Curricula:
Journal of Curriculum Development
https://ejournal.upi.edu/index.php/CURRICULA/

The impact of Zoom as a learning application on student learning concentration in the COVID-19 era

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ABSTRACT

The presence of COVID-19 has hampered the activities carried out by the community, one of which is in the field of education. With the entry of the era of the Industrial Revolution 4.0, education must follow technological developments and take advantage of technological sophistication to facilitate the learning process. Today there are many technological innovations in the world of education, for example, in the form of applications or learning platforms that can support the learning process between educators and students. This study aims to determine the effect of the ZOOM learning application in the COVID-19 era on students' learning concentration. The study used descriptive quantitative methods with survey activities as data collection, involving students from junior high school, senior high school, vocational school, and university level as respondents. The results showed differences in students' level of concentration during distance learning and face-to-face learning. After participating in distance learning assisted by the ZOOM video conferencing application, the concentration of students decreased to focus on learning. So it can be concluded that the ZOOM application influences the concentration of student learning during the COVID-19 pandemic. It is hoped that increasingly advanced technological developments can help students concentrate on learning.

ABSTRAK

Hadirnya COVID-19 membuat aktivitas yang dikerjakan oleh masyarakat menjadi terhambat, salah satunya di bidang pendidikan. Dengan masuknya era revolusi industri 4.0, ranah pendidikan dituntut harus mengikuti perkembangan teknologi dan memanfaatkan kecanggihan teknologi guna memperlancar proses pembelajaran. Dewasa ini banyak inovasi teknologi dalam dunia pendidikan, contohnya dapat berupa aplikasi atau platform pembelajaran yang dapat mendukung terjadinya proses pembelajaran antara pendidik dan peserta didik. Penelitian ini bertujuan untuk mengetahui pengaruh aplikasi pembelajaran Zoom Meeting di era COVID-19 terhadap konsentrasi belajar siswa. Penelitian menggunakan metode kuantitatif deskriptif dengan kegiatan survei sebagai pengumpulan datanya, dengan melibatkan peserta didik jenjang SMP, SMA, SMK, sampai dengan jenjang perguruan tinggi sebagai responden. Hasil penelitian menunjukkan bahwa terdapat perbedaan tingkat konsentrasi peserta didik saat pembelajaran jarak jauh dengan pembelajaran tatap muka. Setelah mengikuti pembelajaran jarak jauh yang dibantu oleh aplikasi video conference Zoom Meeting, konsentrasi peserta didik mengalami penurunan untuk fokus terhadap pembelajaran. Sehingga dapat disimpulkan bahwa aplikasi ZOOM ini sangat berpengaruh terhadap konsentrasi pembelajaran peserta didik di masa pandemi COVID-19 ini, diharapkan dengan perkembangan teknologi yang semakin maju, dapat membantu konsentrasi siswa terhadap pembelajaran.

Kata Kunci: *COVID-19; edukasi; E-Learning; video konferensi*

INTRODUCTION

In the field of education, the Industrial Revolution 4.0 has a very close relationship or role, namely the utilization of technological sophistication for learning. Learning is a process of interaction between educators and students. Learning also consists of several components, including learning media, to achieve appropriate learning outcomes. It also requires effective learning media that can make students actively contribute to the learning process (Pujiono, 2021). Digitalization is now starting to happen everywhere. The world of education is also following the global flow by digitizing education. Digitalization of education in Indonesia is carried out in various creative and innovative ways that advance the world of education in Indonesia. One of the innovations in education is the use of virtual face-to-face applications as a learning platform for two-way interaction without having to meet in the real world. This innovation is essential, especially considering the current state of the world, which is in a pandemic state (Fathurahman, 2020).

Today, as we know, in all parts of the world, including Indonesia, there is a pandemic of the COVID-19 virus, which first originated in Wuhan, China. Indonesia is one of the countries infected or exposed to COVID-19. With this pandemic impacting activities, aspects, and all fields dealing with human activities, this dramatically hampers the activities that are usually done. Because of the pandemic, everything or work is done in their respective homes (Hartono & Rahadi, 2021; Nafrin & Hudaidah, 2021). As we know, with this pandemic, the government has implemented a social distancing policy to break the chain of spread of the COVID-19 virus (Nasruddin & Haq, 2020; Muhandy et al., 2021). This also applies to the world of education, where schools, universities, and other formal institutions are forced to conduct virtual or distance learning.

The Ministry of Education and Culture of the Republic of Indonesia also issued Circular Letter Number 4 of 2020 dated March 24, 2020, concerning the Implementation of Education Policies During the Emergency Period for the Spread of COVID-19, containing the implementation of the teaching and learning process carried out at home online so that students have a meaningful learning experience (Dewi, 2020). As a result, inevitably, learning is carried out remotely, this is for the common good.

The indicators of Distance Learning based on the Circular Letter of the Minister of Education and Culture Number 4 of 2020 are as follows: (1) Providing meaningful learning experiences for students without being burdened by the demands of completing all curriculum outcomes for grade promotion and graduation. (2) Focusing on life skills education, including the COVID-19 pandemic. (3) Providing variations in activation and learning tasks for learning from home between students, according to their interests and conditions, including considering gaps in access/learning facilities from home. (4) Providing feedback on evidence or products of home learning activities that are qualitative and useful for teachers without giving qualitative scores/grades.

Using technology-based learning applications and media is an alternative for the academic community to provide material and carry out teaching and learning activities. In implementing online learning, video conferencing is an alternative for teachers as a substitute for face-to-face meetings, discussions, exams, and learning feedback with the help of applications that support the implementation of video conferencing (Nasution et al.,

2020). One application often used in KBM for students and educators is a video conference application. The Zoom Meeting video conference application is widespread in the learning process. This was triggered by the spread of the COVID-19 virus, which has been circulating since early 2020. As a result, people need to do things as much as possible at home to break the chain of spreading the COVID-19 virus (Monica & Fitriawati, 2020).

The research results of Luhulima et al. (2016) found that learning media using video is very helpful in the learning process both in formal and non-formal education. Generation Z children are born in a sophisticated era of technology, so the style and media used in learning are very general and visual. Learning applications can penetrate the boundaries of space and time because there is still a learning process or interaction, even with distance. This is due to the utilization of technology and the sophistication of the internet, which is growing occasionally. Looking at previous research conducted by Luhulima et al. (2016), this study focuses on the effect of learning using the Zoom application on student concentration. Other research also states that video conferencing can be used to implement complete learning (Mualam et al., 2022). However, in the field, limitations in holding virtual meetings using video conferencing are also in the spotlight and must be paid attention to.

This study aims to determine the effect of the ZOOM learning application in the COVID-19 era on student learning concentration. The study results are expected to inspire readers and be valuable for the researchers. Researchers chose this title because today, the COVID-19 virus is still rampant in Indonesia, impacting all fields, especially the education sector.

LITERATURE REVIEW

E-learning

The concept of utilizing technology in the field of education is one of the alternatives for educators and students in carrying out the learning process. The implementation of technology in education is often referred to as e-learning. E-learning utilizes the combination of technology and the sophistication of the existing internet. E-learning is a computer delivery and utilizes internet technology and programming that allows learners to interact with learning materials through various electronic devices (Sudarmoyo, 2020; Windyasari & Qoiriyah, 2020). In line with this, e-learning can be understood as instruction delivered through computers in a learning process, such as online, virtual, web-based, and so on (Mu'minah & Gaffar, 2020). Learning with e-learning can also be reduced with a microlearning learning system to improve the quality of the learning process with small but continuous learning (Susilana et al., 2022; Smolle et al., 2021; Nugraha et al., 2021).

Using technology and the internet in education provides convenience for students and educators in carrying out the learning process, where one can eliminate obstacles in the form of time and distance. According to Elyas (2018), the benefits of e-learning are (1) flexibility, where students can easily access learning, not having to come to an educational institution; (2) independent learning, students can learn to increase their independence in learning, such as determining when to study, the material to be studied, and others; (3) cost, e-learning tends to spend relatively low costs, so it becomes an alternative for students to access learning quickly.

E-learning media

The main advantage of e-learning is the ease and flexibility of access to learning (Damayanti, 2020; Munir & Muassomah, 2021). This is needed for the education sector to reach students even though students do not come to school. The existence of activity restrictions during the COVID-19 pandemic requires educational institutions to carry out learning at home. In this case, the role of technology is needed. Technology can create a learning atmosphere even in virtual face-to-face, then the e-learning method becomes an alternative for teachers and students (Latapamei & Rosy, 2021). Alternative media can be used to support the distance learning process. Some applications supporting the distance learning process include:

1. Video Conferencing Apps (Zoom Meeting & Google Meet). These two applications can make it possible to meet someone virtually by entering a password and username. The features of these two applications are microphones and cameras so that they can significantly facilitate the interaction process. Zoom Meeting and Google Meet video conferencing applications can be a substitute for classrooms that are usually used as a place of learning in schools (Sari, 2022).
2. Google Classroom application, This application is designed to allocate tasks given by educators. Learners can enter the class code shared by the educator to join. In this application, attendance can also be provided in the post and comment features. Google Classroom application can help educators and learners in this online learning period because its use is relatively easy and can be accessed via the web for free.
3. Google Form, can be used by educators to create questions or quizzes. In this case, it can help educators evaluate the extent to which students understand the material taught. Students with a Google account can access this web drive because Google Form does not need to be downloaded using the application, only via the web. In Google Form, educators can also create attendance that students fill in. In addition, it can calculate the answers or scores answered by students in filling out quizzes given by educators

In this distance learning process, video conferencing is an alternative media that is often used (Aulia et al., 2021). Where teachers and students can gather and conduct KBM even though they are in different places. One of the video conferencing applications often used is the Zoom Meeting application. This application is relatively effective in the learning process. The Zoom Meeting application is relatively simple and can be accessed on Android, iOS, or a computer or PC, so it can be used as an alternative.

Zoom Meeting learning application has many features supporting the interaction process (Kuntarto et al., 2021; Marwanto, 2021), such as the camera and microphone features. In addition, there is also a record feature that can record the ongoing learning process, which can be reviewed when students still need help understanding the discussion that has been discussed. The microphone feature is helpful as a process of interaction so that there is reciprocity from students, not only educators who speak. The Zoom Meeting application's camera feature also lets educators know what activities students are carrying out. Therefore, even though the learning process is remote, educators will still know whether their students contribute to learning (Sihombing et al., 2021; Fauziah, 2021).

METHODS

The method used in this study uses descriptive quantitative research. Descriptive quantitative is a type of research used to analyze data by describing or describing the data that has been collected. The technique used in data collection is a survey. Research with data collection techniques with the survey is conducted on large and small populations, but the data studied is from samples taken from that population (Hafidz et al., 2021). In this study, researchers conducted research by asking respondents questions about their opinions regarding the effect of the Zoom Meeting application on learning concentration in distance learning during the COVID-19 pandemic. This research used an instrument in the form of an online survey by utilizing the Google Form. Considering the situation when the research was going on the COVID-19 pandemic, the questionnaire was distributed using an online platform to minimize physical contact.
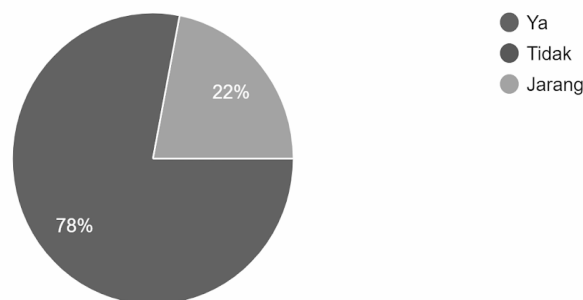
RESULT AND DISCUSSION

Result

The data collected from the distribution of questionnaires were 41 respondents. Most respondents answered that their teachers and educators use the Zoom Meeting video conference learning application in the distance learning process. The results of data collection can be seen in **Figure 1**.


Figure 1. Diagram of the Use of Video Conference Applications in the Learning Process
Source: Author's Document 2021

Based on the results of the questionnaire distributed that in the first indicator in the learning process, the teacher/instructor uses video conferencing, as many as nine people, or 22%, choose "rarely" use video conferencing applications, and as many as 32 people or 78% choose "yes" using video conferencing applications, and no one chooses "no" using video conferencing. These results are calculated from 41 respondents.

Figure 2. Diagram of Zoom App Usage in Learning Process
Source: Author's Document 2021

Based on the results of the distributed questionnaire, in the second question, which can be seen in **Figure 2**, educators use the Zoom application as the video conference of choice. A total of 34 respondents, or 82.9%, answered "Yes", one respondent, or 2.4% answered "No", and as many as six respondents or 14.6% answered "Rarely". These results were calculated from 41 respondents.
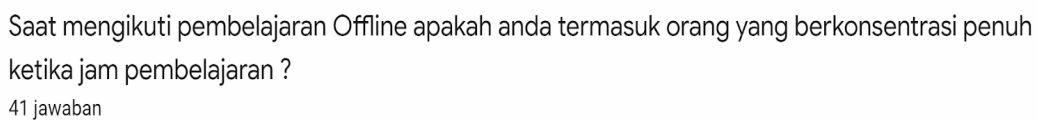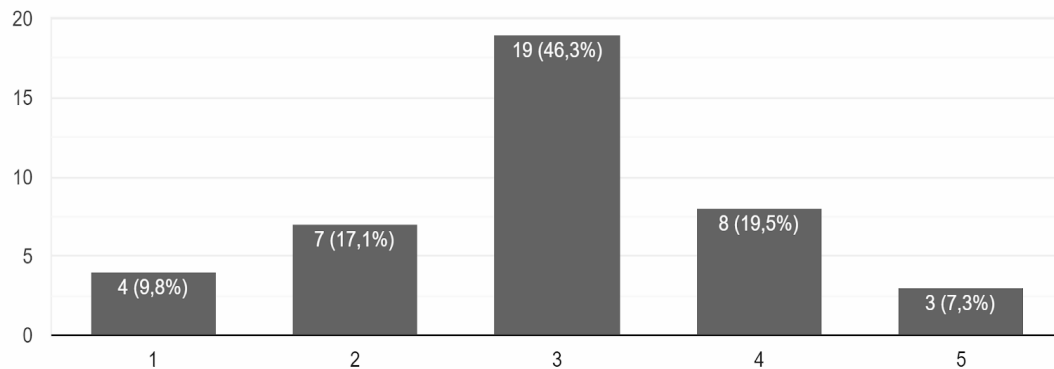

Figure 3. Diagram of Respondents' Concentration Level in Learning Using Zoom
Source: Author's Document 2021

Based on the results of the distributed questionnaire, the third indicator, which can be seen in **Figure 3**, is the student's concentration level during face-to-face learning. Researchers chose this question on a scale of 1-5 with information Very concentrated worth 5 with four voter respondents. Concentrated is worth 4 with 17 respondent voters. Moderately concentrated is worth 3 with 17 respondent voters. Less Concentrated is worth 2 with one respondent voter, and Not Concentrated is worth 1 with one respondent voter.

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With this, researchers can calculate the total score of voter respondents with a calculated score of 143 and a maximum score of 164. To calculate the percentage, you can use the formula $\frac{143}{164} \times 100\% = 87\%$. So, it can be concluded that 87% of respondents concentrate on learning outside the network while in class.

Figure 4. Comparison Diagram of Learning Concentration in the Classroom and on Zoom
Source: Author's Document 2021

Based on the results of the distributed questionnaires, the fourth solid indicator is seen in **Figure 4**, the level of learning concentration when using the Zoom Meeting application assistance during online learning. Researchers made this question option on a scale of 1-5 with information Very concentrated worth 5 with three respondents who chose. Concentrated is worth 4, with eight respondents voting. Moderately concentrated is worth 3, with 19 respondents voting. Less Concentrated is worth 2 with seven respondent voters, and Not Concentrated is worth 1 with four.

With this, researchers can calculate the total score of voter respondents with a calculated score of 122 and a maximum score of 205. To calculate the percentage, you can use the formula $\frac{122}{205} \times 100\% = 59\%$.. So, it can be concluded that 59% of respondents concentrate enough during online learning with the help of the Zoom Meeting application.
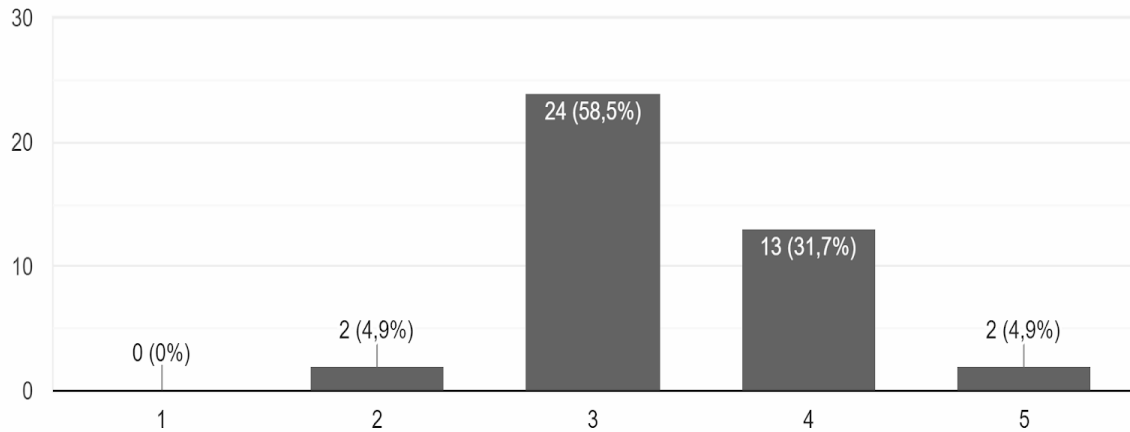
Based on the results of the distributed questionnaire, the fifth indicator is the reason for not concentrating on learning through video conferencing. Of the 41 respondents who filled in, they had different answers. However, respondents tend to find it challenging to concentrate on classes on Zoom. Some descriptions of the reasons for respondents' difficulties are as follows:

1. Through the video conference application, educators can only see our faces and the application can be opened on a laptop. Then, the material can be screenshotted or asked directly to the educator, so there is always the temptation to play on phones or do something else so that it is less concentrated on learning.
2. Material delivery is less interesting

3. There is no supervision. So, it can make excuses so students can play on their phones or sleep.
4. Inadequate signal and non-conducive environment
5. Signal constraints so that the material share screen does not appear

Saat menggunakan applikasi zoom, bagaimana penyampaian materi yang diberikan oleh guru/pengajar anda ?

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Figure 5. Diagram of Effectiveness of Learning Material Delivery through Zoom
Source: Author's Document 2021

Based on the results of the distributed questionnaires, the sixth solid indicator seen in **Figure 5** is the level of effectiveness of delivering material using the Zoom Meeting application. Researchers chose this question on a scale of 1-5 with information Very effective is worth 5, with 2 respondents who chose it. Effective is worth 4, with 13 respondents voting. Quite compelling is worth 3, with 24 respondents voting. Less Concentrated is worth 2 with 2 voter respondents, and Ineffective is worth 1 with 0 voter respondents.

With this, researchers can calculate the total score of voter respondents with a calculated score of 122 and a maximum score of 205. To calculate the percentage, you can use the formula $\frac{122}{205} \times 100\% = 33,6\%$. So, it can be concluded that as many as 33.6% of respondents delivered material on the Zoom Meeting application which was considered ineffective.

Next, the seventh indicator asked about applications that make respondents concentrate on learning. The 41 respondents who filled in had different answers, including:

1. YouTube
2. Zoom Meeting with attractive material packaging.
3. Quizizz
4. All applications can improve concentration. Whether or not the application is successful depends on the learners themselves.

The seventh indicator shows that most respondents prefer Quizizz as a supporting application that can improve concentration in learning. Based on the results of the

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questionnaire distributed, that in the eighth indicator, namely the advice for educators given by respondents if the Zoom app becomes a video conference option during online learning. Of the 41 respondents who filled out, they had different answers. Therefore, the researcher took the policy only to include suggestions from several respondents. Among them:

1. Educators must be more interactive with students. Often, provide stimulus so that students do not feel bored. Then, use an interesting PowerPoint. Also, use Quizizz.
2. My suggestion when learning using Zoom is that the educator must be enthusiastic so that students are enthusiastic and want to pay attention, and also use the help of other exciting media that can encourage students' activeness.
3. Vary with other media, such as YouTube, Quizizz, or others, so the learning process is more varied, and students get bored quickly.
4. Zoom Meeting should not be made for long hours because students will quickly get bored.
5. When learning is done not too long, interspersed with quizzes and others.

Discussion

After examining or reviewing the answers from respondents, learners who experience distance learning feel the difference in concentration level between distance learning and face-to-face learning. As the results above show, 87% of learners initially concentrate on face-to-face or offline learning. However, participating in distance or online learning assisted by the Zoom Meeting video conference application decreased learning focus only to the limit of concentrating enough learning, previously reaching the limit of concentrating on learning (Prasetyo & Supena, 2021). So, it is also necessary to pay attention to students' learning readiness when implementing learning using Zoom (Vhalery et al., 2021; Wahyuni & Siagian, 2020).

Things that can interfere with the concentration of students are caused by signal constraints, insufficient quota, delivery of less exciting material, and less assertive reprimands from the teacher, causing students to take it easy in learning. As we know, the ZOOM video conference application has a camera feature that each participant can operate. Therefore, students can turn off the camera feature to carry out other activities not known by the educator, thus making students less concentrated on participating in distance learning assisted by the Zoom video conference application. According to the results obtained by researchers from distributing the questionnaires, the delivery of material delivered by educators using the ZOOM video conference is quite adequate because many respondents answered that the signal and their limited quota constrained them. In this case, the education unit or government can subsidize the monthly quota for students so that learning is well conveyed (Huda & Hidayat, 2021).

So, the effect of the ZOOM learning application in the COVID-19 era on student learning concentration is quite effective in influencing students' learning concentration. It is just that several obstacles arise, including connection or signal from each student, which is enough to affect the focus of students in carrying out the learning process, and the ineffectiveness of the delivery of material delivered by educators to students who have

difficulty in asking material that has not been understood (Gemilang et al., 2022; Yudoningtyas et al., 2022).

One of the things that can be done to minimize these problems is that the government must equalize the internet network in the 3T (Disadvantaged, Frontier, Outermost) area zone so that students who are in the 3T area zone are not left behind and can still contribute to distance learning without affecting learning concentration. In addition, things that can be done to increase student concentration from boredom include combining interactive media such as animated power points so that students can pay attention and that learning is not so dull. (Sodikin & Surami, 2023). However, the ZOOM learning application is an alternative for distance learning because most respondents chose the ZOOM application as one of the video conferences supporting distance learning. This application can be a substitute for classrooms that can connect interaction between educators and students.

CONCLUSION

The use of video conferencing applications, especially the Zoom application, during the COVID-19 pandemic, has become an alternative for educators and students. However, on the other hand, learning using Zoom does not build an atmosphere of concentration for students. The decrease in concentration in Zoom application-based learning occurs due to various factors, such as the absence of a good learning atmosphere, unsupportive signals, and so on, with the effectiveness of material delivery through the Zoom application, where the delivery of material feels sufficient.

The suggestions from this research can be implemented by educators using the Zoom Meeting application as an alternative learning platform during distance learning to package the material to be delivered to students more interestingly than usual. Besides that, researchers also suggest that educators use unique methods to get more responses and attention from students while using the Zoom Meeting application or other video conference applications. In distance learning, educators must combine meetings with synchronous and asynchronous learning. In addition to overcoming boredom in learners, this can also save internet packages owned by learners.

AUTHOR'S NOTE

The authors declare that there is no conflict of interest related to the publication of this article. The authors emphasize that the data and content of the article are free from plagiarism.

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Dalam pembelajaran jarak jauh apakah guru/pengajar anda menggunakan applikasi video conference?
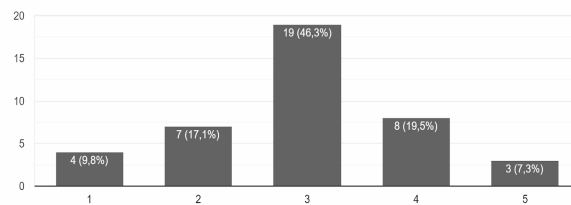41 jawaban
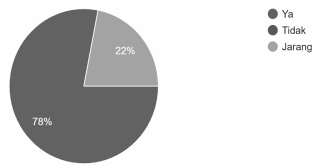
Apakah saat pembelajaran jauh guru/pengajar anda menggunakan aplikasi Zoom sebagai aplikasi video conference pilihan ?
41 jawaban
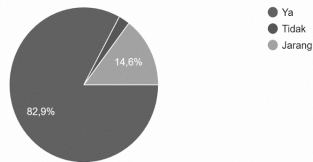
Saat mengikuti pembelajaran Offline apakah anda termasuk orang yang berkonsentrasi penuh ketika jam pembelajaran ?
41 jawaban
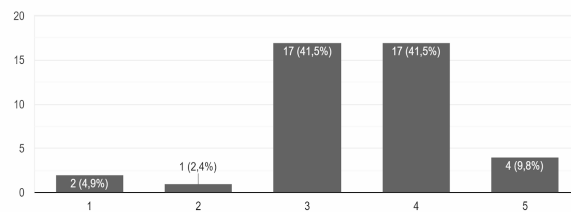
Saat menggunakan aplikasi vidioconference (ZOOM) dalam pembelajaran daring,apakah anda dapat berkonsentrasi seperti biasa saat anda belajar didalam kelas?
41 jawaban

Saat menggunakan applikasi zoom, bagaimana penyampaian materi yang diberikan oleh guru/pengajar anda ?
41 jawaban

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