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Research Findings on Differences in Academic Achievement between Online and Conventional Learning: A Review of Systematic Trends

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Abstract

This literature review study describes the differences in student learning achievement between distance approaches with conventional or face-to-face approaches during 2020 when the COVID-19 outbreak hit the world. We have collected data electronically on many databases such as Google Scholar, ERIC Publications, and others. Because this study is a literature review system, we analyzed it qualitatively using the data coding approach, extracting, in-depth evaluation, interpretation, and withdrawal of the population as accurate, valid, and trustworthy data findings. For the data to be more recent, we have systematically chosen between publications in 2010 and 2021. Brought by the qualitative descriptive design, the results include online learning methods that have proven to be more effective in increasing student motivation on student's learning achievement during schools closed due to the pandemic. Compared to learning the traditional way, the online learning method is indeed exciting, practical, fun, efficient, personalize, safe from worrying about being attacked by COVID-19. Thus these findings add knowledge to many parties.

Keywords: *Research Finding, Academic Achievement, Online, and Traditional Learning, Systematic Review*

INTRODUCTION

The Covid-19 outbreak has stopped teaching and training activities in schools. (Sahu, 2020; Putra et al., 2020; SUDARMO et al., 2021). In response to the spread of the virus getting out of control, the public authorities, through the Ministry of Education, chose to move the study rooms home with the help of the internet. This program is called the remote education program.

Comprehension and students use web tools and organization to receive material from teachers in schools. These policies are passed on to heads of general training workplaces, heads of regional / city education offices, heads of further education administering organizations, heads of tertiary institutions, and school managers throughout Indonesia. The Ministry welcomes different lessons in the area of instruction to move together to deal with Covid, which WHO has officially designated as a worldwide pandemic to find ways to prevent the spread of the virus among campuses and school education units. (Liu et al., 2020; Xiong & Peng, 2020). For this distance learning policy, we would like to examine the experts' opinions as outlined in their publication papers, especially efforts to increase student academic achievement while learning the online method. (Herliandry et al., 2020; Aslan et al., 2020).

The public authority's approach of forcing a distance learning crisis so schooling proceeds together to avoid the danger of COVID-19 from the present status that jeopardizes understudy security is in desperate need of cooperation from all gatherings, including how strategies are upheld by interesting learning apparatuses. (Wang & Wang, 2020; Shammi et al., 2021). The public position imparted trust through the appearance of force from the Ministry of Education and Culture shipped off schools and colleges. Notwithstanding, two round letters have been given by the Ministry of Education and Culture concerning COVID-19. To start with, Letter Number 2 of 2020 concerning the Prevention and Handling of Covid.- 19 in the Second Ministry of Education and Culture, Circular Number 3 of 2020, concerning the Prevention of an erupt in the School Training Education Unit moreover happened extraordinarily rather than before years, before the Covid pandemic. Regardless, different difficulties ought to be searched for the suitability of training in this country to keep up the last idea of learning. (Kohan et al., 2020; Sneyd et al., 2020).

The issue of improving learning outcomes during the pandemic must be faced by most educational activists identified as a tough and challenging task because of the comprehensive learning framework; changing from the conventional way to the small way, for example, power organization the web. Moreover, many families do not have the tools to learn such learning. (Sutia & Sagita, 2020). According to the Indonesian Child Protection Commission (KPAI), the web network received as many distance learning complaints, over the past three weeks, from March to April 2021. Most of the complaints were identified by the seriousness of the task assigned by educators to students. Students flooded protests regarding various instructor tasks considered heavy and draining and the quantity of the web. (RI, 2020). It is indicated that those observing learning activities during the pandemic, both human resources and innovation, are considered not yet upholding the use of distance learning. This is very natural considering that everyone is not ready for distance learning conditions. For example, educators are not ready because they do not have skills in many regions in Indonesia. (Simatupang et al., 2020). They said the effectiveness of the distance teaching process during the pandemic faced a significant obstacle where many teachers were not ready with technological skills.

Likewise, students in higher education are required to have access and be able to enter lectures online. Although the web network is also minimal, the higher education committee is also required to be more proactive from schools where the knowledge and expertise in media online learning is better. (Laksana, 2021). Their academics cannot access a tertiary institution that cannot, or its portion must continue to learn to adapt themselves to pandemic issues. Likewise, legislators should ask the Ministry of Education and Culture to develop children's needs for distance learning. (Aboagye et al., 2021; Rotas & Cahapay, 2020). As indicated, there should be options for understanding the needs in each area. Likewise, Internet packets must be distributed free of charge to students in each region because not all residents can be motivated to do distance learning. The reason is that they do not have supporting devices such as gadgets.

Guidance on the needs of students who do not have cell phones cannot receive government subsidies. Others need to be concerned about supporting foundations, especially the web. Legislators must tell and call the government to get attention immediately; not many areas outside Java have a web foundation, especially areas that are blocked, bounced, and farthest. Since the foundation questions in that space are beyond the reach of the web framework, remote learning cannot force it. Likewise, the vice president's voice who commands the line ministries needs changes in addressing

issues related to education during the pandemic, which must be prepared to complete support for remote discovery that began to be carried out during the Covid-19 pandemic. (Ali, 2020; Aristovnik et al., 2020). Responding to the pandemic that has been going on for one and a half years, now is the time to start the Learning Awakening Movement entering a new era of normalization with the launch of the Learning Awakening Movement, which is needed to anticipate the lost generation due to the Covid-19 pandemic which is still ongoing. (Niemi & Kousa, 2020; Bond, 2020). There are several regions, including on the island of Java and outside to Nusa Tenggara that need assistance to run long-distance methods. Therefore, the government encourages all sources to help the movement immediately. Because, if not immediately, he assessed that there would be a lost generation. For example, some students have to buy their study internet packages for internet quotas, explaining some regions in Indonesia. Of all these posts, we will encourage resource persons, especially those who have the advantage of wanting to help. (Blades, 2020; Wangge & Webb-Gannon, 2020). The priority of the outer regions does not have to be far away; in many islands from Aceh to Papua, there are already half-dead, the lost generation can be done if we do not handle it immediately. If the government can overcome such obstacles, rest assured that the Indonesian generation will continue to excel even though they experience obstacles due to the pandemic. (Indrawati, 2020).

For the sake of increasing and catching up in remote areas, there have been some community initiatives to open a coordination center as a driving force as well as opening 2,117 free Wifi, and will soon follow in various places, in 24 provinces and Kubupaten, according to media reports that appreciate the many parties involved in helping students in Distance Learning during the Covid-19 Pandemic. According to this, the assistance is in the form of assistance to students in learning and distributing remote learning support tools in the form of smartphones. (Churiyah et al., 2020). Therefore, we appreciate the initiatives taken by people who care about education who donate, sharing used smartphones, including volunteering to volunteer as companions. This is what happens in the field. As a result, there are environmental projects that ultimately carry out tasks where parents at home are fully able to help these volunteers. (Supriyanto et al., 2020).

One of the community members who help make distance learning a volunteer in the community is a Bidik Misi scholarship recipient. Progress is being carried out; 5,976 volunteers who receive Bidik Misi scholarships are willing to volunteer as a token of appreciation. It is instrumental. Fajriyah, 2021 said that student interpersonal communication and self-actualization during the pandemic are very potential. He asked the Ministry of Education and Culture to coordinate assistance from various sectors of society in distance learning. One of them is promotion assistance for communication providers with internet data packages. "Because not all parents know that there is a promotion that provides a quota for students. With the hope that there will be a Ministry of Education and Culture who can coordinate this down to the regional level. According to Ningsih et al., (2021) the role of guardians and parents is vital in supervising and motivating children's learning during a pandemic in remote areas so that the acceleration of learning achievement is maintained during the peak period in regional areas.

In order to be right on target, and those who take advantage of it are students who have difficulty accessing and buying quotas. It needs good coordination. (Oyebode et al., 2021). Assistance from the government during the Covid-19 pandemic, the government is reviewing the provision of credit subsidies for teaching staff and students to support the distance learning process. According to the Minister of Communication and Information, the subsidized internet credit package for teachers and students will start in September 2020, which is very helpful for students. Therefore, he hopes that changes to the budget executor list (DIPA) can be carried out quickly so that subsidies can be allocated. True to subsidized credits to help distance learning, electronic distance learning is essential and extends its reach. It is hoped that the DIPA modification can be completed quickly and will be rolled out in September so that learning achievement can continue to be improved, considering the traditional face-to-face method cannot be implemented. (Hertanto, 2021).

According to Rudi Natamiharja, (2020) credit subsidies will be provided for four months or December 2020. The government is currently estimating the number of subsidies given to students, teachers, and lecturers. Data is urgently needed and is estimated to be worth IDR 7.8 trillion, with

additional benefits mitigated. Ministry of Education and Culture, which houses the work unit. The government said it supports the Ministry of Education and Culture in realizing data awards from state funds for the education climate. In collaboration with cellular operators, the Ministry of Communication and Information Technology is responsible for completing telecommunications networks in this situation. Talking with us, mobile operators have provided data package incentives equivalent to IDR 1.9 trillion per month for students and students who have managed themselves since the beginning of the Covid-19 pandemic. (Watrianthos et al., 2020).

Then many people ask whether students are overwhelmed by continuous distance learning? Of course, there is 6 Innovative Student Learning Models. (Azzahra, 2020). One of them is easing the School Operational Assistance fund, allowing education units to use BOS funds to offer internet credit quota to teachers and students. The Minister of Education previously stated that the government offered IDR 9 trillion internet quota subsidies for scholars, instructors, students, and lecturers in the Distance Learning era. During a working meeting with the House of Representatives at Commission X at the Senayan Parliament Complex in the era of distance learning, the Ministry said this. With the hope that the government will support learning for pulse budgets for our students, that is why the government has announced that this year's budget has been approved at IDR 9 trillion. (Pakpahan & Fitriani, 2020).

In light of the Circular of the Ministry of Education and Culture Number 40 of 2020, alluding to the execution of instructive approaches in the crisis time of the spread of the Covid infection, the effect of the COVID-19 taking in the measure is completed from home online in academic units utilizing different learning sources through correspondence, carried out in 2020. (Romadona, 2021). Instructors utilize online media like Whatsapp, Google Meet, Google Form, and different structures to distance learning. However, this system requires the use of unique design and learning techniques. Distance learning schemes that have been adopted in classrooms at all stages of the school require policy evaluation. According to the authors observations, distance learning is ineffective and maximized when applied in schools with inadequate infrastructure. This is because technology-based distance learning requires unique planning, implementation, and evaluation. (Yudhistira & Murdiani, 2020). Students need special attention during the implementation of distance learning, especially the infrastructure used, good internet networks, and self-motivation, in order to be able to take part in the independent learning process.

Uneven internet network access, inadequate equipment, high quota costs, unequal mastery of science and technology among educators or teachers, is the unpreparedness of implementing the teaching and learning process using the distance learning method, and the difficulties of parents in accompanying children are examples of learning long-distance. (Novita & Hutasuhut, 2020). These challenges and obstacles faced during the distance learning process are children involved in teaching and learning activities. For this reason, the government has provided several solutions, including Circular Letter Number 15 of 2020 concerning Guidelines for Implementing Home Learning in an Emergency for the Spread of Covid-19, flexibility in using BOS funds to subsidize teacher and student qualifications, and flexibility in utilization. BOS funds to subsidize the qualifications of teachers and students. (Mulrajil et al., 2021). Even with a limited quota, the Education Office in each province has collaborated with organizers to conduct training on the use of science and technology in distance learning to improve the quality and capacity of teachers.

Likewise, during this pandemic, the role of school principals in encouraging educators and science and technology education personnel is vital for the success of this distance education program. (Fatimah, 2020). The quality of services provided by these educational institutions to students can be improved by providing training to educators and education personnel about the teaching and learning process through webinars or workshops. Collaboration between schools and internet service providers to improve internet services in schools to answer the problem of limited facilities and infrastructure to support science and technology in schools to improve quality is essential. (Mawati et al., 2020). The critical role of school principals in working with providers in the service process of providing quota subsidies is a benefit that can ease the responsibilities of parents and students so that achievement is maintained during the pandemic period.

As expressed before, parental help during distance learning guardians should invest energy with their kids when associated with learning exercises. Direct by asking the youngster for the plan for learning and participating in checking on finished work. During the distance learning measure, the ideal approach to control understudies is to take the time. As per the writers' decisions, the new design of distance learning is now a test for instructors, guardians, and understudies. If the distance learning system is another choice, the public authority should zero in on the money-related situation of gatekeepers and understudies impacted by the Covid-19 pandemic. As shown by the maker, the distance learning structure introduced since the COVID-19 response in explicit spaces has lately been great, yet some have not been out and out successful. (Watrianthos et al., 2020).

Learning Outcome During Pandemic

Since December 2019, the COVID-19 disease outbreak has threatened the world and has become the "global enemy" of humanity in this world. (Adiputra, 2020; Sari et al., 2021). The virus from Wuhan, China, has a profound impact on all aspects of human life. The pandemic is severe, and deaths are uneven. As a result, everyone will be diagnosed with an outbreak and will die as a result. However, everyone's dream is to be the best in every field, especially certain things. As a result, people rush to fight with all their might to get the best results so that their lives are remembered and appreciated. To remember them without the help of others, their relatives, and their immediate environmental influences. Getting the right results during a pandemic, and also right now, is not easy. Because the problems he encountered were very different from those suffered before the pandemic outbreak. (Zendrato, 2020), direct contact with different parties is minimal, so that the interaction of achievement is difficult to run smoothly.

In education and teaching, the specter of COVID-19 has brought a change from eye to eye, looking for ways to learn distance that are established locally. (Azhar, 2020). Likewise, almost everything is handled on the web, from current student confirmation systems to merging school environments, midterm, and end-of-semester exams, and publishing report cards to services. Graduation parade. Whatever is being done to break the chain of the spread of the virus, which does not indicate abating again and almost wild. Combat the disease outbreak; public authorities have initiated an inoculation program for all citizens free of charge. However, this technique takes a long time. (Arsita et al., 2020). This is because it should be applied throughout Indonesia, and immunization is carried out gradually on a scale of need for prosperous workers on the edge of an epidemic antidote bleeding.

The Ministry of Education and Culture, on the other hand, continues to make efforts to make mentoring more accessible to students, both students, and university students. As indicated by Muhibbin Syah, (2006) three critical factors influence student achievement: 1) internal elements or elements that exist among recognized individuals, which include: 1) original segments, such as affluence and disadvantages; 2) mental components, such as understanding, thoughts, interests, blessings, perspectives, progress, and planning; and 3) external factors, which combine components that are outside the individual who is learning. (Fadila et al., 2021). Second, external, which includes: 1) family factors, for example, how supervisors teach, family interactions, home environment, family financial condition, parental game plans, and social stability; and 2) school environmental factors, for example, teacher performance techniques, learning programs, teacher-student relationships, and students.

Third, there is a way to handle the learning part, which is the type of student learning effort that combines the tools and approaches used by students to carry out learning activities according to the topics given by the educator. The Minister of Education and Culture has implemented four main procedures in 2021 to advance student achievement in teaching and learning measures. Mechanical frameworks and advancements are the central systems; second, enforcement, cycles, and financing are strengthened; third, organization, climate, and local areas are strengthened; and fourth, teaching, teaching methods, and assessments are strengthened. In addition, during the COVID-19 pandemic, the Ministry of Education and Culture made leaps and bounds that were carried out quickly and in an

extensive scope. Pandemic is not an obstacle for us to continue to make leaps in educating the nation's life. (Brown & Luzmore, 2021).

As we explained at the top, the Ministry of Education and Culture has made several leaps forward, including assisting the Affirmation of School Operational Costs and Performance attractively to reduce the impact of monetary depreciation in open and non-public schools. The emphasis is on the areas most disadvantaged and hardest hit by the pandemic turmoil. So the school can feel the effects. During the pandemic, the Ministry of Education and Culture also presented educational plans and learning modules in unique conditions to reduce learning challenges. The depiction of movement-based learning for educators, guardians, and students is remembered for the substance of this learning module. (Hartati, 2020). Using this module, students want to learn more effectively, and the instructors and guardians want to follow and survey their children more precisely to achieve the results.

With the support of the Ministry of Education and Culture also provides maximum support so that students can continue to learn well during the COVID-19 pandemic. (Asvio, 2021). A new tuition waiver or UKT may be offered to students affected by the pandemic by higher education representatives. Furthermore, students who are on leave from college or do not take SKS, such as those waiting for graduation, cannot pay tuition. Among other things, the efforts of the Ministry of Education and Culture to help student achievement during the pandemic have been and will continue to be carried out. (Wartulas, 2021). Of course, there are always deficiencies that need to be addressed in the future. However, what is clear is that the state's responsibility to uphold the constitution in order to inform the life of the nation must be fulfilled continuously. Therefore, the assistance of both parties in the spirit of cooperation is still needed. So that our teachers, the next generation of national leaders, will continue to be successful in facing the pandemic and hopefully so. (Karimi & Efendi, 2020).

METHOD

Many findings regarding differences in learning outcomes and achievement between distance learning during the response to COVID-19 and pre-pandemic learning outcomes have motivated the authors to gain a deeper understanding through systematic trend reviews. So on that basis, we run it by choosing a qualitative design by relying on secondary data from the published Google scholar and ERIC data-based publications between 2010 and 2021. With valid and reliable criteria. In their analysis of health workers' interactions during the COVID-19 crisis in China and countries plagued by pandemics, (Y.-C. Liu et al., 2020) using a qualitative study model of metadata.

FINDINGS AND DISCUSSION

This section will report the findings of a thorough search of ten international publications that address the benefits and drawbacks of distance learning in different contexts and countries in response to COVID-19. The first study from Cimermanová, (2018) examined the impact of teaching methods on academic success in different teaching methodologies. Scientists have identified increasing income in student types as one of the core factors influencing overall adaptation. The results showed that learning styles and types of teaching had no impact on scholastic achievement. This exam uses the accommodation test for 81 fifth-year students and pre-administrative English instructors. Investigating the difference between the two paths did not show any significant findings. This means that this study did not find significant results from implementing online learning during the pandemic response.

Now, examine the studies of Joksimović et al., (2015) about distance learning, namely the effect of communication following scientific achievements. Dissecting 204 studies from 29 courses over six years, this examination points towards cultivating a current understanding of the idea of this relationship. Time spent on learner-framework cooperation has steady and beneficial results on learning outcomes. Several students - the content connection was negatively associated with the last course review. The investigations also pointed out the importance of distance teaching and individual course settings for the upheld types of internet connections. The results may summarize the need for advances in institutional-level technology and programs for teaching that will promote academically

attractive ways of dealing with collaborative planning and management on web and distance learning settings to maximize student achievement outcomes. Studies like the above have also been widely studied by Simanjuntak & Kismartini, (2020) namely how to respond to the basic education process and remote learning policies during the pandemic response in Central Java.

Meanwhile, Broadbent, (2017) study compared web-assisted learning and mixed student traditional self-learning procedures and scholastic achievement. Self-learning procedures are concerned with conducting student classes on the web and in diverse settings during a pandemic. Although there were some differences in individual prescient scores across enrollment states, the leading indicators of self-study of scientific execution were essentially the same. The results of their review show the general significance of using board time and elaboration methodology, while distance learning of practical procedures is comparable to the evaluation of scientific subjects for both modes of learning. Studies have shown that there are differences that are not far between learning the online method for the COVID-19 response period, learning the old way face-to-face. A similar study was also carried out. (Pujilestari, 2020).

Crampton et al., (2012) inspected the cross-disciplinary connection between the execution of learning and admittance to online resources by distance learning understudies. Investigation centers around understudies who focus on early first-year subjects in whichever way from two exciting assets. An assessment of web access data from the board learning framework shows that understudies who get the most resources score high. We conjecture that these resources lead understudies to spend more "time on tasks" and work with more powerful learning styles. We prescribe that upholstery focus on the worth of the resources and how they are best used to improve educational execution. Comparative investigations were likewise done. (Prasetio et al., 2012).

McLaughlin & Rhoney, (2015) understand the correlation between intelligent e-learning introductory instruments and traditional download gifts used to address reverse neurological pharmacotherapy. Recently, more and more instructors are researching the use of informative innovations to improve student learning outcomes. The viability of bright classroom introductory devices has been assessed inadequately for neurological pharmacotherapy courses. The results of this exam recommend that commitment to brilliant online introductory instruments is identified with student learning in the neurological field—pharmacotherapy class. The first time clock entered online shows a strong positive association with test performance. Online learning has a positive effect on the implementation of student learning in pharmacotherapy courses. This kind of study has also been reviewed by Jamaludin et al., (2020).

Then, the discoveries of Al-Qahtani & Higgins, (2013) from their investigation of the effect of ordinary, blended, and e-getting the hang of learning on understudy accomplishment in additional instruction were verification. This investigation investigates the effect of e-learning, blended learning, and homeroom instructor learning on understudy accomplishment. No critical contrasts were found between e-learning experiences and traditional learning. The mixed learning strategy has a significant impact size of 1.34 (Hedges' *g*) with an irrelevant impact size ($N = 148$) as far as it is achieved.

The last evidence we got was from the Castle & McGuire, (2010) study, namely through the study of student self-assessments on the web, mixtures, and traditional face-to-face learning conditions. Implications for defensible instruction delivery. Online delivery may offer significant advantages in achieving a variety of identifiable destinations with maintainable instructions. Understanding the various foundations can achieve instructive freedom, taking into account the massive spread of the school. Web-based learning techniques are generally lower carbon, providing additional operational advantages for online schools. The expansion of this work links the practical parts of online transportation with the overall management achievement in transport instruction techniques. There is a closeness in the outcomes, to be specific, an investigation by Ahmad, (2020) which evaluates elective techniques for distance getting the hang of during the crisis time of the spread of Covid sickness in Indonesia.

Khalid et al., (2020) dissected the connection between Self-Directed Learning (SDL) and the scholastic accomplishment of college understudies with instances of online distance learning and conventional colleges. The request is planned to exhibit the connection between self-facilitated

learning and logical accomplishment. Data was examined utilizing the Pearson r t-test to discover connections between factors. The findings show a big difference between online and traditional college students. Exams recommend that using teaching methods to create students' ability to self-direct their educative learning cycles can be helpful for self-guiding students in online learning interactions. A similar study was also carried out by Yuliana, (2019) namely studying independent learning-based learning methods in nursing education through a publication review.

Iskandar et al., (2018) examined the effect of multimedia learning on student cognitive test results. Menurutnya learning media refers to visual and auditory learning and data innovation such as PC or Android. It combines at least two elements, such as audio, video, text, and images. This method of investigation uses a test that compares two different treatments. Students majoring in informatics architecture STMIK AKBA Indonesia semester 2016/2017 who are currently taking advanced mechanics courses are the subject of this research. The results showed that: (1) the use of remote learning media can improve student achievement in advanced mechanics courses. We also found similar studies where learning using digital applications can increase student learning outcomes compared to the way of the bell; face-to-face teaching. (Ratiyani, 2014).

Following are the findings of Sun & Wu, (2016) through a study of learning achievement and educators - student communication in the learning room is reversed and ordinary. The study explores the adequacy of two strategies that demonstrate learning feasibility. Open CourseWare is incorporated into the reverse and distance learning homeroom model. The inverted homeroom model considers satisfactory student connections, said the creators. The consequences of this examination could provide some perspective for future investigations into inverted study spaces and Open Course Ware, they said. It is proposed that educators equip students with a mix of OCW and inverted study spaces.

CONCLUSION

Finally, we can summarize that this study aims to understand the difference between conventional or in classrooms learning and the digital learning approach during the outbreak pandemic response in Indonesia. After this study ends, we can confirm that the goal has been achieved where the majority of the papers we have studied prove the effectiveness and complexity of learning problems since the COVID-19 disaster came, with several problems occurring, government policies to repatriate students to study remotely have been carried out in many countries and context. So there is no doubt that there is an academic of productivity and technological excellence in motivating students to excel even if they learn as much as the threat of COVID-19.

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