

## Survey on the effectiveness of online learning processes due to the coronavirus (Covid-19) pandemic in table tennis course

Ari Wibowo Kurniawan<sup>1</sup>, Muhammad Iqbal Tawakal<sup>1</sup>

<sup>1</sup>Faculty of Sports Science, Malang State University, Jl. Semarang 5 Malang, East Java, 65145, Indonesia

Received: 30 October 2022; Revised: 02 November 2022; Accepted: 8 November 2022

### Abstract

The main purpose of this study is to identify and conduct research on online learning methods in table tennis courses. The survey method uses a descriptive research design. A total of 180 sample respondents consisting of. Table tennis students class 2018 Department of Physical Education, Health and Recreation, State University of Malang. Questionnaires were distributed online using Google Forms. There are six sub-variables assessed regarding student learning interest, online learning advantages, online learning weaknesses, online learning facilities and infrastructure, interaction quality, and application quality. The results of the research and data analysis showed the percentage of the overall score was 56.14%, which was included in the quite effective category, so it can be concluded that online learning in the table tennis course is quite effectively applied to students majoring in Physical Education, Health and Recreation, State University of Malang class. 2018. These results still need to be reviewed again if the pandemic situation is over because it will be more effective if learning table tennis courses are carried out directly.

**Keywords:** online learning, covid-19, table tennis

### INTRODUCTION

At all levels of education, from elementary, junior high, and high school, to university, one of the subjects taught in physical education. Physical activity is the main media used in physical education. The growth and development of students are formed through physical education. Aspects of physical fitness, movement, critical thinking, social, reasoning, emotional, moral action, healthy, and application of a clean environment are also developed through activity physical good endurance, and more energy is expected to increase according to activity (Suherman, 2004).

During the COVID-19 pandemic, the learning process at all levels of education was disrupted due to the outbreak of the Coronavirus Disease (covid-19) (Irsan et al., 2021). They are starting from the economic, political, to education sectors affected by the Covid-19 pandemic. The new policy

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Correspondence author: Ari Wibowo Kurniawan, Universitas Negeri Malang, Indonesia.  
Email: ari.wibowo.fik@um.ac.id



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was issued by the government as a step to prevent, combat, and break the chain of the spread of COVID-19, using Social and Physical Distancing, WFH (work from home), PSBB (large-scale) according to (Decree of the Minister of Health of the Republic of Indonesia, 2020). The policy changes how people live by carrying out activities from their respective homes, such as School, work, worship, and activities.

Covid-19 has also affected the education sector in Indonesia. According to Afrianto's data (2020), there are 28.6 million students, and 8.3 million of them have been included in the UN (national exam) participants, with a total of 2.6 million teachers. Minister of Education and Culture of the Republic of Indonesia (Kemendikbud, 2020), Nadiem Anwar Makarim, through circular letter 4 of 2020 regarding the implementation of education policies in the emergency period of the spread of coronavirus disease (covid-19) issued in March 2020. Among them: the elimination of the UN (national exam), study at home, school exams that are replaced with a portfolio of report cards or student achievements, class promotion exams in the form of portfolios and report cards, new student admissions (PPDB) organized by following the health protocol, and assistance funds operational School for funding goods are in accordance with the needs in preventing covid-19, followed by the postponement of the implementation of the computer-based written exam (UTBK) for prospective new students.

It was implementing new policies for all levels of early childhood education (PAUD) to tertiary institutions using online learning methods. Online learning is a distance learning activity utilizing communication media that connects teachers and students. Online learning can also be referred to as distance learning (PJJ) (Belawati, 2020). According to Riyana (2020), Online learning / online learning is a system that can facilitate students to learn more broadly, more, and more varied. Online learning was born from the fourth generation after the internet. Pros and cons characterize this new policy, but the application of online or distance learning is the right thing to do in the midst of the outbreak of the COVID-19 pandemic (Haryadi & Selviani, 2021).

Online learning is also in accordance with the Industrial Revolution 4.0, which is centered on Information and Communication Technology, aiming to create an innovative, creative, and competitive generation. Another goal of online learning is to equip the younger generation to face the challenges and changes of the Industrial Revolution 4.0 (Indrayana & Sadikin, 2020). Indonesia's education system is still being prepared to implement online learning due to drastic changes and implementation in a reasonably short time. These changes include conventional to digital education, learning methods, and learning resources, to the unpreparedness of students and educators. The impact of the unpreparedness of educators is that it makes it difficult for students to follow activities and learn. Constraints to online learning are influenced by: 1) low mastery of technology. 2) limited facilities and infrastructure. 3) internet network. 4) cost. Constraints in online learning are fundamental obstacles that must be faced, including obstacles in internet networks and limited features (Hutauruk, 2020).

The low mastery of technology experienced by educators and students is one of the impacts of online learning (Fikri et al., 2021). So training for educators and students is important to do to facilitate learning activities in order to utilize digital technology-based learning media optimally. Limited facilities and infrastructure in online learning activities, especially for students. Limited facilities, such as communication tools, both *cell phones* and computers, are obstacles because not all students have *gadgets* that support online learning activities (Primasari, 2021).

The internet network is also one of the obstacles, and this happens as a result of the uneven distribution of the internet in Indonesia. The government, especially the ministry of communication and information technology, has regulations and policies. Online learning activities cannot be carried out because of network distribution or internet access to the maximum in some areas, especially in remote areas of the country. (Haryadi & Selviani, 2021). In addition, the cost is one of the problems faced, online learning by utilizing online media requires a strong internet network. So it

requires more costs to purchase data packages. However, compared to the offline learning system, the cost constraint is the same as the expenditure for transportation that must be spent every day. The obstacles experienced by students related to purchasing data packages were well-heard of by universities. Several universities collaborate with internet service providers or providers to provide affordable data packages to reduce costs and facilitate the online learning process.

Quoted from (Indrayana & Sadikin, 2020) BDK Jakarta Ministry of Religion of the Republic of Indonesia (2020), educators must be more "literate" in utilizing technology and keeping up with the times. Not only that, but educators must also be able to prepare variations and interesting learning strategies and, of course, in accordance with the character development of their students. Availability of various *online platforms* that can be used in online learning activities. Media use should be arranged in an attractive, effective, and easy way. Educators make learning plans by utilizing devices and media appropriately and in accordance with learning materials. Online learning also offers wide opportunities to learn new things, but educators must remain selective in choosing materials that are appropriate to the learning materials and learning methods.

To date, unlimited space and time and abundant sources of knowledge are the advantages of online learning systems. The independence of students also increases along with the implementation of online learning. The availability of applications such as WhatsApp (WA), Telegram, Zoom applications, Google Meet applications, and other social media makes it easier to carry out learning activities even though they are carried out at different places and times.

The State University of Malang, better known by the abbreviation UM, is a university located in 2 big namely Malang City and Blitar City. Established on October 18, 1954, previously known as PTPG Malang, then changed to IKIP Malang and is the oldest IKIP in Indonesia. UM's main campus is located at Jalan Semarang, No. 5 Sumber Sari, Lowokwaru District. Malang City now there are eight faculties and 1 Postgraduate

program. At least 31 Departments at UM cover 45 non-educational study programs and 75 educational study programs. The Physical Education and Health Study Program, which is included in the Faculty of Sports Science, is one of them. The Covid-19 pandemic also impacted the learning system at UM, so the Chancellor decided on an online learning system or *online learning models* (Malang State, nd). According to Circular Number 27.3.3/UN32/TU/2020 regarding the Extending Period of Prevention of the Spread of the Corona Virus (COVID-19) in UM. Before the pandemic, UM had implemented learning, but it was only applied as a companion learning system to reduce boredom with conventional learning systems.

Online learning is considered less effective for Health Higher Education students during the Covid-19 pandemic (Sundayana, 2020). Derwantara & Nurgiansah (2021) State that continuous online learning for PGRI Yogyakarta University students could be more effective, this is caused by repeated boredom so that it reaches a saturation point. Online learning during the COVID-19 pandemic was carried out suddenly and without preparation, and the learning objectives still needed to be achieved (Damayathi, 2020).

In connection with implementing online learning activities at the State University of Malang, the Faculty of Sports Science Study Program of Physical Education, Health and Recreation. Researchers want to research how effective online learning is, especially in Table Tennis courses. The need for more research on table tennis courses is one of the reasons for the author to carry out research.

## **METHOD**

The research design used in this research is descriptive research. The survey method was chosen in this study by not treating the correspondents. The subjects of this study were all PJKR students of the 2018 table tennis class FIK, UM, with as many as 180 students.

Data collection for research using instruments such as questionnaires, tests, and so on (Arikunto, 2002). Through this theory, quantitative descriptive research obtains data through *sampling* and then

analyses using statistical methods. The research was chosen to obtain student responses to online learning in Table Tennis courses.

Questionnaires were distributed for data collection by reading the respondents' answers to pre-determined. Determination of the measurement scale aims to let researchers know the value according to the respondents' answers when filling out questionnaires distributed online. Utilization of online media, namely Google Forms, as a research survey media.

Collection techniques (Winarno ME, 2013) research data from education and sports research through test and non-test techniques. The test technique aims to collect data by providing several questions and other tools on the research subject, the test technique is also known as measurement, in contrast to the non-test technique by not asking questions to the subject.

Collecting valid and accurate data requires proper test procedures. There are stages of data collection the initial step by determining the subject, determining the time for conducting the research, preparing the survey format, and preparing the result table format the next step is conducting the research through the presence of the test subject, explaining the procedure for administering the test to the test subject, distributing the survey test format, record the results of the tests that have been carried out.

The data obtained in this study were then analyzed manually using Microsoft Excel 2016. The data was processed using the formula stated (Sudjana, 2003) as follows:

$$P = \frac{f}{N} \times 100\%$$

Information:

*P*: percentage number

*f*: frequency being searched percentage

*N*: number of cases (number of frequencies/number of individuals)

100% : fixed number

The analysis results are then compared using a table of criteria from (Arikunto & Jabar, 2010) which has determined the assessment category to facilitate the conclusion of the percentage analysis results.

**Table 1.** Table of Classification Criteria

Percentage	Information
81 - 100 %	Very Effective
61 - 80 %	Effective
41 - 60 %	Fairly Effective
21 - 40 %	Ineffective
<21 %	Very Ineffective

## RESULT

The results of the research that has been carried out are as follows:

**Table 2.** Results of Student Learning Interest Analysis

No	Statement	Statement type	Score					Amount
			SA	A	JA	DA	SD	
			F	F	F	F	F	
1	I feel happy taking table tennis lessons online	Positive	10	37	47	22	3	1119
2	Online learning makes me bored and lazy to take table tennis courses	Negative	12	27	57	22	1	119
3	Online learning makes me excited to study Table Tennis courses	Positive	4	16	64	33	2	119
4	Online learning is not suitable to be applied to table tennis courses.	Negative	23	55	24	17	0	119
5	Online learning in Table Tennis courses is very interesting and innovative.	Positive	7	24	66	20	2	119
6	Online learning makes it difficult for me to understand the table tennis course material.	Negative	10	57	34	16	2	119
22	I need help understanding all the material in the Table Tennis course during online learning.	Negative	16	58	34	10	1	119
23	I need help practicing the table tennis material that has been taught.	Negative	15	50	34	19	1	119
Amount			97	269	360	159	12	897

### Description:

SA: Strongly Agree

A: Agree

JA: Just Agree

DA: Don't Agree

SD: Strongly Disagree

F: Frequency

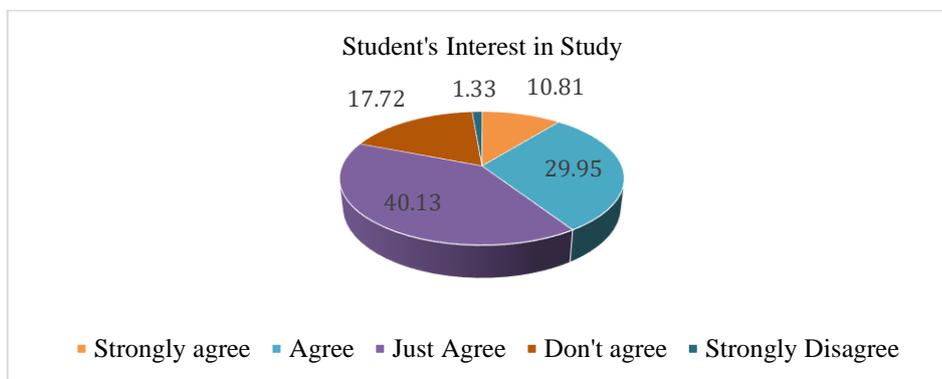


Figure 1. Student Learning Interest Analysis Diagram

After analysis, the percentage value is 54,23%. This percentage falls into the percentage range of 41-60%, so it can be concluded that students are quite interested in participating in online learning.

Table 3. Results of the Analysis of the Advantages of Online Learning

No	Statement	Statement type	Score					Amount
			SA	A	JA	NA	SD	
			F	F	F	F	F	
7	With online learning, I get the opportunity to learn table tennis anywhere and anytime without being limited by place and time.	Positive	21	49	40	8	1	119
8	With online learning, I find new knowledge I have yet to get from face-to-face learning in class.	Positive	18	48	39	13	1	119
9	Online learning makes it easier for students to do assignments with the help of the internet.	Positive	15	48	45	9	2	119
10	The teaching materials displayed through the website make me understand the material being studied better	Positive	6	39	53	21	0	119
12	Online learning makes the learning process more effective	Positive	3	25	54	34	3	119
20	Online learning makes me more active in table tennis learning	Positive	5	17	58	37	2	119
Amount			68	226	289	122	9	714

Description:

SA: Strongly Agree

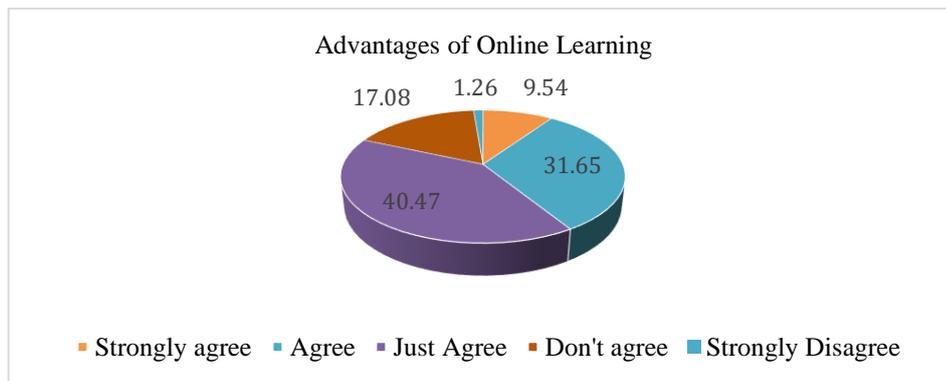
A: Agree

JA: Just Agree

DA: Don't Agree

SD: Strongly Disagree

F: Frequency



**Figure 2.** Analysis of the Advantages of Online Learning

After analysis, the percentage value is 61.63%. This percentage falls into the percentage range of 61-80%, so it can be concluded that online learning benefits students.

**Table 4.** Results of Online Learning Weaknesses Analysis

No	Statement	Statement type	Score					Amount
			SA	A	JA	NA	SD	
			F	F	F	F	F	
16	Online learning makes learning not conducive because not all students have the internet.	Negative	25	44	42	8	0	119
18	I need help concentrating when taking Table Tennis courses with online learning.	Negative	12	48	45	13	1	119
26	Delayed response due to poor signal strength interferes with learning	Negative	38	59	20	2	0	119
Amount			75	151	107	23	1	357

Description:

SA: Strongly Agree

A: Agree

JA: Just Agree

DA: Don't Agree

SD: Strongly Disagree

F: Frequency

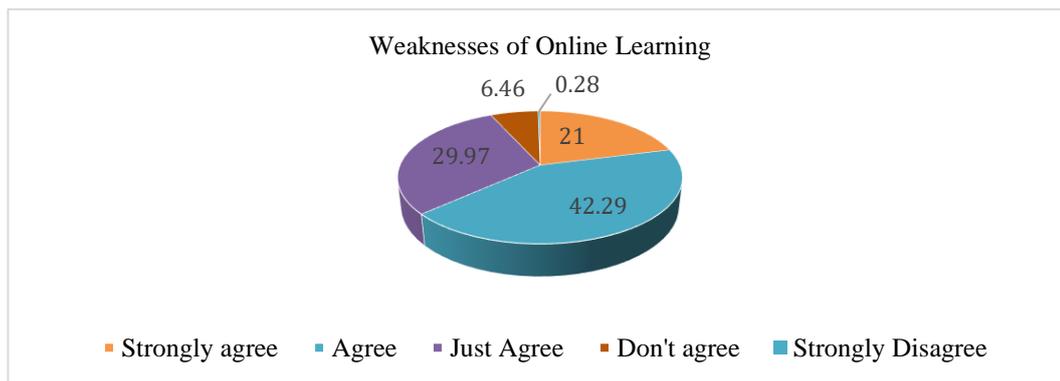


Figure 3. Diagram of Online Learning Weaknesses Analysis

After being analyzed, it obtained a percentage value of 44.53%. This percentage falls into the percentage range of 41-60%, so it can be concluded that students have many difficulties learning online.

Table 5. Results of Analysis of Online Learning Facilities and Infrastructure

No	Statement	Statement type	Score					Amount
			SA	SA	SA	SA	SA	
			F	F	F	F	F	
11	I have a laptop/computer or smartphone and adequate internet access to online learning.	Positive	24	66	24	3	2	119
15	Not all students are able to operate the facilities and infrastructure properly.	Negative	17	47	46	9	0	119
19	I need to have adequate facilities and infrastructure to practice table tennis material.	Negative	21	57	33	5	3	119
24	The cost of online learning is more economical	Positive	6	9	50	41	13	119
25	The preparation of technology and information facilities and infrastructure for online learning requires high costs.	Negative	13	46	50	10	0	119
Amount			81	225	203	68	18	595

Description:

SA: Strongly Agree

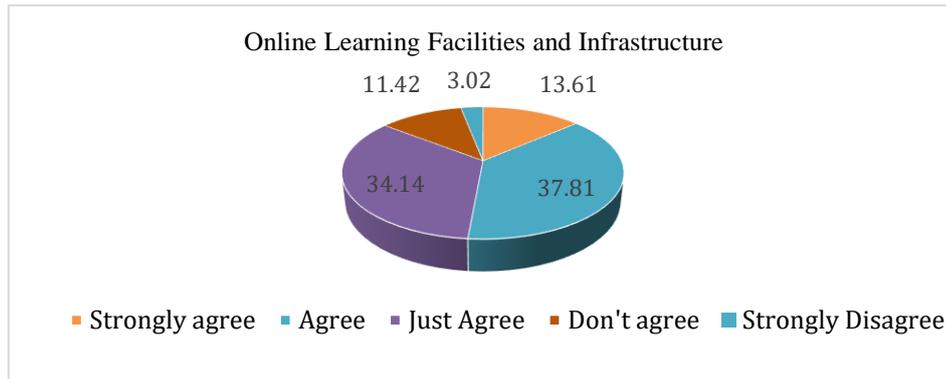
A: Agree

JA: Just Agree

DA: Don't Agree

SD: Strongly Disagree

F: Frequency



**Figure 4.** Diagram of Analysis of Online Learning Facilities and Infrastructure

After analysis, the percentage value is 54.58%. This percentage falls into the percentage range of 41-60%, so the conclusion is that the online learning facilities and infrastructure owned by students are quite good.

**Table 6.** Results of Interaction Quality Analysis

No	Statement	Statement type	Score					Amount
			SA	SA	SA	SA	SA	
			F	F	F	F	F	
13	In online learning, I interact more often than in face-to-face learning	Positive	4	19	40	53	3	119
14	Online learning makes the learning process individualistic	Negative	4	49	39	15	0	119
17	The younger generation now prefers online learning to face-to-face learning.	Positive	11	17	38	46	7	119
21	Online learning makes me often discuss with friends in Table Tennis courses.	Positive	9	44	39	27	0	119
Amount			28	129	156	141	10	464

Description:

SA: Strongly Agree

A: Agree

JA: Just Agree

DA: Don't Agree

SD: Strongly Disagree

F: Frequency

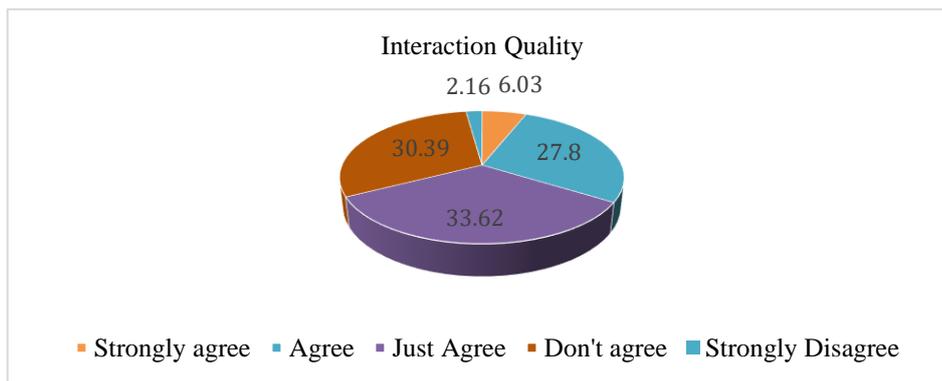


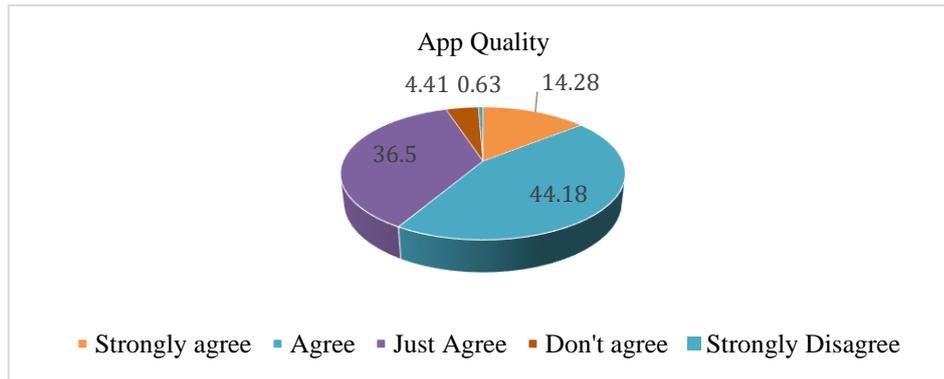
Figure 5. Interaction Quality Analysis Diagram

After being analyzed, the percentage value is obtained at 55.96%. This percentage falls into the percentage range of 41-60%, so the quality of interaction in online learning is quite good.

Table 7. Results of Application Quality Analysis

No	Statement	Statement type	Score					Amount
			SA	SA	SA	SA	SA	
			F	F	F	F	F	
27	With online learning, students get additional material in the form of an introduction to new software/software/applications.	Positive	27	64	24	4	0	119
28	Applications used during online learning are easy to operate	Positive	11	57	47	3	1	119
29	Applications used during online learning often experience trouble	Negative	12	34	60	12	1	119
30	Applications used when online learning supports learning activities	Positive	18	55	43	2	1	119
Amount			68	210	174	21	3	476

Description:  
 SA: Strongly Agree  
 A: Agree  
 JA: Just Agree  
 DA: Don't Agree  
 SD: Strongly Disagree  
 F: Frequency



**Figure 6.** Application Quality Analysis Diagram

After being analyzed, the percentage value is 69.70%. This percentage falls into the percentage range of 61-80%, so it can be concluded that the application effectively supports online learning activities.

After knowing the results of each sub-variable, then the results are processed into one to determine the effectiveness of online learning as a whole. The overall effectiveness of online learning is calculated by adding up the Likert scale scores of all sub-variables and then compared with the maximum total score of all sub-variables as follows:

$$P = \frac{\text{total score of all sub – variables}}{\text{, a maximum total score of all sub – variables}} \times 100\%$$

$$P = \frac{10,021}{(5 \times 30 \times 119)} \times 100\%$$

$$P = \frac{10,021}{17,850} \times 100\%$$

$$P = 56.14\%$$

With a percentage of 56.14%, the effectiveness of online learning is in the percentage range of 41-60%, which means that online learning is quite effectively applied to table tennis courses.

## DISCUSSION

The research that has been conducted on 119 respondents, from the results of the overall calculation of the sub-variables of the respondents, stated that online learning in table tennis courses is considered quite

effective. These results are in accordance with the research results of Puspitasari et al. (2018) the use of learning media on students' learning motivation has a significant influence. Similar to Nadziroh's research (2017), online learning effectively improves the quality of learning because the learning process is not limited in time and space. To improve the effectiveness of online learning, it is necessary to support facilities and infrastructure that support teaching and learning activities, such as computer gadgets, applications, and internet networks that are used during learning activities and can be used without any limitations of space and time (Gikas & Grant, 2013).

The effectiveness of the online learning process for the table tennis course in the Department of PJOK, UM, has been studied if the application of the online learning system provides a new and more challenging experience compared to the offline learning system. Freedom in accessing learning media and absorbing learning materials is higher than in conventional learning. Meanwhile, according to (Noviansyah, 2015), *blended learning*, or a combination of online and offline learning, creates a more active learning atmosphere. It makes learning methods more fun, so students are interested in participating in each learning process. There is a significant difference in influence between blended learning and full online, and data proves that blended learning has a better effect than full online (Fantiro et al., 2022).

According to research results, a flexible learning system is preferred by students because they can attend lectures from anywhere. Not only that, but lecturers also facilitate virtual classes that allow students to join and be accessed easily. So that student are given the freedom to choose the courses they will take and sort out the tasks that can be done first. Based on (Sun et al., 2008) if the flexibility of time, method, and place in the online learning system influence student satisfaction in learning. Meanwhile (Ndrayana & Sadikin (2020) stated that students feel more comfortable conveying ideas and questions during the learning process. Virtual learning also reduces psychological pressure compared to conventional learning

systems. This also reduces students' awkwardness when participating in an online class. Communication is comfortable, according to Lee & Owens, (2000), if communication takes place without any physical barriers and time and space constraints. In the end, students' reduced feeling of awkwardness makes them able to express and play an active role in learning activities.

## **CONCLUSIONS**

Conclusions from the research This is the process of learning table tennis courses that are carried out online, providing quite effective results with indicators of student interest in learning, advantages, and disadvantages of online learning, online learning facilities, and infrastructure, quality of interaction, and quality of applications

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