Those demands need further observations, one of the obstacles in the budget shortage in facilitating online learning technology infrastructure with sufficient completeness has not been fulfilled.

In higher education institutions, the teaching and learning process is very important, especially regarding the use of modern information and communication technology used. One of the obstacles in the budget shortage in facilitating online learning technology infrastructure with sufficient completeness has not been fulfilled. Moreover, some of the technology offers free access, such as Google meet.

However, compared to free access from Google meet with additional attributes to extend installations of some feature functions, ZVC stands for being competitive to give free access for one to one personal usage.

The use of all available feature functions is not implemented optimally to increase learning activities and could indicate inefficiency rates on those features. The two feature functions, annotation and the breakout room, should be able to improve the learning environment that correlates with the social presence of the academic community, because this term is actually sustainable and has a significant effect on student comfort and satisfaction.

In an online learning environment, the "hands-on" experience needs to be further developed for students to enjoy the learning process, be inspired and remain committed to completing their degrees. Social constructivist learning theory is considered as the basis for educators to design material and meaning of lectures so that students are helped to interact with one another [7]. For ZVC, the two feature functions, annotation and breakout room, could fit to meet this demand.

When students feel personally connected to instructors and other students in an online learning community, that is what is called a social presence [8]. By increasing academic social presence in each course, lecturers could design types of assignments that are suitable for collaborative activities among students, so that the emergence of an authentic learning experience will follow students' talents and interests. The creation of collaboration can also continue the culture of forming cross-unit teams towards common tasks, so that class members understand that helping each other can be done in unique ways for the common good. On the teaching side, collaboration on the content of lecture materials should always have a sharing session as an important priority step, without neglecting the importance of standard lecture materials that are freely available online. In this case, ZVC feature function of annotation and break out room can be utilized as a platform for class members to collaborate and share experiences with the material presented.

In a skeptical perspective, online learning technology can be ineffective compared to conventional onsite learning, compared to face-to-face learning, due to the clarity of the specific material presented constraints. Lecturers who have high degrees in the academic field may not have the skills to transfer or deliver the material needed by class members, so that online learning methods can have multiple negative effects compared to onsite methods. And finally worsening the role of socialization and the infrastructure of the institutions concerned [9].

This paper aims to investigate through a survey that has suggested that the online learning technology used has not been fully implemented maximally. The reason for the research and survey conducted is to find affirmation that there is still a need for technology in education that will help in improving the learning process in detail, penetrating every need for the type of subject matter and the need for appropriate infrastructure facilities for each demography.

For designing better surveys, some attributes related to rank the effectiveness of the platforms applied and experienced by academic communities could be added as items in questionnaires. Additional variables could be applied to guide respondents, such as variables that represent the degree of tendency to try and explore the use of tools supplied, the degree of understanding the inconvenience of using those tools, the degree of assessing how easily to use the system interface and consistently meet the expectations in doing their works [10]. By giving more options for respondents to state their opinions could deliver accurate data, such as the options of informing if they have never taken an online course, or if they have, they could state on the effectiveness having online/digital learning compared to meeting regularly in conventional classroom settings. The online learning should offer convenience, meeting individual learning needs to communicate and to increase their sense of being in a community with their fellow students and instructors. Effectiveness and efficiency are gained when users achieve specified tasks with accuracy and completeness [11].

REFERENCES

[1] T. J. G. Barbosa and M. J. Barbosa, "Zoom: An Innovative Solution For The Live-Online Virtual Classroom," *HETS Online Journal, Bol 9. No. 2*, 2019.

[2] S. Ghaderizefreh and M. L. Hoover, "Student Satisfaction with Online Learning in a Blended Course," *Int. J. Digit. Soc.*, vol. 9, no. 3, pp. 1393–1398, 2018, doi: 10.20533/ijds.2040.2570.2018.0172.

[3] H. Kauffman, "A review of predictive factors of student success in and satisfaction with online learning," *Res. Learn. Technol.*, vol. 23, no. 1063519, pp. 1–13, 2015, doi: 10.3402/rlt.v23.26507.

[4] C. A. Lenkaitis, "Technology as a mediating tool: videoconferencing, L2 learning, and learner autonomy," *Comput. Assist. Lang. Learn.*, vol. 33, no. 5–6, pp. 483–509, 2020, doi: 10.1080/09588221.2019.1572018.

[5] L. Kohnke and B. L. Moorhouse, "Facilitating Synchronous Online Language Learning through Zoom," *RELC J.*, 2020, doi: 10.1177/0033688220937235.

[6] S. Bennett, S. Agostinho, and L. Lockyer, "Technology tools to support learning design: Implications derived from an investigation of university teachers' design practices," *Comput. Educ.*, vol. 81, pp. 211–220, 2015, doi: 10.1016/j.compedu.2014.10.016.

[7] J. Moreillon, "Increasing Interactivity in the Online Learning Environment: Using Digital Tools to Support Students in Socially Constructed Meaning-Making," *TechTrends*, vol. 59, no. 3, pp. 41–47, 2015, doi: 10.1007/s11528-015-0851-0.

[8] E. Sung and R. E. Mayer, "Five facets of social presence in online distance education," *Comput. Human Behav.*, vol. 28, no. 5, pp. 1738–1747, 2012, doi: 10.1016/j.chb.2012.04.014.

[9] D. A. Armstrong, "Students' perceptions of online learning and instructional tools: A qualitative study of undergraduate students' use of online tools," *Turkish Online J. Educ. Technol.*, vol. 10, no. 3, pp. 222–226, 2011.

[10] M. S. Hartawan, I. Mantra, and I. W. Widi Pradnyana, "Interpretative Analysis and Testing Statistics to test questions testing the Mobile Government questionnaire against the model of readiness and successful adoption," *Proc. - 1st Int. Conf. Informatics, Multimedia, Cyber Inf. Syst. ICIMCIS 2019*, pp. 147–150, 2019, doi: 10.1109/ICIMCIS48181.2019.8985195.

[11] K. K. Greene, J. Kelsey, and J. M. Franklin, "Measuring the Usability and Security of Permuted Passwords on Mobile Platforms," p. Id, H. A. L. (2013). Un crime sans déviance : le v, 2016, [Online]. Available: http://nvlpubs.nist.gov/nistpubs/ir/2016/NIST.IR.8040.pdf.