

## PalArch's Journal of Archaeology of Egypt / Egyptology

### THE IMPACT OF COVID-19 ON THE INDONESIAN SCHOOL LEARNING PROCESS

*Aris<sup>1</sup>, Rivo Panji yudha<sup>2</sup>*

<sup>1</sup>State Islamic Institute of Religion Syekh Nurjati Cirebon,

<sup>2</sup>17 August 1945 University of Cirebon West Java, Indonesia.

[<sup>1</sup>Arissuherman60@gmail.com](mailto:Arissuherman60@gmail.com)

**Aris, Rivo Panji Yudha. The Impact Of Covid-19 On The Indonesian School Learning Process-- Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(3), 705-717. ISSN 1567-214x**

**Keywords: Covid-19, Schools, Education**

#### **ABSTRACT**

The Covid-19 pandemic is now beginning to penetrate the world of education. The Ministry of Education and Culture (Kemendikbud) is currently based on official information, ready for all scenarios, including encouraging online learning for students. This article aims to explain one side of debatable opinion on a hot issue. This study collected data from three teachers in a Cirebon city school. Chairperson of the Cirebon city education office and a senior teacher. Semi-structured interviews via the Zoom meeting application are used to gather views on what these specialists think will be the effect of COVID-19 on students' general performance in the learning process. The reality shows that the dynamics of learning in Indonesia are currently being disrupted by the Covid-19 outbreak which has impacts including; 1) schools are transferred to homes through an online learning process; 2) there is a transformation of technology-based learning media through the use of Whatapp Group, Zoom, Google Classroom, WebEx, Youtube, and TV channels (TVRI); 3) adjustment of learning methods; 4) adjusting the learning evaluation to determine the standards for class promotion and graduation; and 5) demands for collaboration between parents of students at home as a substitute for teachers in controlling children's learning.

#### **INTRODUCTION**

The Covid-19 pandemic is an obstacle for all people in the world and this is a health crisis for humans. In the world of education, the Covid 19 pandemic has also had a tremendous impact. Many schools in the world were closed to stop the spread of covid-19, based on a report by detik News on March 7, 2020, dozens of countries closed schools to prevent the spread of the virus. At least 290.5 million students around the world are disrupted by their learning activities because schools are closed. Indonesia is the second country with the highest

spread of covid 19 with a surge of over 1000. Indonesia is in 31st position out of 40 countries with the highest number of cases in the world. (tribunnews, 14-15 June 2020).

Based on this data, this shows that Indonesia is in a critical state of health, so there needs to be an appropriate solution to stop the spread of Covid-19 so that activities can run normally again, especially for the world of education.

Research conducted by Michael McAleer concluded that global health security capabilities are in 195 countries. The GHS index lists the countries that are best prepared for an epidemic or pandemic. While high-income countries report an average score of 51.9, the Index shows that collectively, international preparedness for epidemics and pandemics is still very weak (McAleer, 2020).

The impact of Covid-19 on the world of education is very large and is felt by various parties, especially teachers, school principals, students and parents. Due to the high spread of covid-19 in Indonesia, universities and other colleges have been closed, including elementary schools. With the closing of schools, the government took steps so that the learning process was not left behind and students still received the right to gain knowledge. Therefore, the next government decision is that the learning process will continue but not face-to-face but online. Many organizations use delivery methods for employee training with online learning (Simmons, 2002).

Since then there have been efforts to prevent COVID-19 in the form of social & physical distancing in various lines of life. This policy is based on the number of victims who are increasing day by day and the spread of the virus is increasingly difficult to control throughout Indonesia. Through the Circular of the Minister of Education and Culture of the Republic of Indonesia No.3 of 2020 concerning the Prevention of COVID-19 in the Education unit, all higher education in Indonesia, several universities have taken firm steps on the government's appeal to carry out learning activities from home.

The difficulty of handling Covid-19, so that many state leaders take steps to stop its spread and even have to determine very difficult policies, but they must be carried out by the government in each country, one of the policies that has a very big influence on various aspects of life is limiting social interactions, where this limitation will certainly have a large effect on the pace of the economy, the stagnation of the needs of the main needs of the community, causing the effect of the number of companies whose workers are dismissed so that automatically unemployment occurs, with a high level of economic need but no producer, it is impossible for the state to pay all the needs of its people. which is so much like Indonesia.

In the field of education, it has also been greatly affected, because in order to stop the spread of Covid-19, all students and teachers are learning from home, which is suddenly done without any preparation. The unpreparedness of all elements in education is a big obstacle too, the change in teaching and learning from face-to-face or offline (offline) to online (online) requires the readiness of all elements, starting from the government, schools, teachers, students and

parents It is admitted that the government loosens the education assessment system according to emergencies as long as learning can continue without being burdened with competency attainment. So that many teachers use from utilizing existing technology.

From the results of the survey and analysis conducted by the author through monitoring the evaluation of distance learning in the target schools, there are several main factors that become obstacles in implementing learning using technology, including: 1) mastery of technology, 2) limited infrastructure, 3) internet network, 4) financing.

Infrastructure difficulties arise after online learning is implemented, distance learning must have adequate facilities, and many have telephones but do not support the internet or the necessary applications so that both schools, teachers and students need facilities and infrastructure that really support. Meanwhile, in reality, it is very difficult to meet basic needs in a situation like this.

The need for an internet network, many schools, teachers and students find it difficult to get a stable internet network and some are still not covered by the network, the geographical location of where teachers and students live are in a position that is difficult to get an internet network even though there is one, often not stable so that it becomes obstacles that cannot be separated from online mode learning that are now widely chosen by schools.

Funding, of course, is very attached to all of these series of obstacles because in the provision of infrastructure, financing is the main, the quota which is the primary need imposes on family financing, many teachers, parents are not ready to add new costs to procure quotas so that it hinders the smooth running of learning long distance. Online learning is not new, since before that many teachers have also used methods using online but the problem is not that, the problem lies in the sudden increase in costs and there is no effort, so this corona really has a very negative effect on the world of education.

Learning using technology today is inseparable from life, technological progress does have a negative and positive influence, such as during the corona pandemic, technology is needed, technological literacy is important to be controlled by all elements. Especially in the use of technology because there are so many learning resources that can be used by the learner so that a learning problem model is available in the technology.

It becomes easy for parents to educate children about subject matter as long as parents are involved in the process of using technology tools because from there parents learn a lot about learning materials, the use of technology and about the progress and decline of their children's knowledge.

Education is the responsibility of parents, so it is clear that those who have to be involved a lot are parents, from mastering technology, provision of infrastructure, internet quota and mentoring their children during the educational process using online modes.

Teacher awareness in this online mode of learning that the presence of teachers does not transfer the knowledge they have but teachers become facilitators in learning, the presence of machines is not a competitor for teachers in teaching but teachers must master technology so that technology and teachers become very effective partners in making innovation-learning innovation.

After a long period of time parents accompany their sons and daughters while studying from home, they feel the importance of the presence of teachers, awareness of students who feel it is important to have a teacher accompany them to learn, and awareness of many more about the importance of teacher presence in any situation, now technology can replace teachers but technology They do not have the feeling that only humans (teachers) have, so the survey results show that they need a teacher. Learning offline through face-to-face is their choice if there is no pandemic like when the corona attacked us today.

Schools, in this case the government must be prepared for a change in the learning paradigm, because previously there were many school activities that were considered important and could not be missed, so in this pandemic condition many were dismissed such as the National Examination, then the government must also prepare facilities that support learning cannot be separated from technological advances, the government must start and continue to train teachers to master technology so that later there will be many innovations in learning carried out by teachers, or maybe the government must be prepared to be ready to determine the direction of policy, for example learning using online mode continues to be applied but in certain schools, and there is no impression it is held like a national exam.

A paradigm shift will inevitably occur, which will certainly have both negative and positive effects, so all of us, especially the elements of education, must be prepared, but remember that we are human social beings where social interaction cannot be separated.

Student assessments move online and there is a lot of trial and error with an unpredictable system, even though many assessments have been canceled. The second is the long-term impact. Many community groups in Indonesia will be exposed to the long-term impact of Covid-19. The long-term impact of education is an aspect of justice and an increase in inequality between community groups and between regions in Indonesia

While the negative side of the distance learning system, one of them is that not all students have the same level of understanding. For students who are diligent and easy to absorb information, online learning methods will be easily absorbed, but for those who are not familiar with this method, it is likely that they will have difficulty not only absorbing online learning delivered by the teacher but also the ability to adapt to technology applications used in learning activities. teaching. Facts in the field, the obligation to study at home is a serious obstacle, especially for students from economically disadvantaged circles. They often complain about running out of internet quota packages. In addition, technology can build instant attitude from its users.

The implications of the pandemic for summative assessment are also of further concern for students. With this online method obviously unusable in the current situation. With the shift to online learning and exams seemingly inevitable for all students in Indonesia this year, many are questioning the readiness of schools and students for this form of assessment and are wondering whether students will perform up to the standards, they might have had their exams used modality they planned. Becomes. That being said, research has shown that students tend to get the same grades regardless of whether the exam is practical or online (Inuwa et al., 2012). Even though many students have used gadgets in their learning, there are still many teachers and students who have misconceptions regarding clear guidelines on the tailored format of their examinations and to provide many opportunities for risk-free practice of this new modality. Indeed, it has been argued that traditional scout examinations are arguably not an effective scoring technique, because almost entirely focused on testing students' ability to remember information (Choudhury et al., 2016). Therefore, perhaps the Covid-19 pandemic will provide institutions with opportunities for innovation in assessment approaches that allow accurate representation of students' knowledge and understanding of the subject matter later. It has been argued that traditional scouting examinations are arguably not an effective assessment technique, as they focus almost entirely on testing students' ability to recall information (Choudhury et al., 2016). Therefore, perhaps the Covid-19 pandemic provides institutions with opportunities for innovation in assessment approaches that allow accurate representation of students' knowledge and understanding of future subject matter. It has been argued that traditional scouting examinations are arguably not an effective assessment technique, as they focus almost entirely on testing students' ability to recall information (Choudhury et al., 2016). Therefore, perhaps the Covid-19 pandemic provides institutions with opportunities for innovation in assessment approaches that allow accurate representation of students' knowledge and understanding of future subject matter.

Currently there is little or no literature on COVID-19 related to educational studies. The only literature available relates directly to medical studies (Chinazzi et al., 2020; Hopman, Allegranzi, & Mehtar, 2020; Kraemer et al., 2020; Wu & McGoogan, 2020; Zu et al., 2020). This is not because the effects of the COVID-19 epidemic do not directly affect education, but because studies in education rarely include the effects of disease on the provision of effective education for students around the world. The rapid spread of COVID-19 makes every sector of human life immediately feel the impact.

Studies related to the impact of Covid-19 on the dynamics of learning in the world of education in Indonesia are very interesting to review as a form of scientific reading of the current learning phenomenon. The media have reported various cases of learning during the pandemic throughout Indonesia, which can be used as library research data, so it is very important to pay attention to education practitioners, lecturers, and teachers to study this phenomenon as an opportunity to create a new paradigm of learning in the future.

Based on this explanation, the authors are interested in conducting a study with the title; "The impact of Covid-19 on the learning process of schools in Indonesia". Based on the introduction above, the formulation of this writing

problem, namely; "What is the picture of the impact of Covid-19 on the learning process in Indonesia?"

The purpose of making this article is to find out information about what happens because of Covid 19 in educational institutions in Indonesia, especially in the city of Cirebon, West Java, then to find out what the essence, purpose, benefits and use value of all aspects of educational institution management activities are carried out, as well as knowing the importance of coaching in educational institutions, who should carry out coaching in these educational institutions, and also how to foster in areas in Islamic education management. In addition, how to implement online education for students.

## **METHOD**

This research uses a qualitative case study method to obtain information about the impact of Covid-19 on the learning process. In this study, the sample size was based on the depth of description. According to Gutterman (2012), the problem of opinion is a matter of wealth and depth of information, not sample size. The respondents of this study were 2 teachers, 2 students and 2 parents as representatives of each respondent. This research was conducted in depth by interview. Interview guidelines are based on interview guidelines and are conducted online. Even though it is online, the author will do in-depth research.

This research is a case study by taking samples through purposive sampling technique, namely a method to achieve certain research objectives. According to Bernard (2020), in purposive sampling there are no restrictions in determining the sample to obtain the information needed. The data analysis used is thematic data analysis, because the thematic approach can produce in-depth analysis to answer questions.

The interview protocol was developed by the authors of this article. The interview protocol originally consisted of ten semi-structured questions. It was then given to two instrument experts for determination of content validity and item clarity. Experts agreed on ten items. Furthermore, the instrument was then tested with a teacher and his comments on the clarity of the question were sought.

## **RESULTS**

The implementation of learning in every school has been stopped nationally by the Central Government due to the Covid-19 outbreak. The stopping of the learning process and all other educational services is carried out as an effort to prevent the transmission of Covid-19 based on the Minister of Education and Culture Circular Number 4 of 2020 concerning Implementation of Education Policies in an Emergency Period for the Spread of Corona Virus Disease (Covid-19). The Covid-19 virus outbreak has had a major impact on learning in Indonesia, some factual impacts can be observed as follows.

Learning that is carried out from home is based on the Minister of Education and Culture Circular Letter Number 4 of 2020. In this circular, it is explained that learning from home is carried out with provisions; 1) Learning is done online or remotely to provide meaningful experiences for students. At this point, there is also an allowance for teachers and students who do not have to complete

curriculum achievements, especially class advancement and graduation; 2) The main focus of learning from home, namely vocational education, is related to the Covid-19 epidemic, among others. Thus, teachers must have insight into Covid-19 education beyond the subject matter teaching that must be taught to students; 3) Learning activities and assignments are given to vary according to the interests and conditions of each student, especially on the consideration of gaps in access or learning facilities at home; and 4) Learning products receive qualitative and useful feedback from the teacher, without having to provide a score in the form of quantitative scores. Thus, the assessment is carried out authentically through teacher observations of students while participating in online learning.

The results of interviews through the zoom meeting application conducted with the teacher indicated that there would be a possibility of a decrease in the level of student performance in this year's learning and examination process. This is most likely due to reduced contact hours for students to the extent that they are unable to consult teachers about difficulties they face during their individual study time. When asked how COVID-19 will affect performance in the learning process, the teacher regretted the lack of contact hours. The head of the Cirebon city education office explained how this candidate would be affected with regard to practical school-based assessments.

### ***Interviewer***

In your opinion, how will the outbreak and the effects of COVID-19 affect student performance in the upcoming dayang learning process?

### ***Interviewees***

In fact, not just students will be affected. Even the teaching staff (teachers) will be affected. Automatically, this will affect students in the sense that many of them will not have access to coaching by the teacher because the facilities (gadgets) are still not available. They will likely reach the learning process with very little contact with a teacher. It will automatically affect them negatively. In fact, student status has been revoked because they do not attend regular classes. They are completely dependent on existing Gadgets (Mobile and Laptop) and internet access.

### ***Interviewees***

The head of the Cirebon city education office recommends doing individual learning, but they receive practical school-based assessments from the school. Seeing the facilities students have, it is found that students are still not ready and parents are still considering the new guidelines, namely online learning; we are expected to provide them with three practical assessments for the three domains of learning. However, due to time constraints we tend to provide less than the number of practical assessments required. This will lead to hasty performance for teachers and a negative effect on students.

### ***Interviewees***

Students are usually assisted with fee waivers (especially for private schools) because until now the learning process is still not face-to-face because several areas in the city of Cirebon are still in lockdown status. Teachers are afraid to teach and learners are afraid to learn in such an environment. Second, I think that if COVID-19 cases continue to increase, the examination process will likely not be carried out at the scheduled time.

When asked whether students whose exams normally take place at the end of the year would be affected, some teachers emphatically stated that the effect begins with the non-administration of the end-of-semester tests for odd semesters due to the closure of schools that can still be opened until the deadline.

### ***Interviewer***

In your opinion, what is the current distance learning process and are there any problems that arise with the current online learning system?

### ***Interviewees***

Said that this pandemic is a portal that triggers the emergence of a new model of engineering education systems in the future. Because of this, creativity and technology play a key role in such a situation today. If possible, be a new breakthrough. Several schools have succeeded in carrying out their learning obligations, while students have received their rights and have been facilitated. However, the rights of students in remote and isolated areas are still largely unfulfilled. In fact, if this pandemic does not stop until the end of 2020, they will pass / upgrade without examinations. Some students who pass the national exams must harbor all the longing for holding the graduation ritual as usual.

### ***Interviewees***

The application of distance learning (online) which is currently being implemented demands readiness for both parties be it from educational service providers or from the students themselves. However, online and distance learning requires qualified technology assistance and can be accessed easily. In addition, students must also be prepared to adapt to changes in learning arranged by the school. Remote learning can be seen as more free and flexible to be accessed from home.

### ***Interviewees***

The implementation of the distance learning system for students during the pandemic is considered to have not run optimally. There are several things that are considered obstacles, especially regarding internet access. This happens because some areas do not have internet access. Then, the problem of parents' ability to assist their children at home is also still lacking because many parents do not understand the current education system. With the implementation of learning from home, children also lack space to interact so they cannot socialize. In addition, from a psychosocial perspective it is also affected. Children may

feel bored, they may also be easily stressed so that their mental health is disturbed, their enthusiasm decreases, and their learning abilities also decline.

The problems that arose during the learning process from home were concluded from the results of a poll conducted by UNICEF through U-Report 5–8 June 2020 with 4,016 respondents in the main age range of 14–24 years. So, as many as 69% of children feel bored during Learning From Home, with the main challenge of internet access being 35% and 38% lacking guidance from the teacher. Then, as many as 62% of respondents hope that the main support provided is internet access and the other 26% is support from teachers.

Several teachers talked about students' different learning abilities, which would be affected in different ways depending on the strategies and interventions used by the teachers in preparing them for the national examinations. The Head of the Cirebon City Education Office hopes that a similar scenario is the same as the problems experienced by teachers today. The minister of education asked that the curriculum not be burdensome for students but the achievement of minimum competencies could still be fulfilled and the future mechanism was emphasized according to the Pancasila ideology. There fore it is necessary to have an effective strategy in each area in determining the appropriate online learning methods and models to meet the needs of students during this pandemic.

### ***Interviewer***

What strategy will you implement in the online learning process during the Covid 19 pandemic?

### ***Interviewees***

Currently, teachers are required to be able to design and design online learning that is lightweight and effective, by utilizing the right online tools or media and in accordance with the material being taught. Although online learning will provide wider opportunities to explore the material to be taught, teachers must be able to select and limit the extent of the material's scope and the appropriate application of the learning materials and methods used. The simplest strategy for teachers can use WhatsApp Group. The WhatsApp application is suitable for students today, because its operation is very simple and easily accessible to students. Meanwhile, online teachers who have more enthusiasm can improve their abilities by using various other online learning applications such as Zoom meetings.

### ***Interviewees***

Learning with assignments is done as a way out of dealing with a number of limitations that teachers, parents, and students have in organizing online learning. Not many teachers are familiar with online learning. Not all parents and students have a communication device (android) or easy access to internet signals. Even so, there are many choices for schools to be able to organize learning from home with assignments.

The principal arranges the scheduling of taking assignments at school from the teacher to students. Classes and study groups are set apart by time and distance when taking assignments. The time is set per day, third day, or week. The parents of the students take the task from the teacher to the students, to make it easier to manage the distance between people. This choice can be made with the assumption that the school is close enough to the students' homes, in one village.

Schools that are further away from the student's house can cooperate with the sub-district office of PT Pos Indonesia. In the part of the cooperation in organizing learning from home with PT Pos Indonesia and the education office, it will later facilitate the form of cooperation. Technically, the distribution of assignments is no different from the assignment box model in the village / kelurahan office.

### *Interviewees*

For schools and parents who have complete and complete facilities, they can use the strategy of carrying out learning activities at home with online learning through video conferencing and e learning. Despite the distance, iPad learning still brings teachers and students together virtually. In accordance with the appeal of the Minister of Education and Culture, teachers provide lessons that are more meaningful so that students feel comfortable and productive in honing soft skills. Then parents and teachers can participate in the video and podcast challenge. Besides being able to increase student creativity with up-to-date media, this competition is also a form of real concern for the participants to increase awareness of the dangers of Covid-19 and efforts to prevent it. Learn from home provides space for students to be creative and provide solutions so that the enthusiasm for student work is more intense. The hope is that the works that have been uploaded on Youtube and Instagram can be of use to other communities.

Based on this explanation, it can be concluded that online learning is the only channel for virtual classroom design for the implementation of School from Home. The results of the author's observations indicate that the implementation of this learning is not defined in other formal school rules such as students having to wear school uniforms; even so, the series of learning carried out is a formal process that must be followed by students with limits on modesty in dress during learning.

The existence of Covid-19 has an impact on shifting media use. Transformed learning media is more sophisticated using network technology devices. The results of the author's observations indicate that teachers and students must use new learning media with a new learning environment and atmosphere. Some of the transformations in the use of learning media include the use of the Wathshap Group for discussions and assignments, the use of the Zoom application, Google Classroom, Whatsapp, and WebEx for face-to-face online learning conferences, and the use of youtube for visual exploration of material and the use of television networks such as TVRI for deepening of the subject matter. All these

types of media, although they seem to be solutions during the pandemic, have various drawbacks.

## **DISCUSSION**

The results of this study all point to the fact that COVID-19 will have a negative impact on the education sector in Cirebon City. The reasons for this expected trend are largely the loss of contact hours for school students and the lack of e-learning facilities with which students can interact with their teachers.

The success of teachers in conducting online learning in the Covid-19 pandemic situation is the ability of teachers to innovate in designing and concocting materials, learning methods, and what applications are in accordance with the materials and methods. Creativity is the key to success for a teacher to be able to motivate students to stay enthusiastic about learning online and not become a psychological burden.

In addition, the success of online learning during the Covid-19 period depends on the discipline of all parties. Therefore, the school here needs to make a scheme by compiling good management in regulating the online learning system. This is done by creating a systematic, structured and simple schedule to facilitate communication between parents and schools so that their children who are studying at home can be monitored effectively.

Thus, online learning as an effective solution in learning at home to break the chain of Covid-19 spread, physical distancing (maintaining a safe distance) is also a consideration for choosing this learning. Good cooperation between teachers, students, parents and the school is a determining factor for online learning to be more effective and the short time in which students are expected to study and prepare for exams may affect their performance.

The National Examination-based learning evaluation system was canceled based on the Minister of Education and Culture Circular Letter Number 4 of 2020. Thus, in 2020 the National Examination is not a graduation requirement for students to enter higher education (Higher Education). For school exams, graduation also makes adjustments to the evaluation system in the form of portfolios, report cards, previous student achievements, assignment systems, online test implementation, or remote assessments. In particular, the Minister of Education and Culture's circular letter (2020) also regulates the provisions for schools that have not implemented School Examinations as follows. First, for elementary school graduation / equivalent is determined based on the last five semesters grade 4, grade 5, and grade 6. Furthermore, the grade 6 even semester score is used as an addition to the graduation score. Second, for junior high and high school graduation, graduation is also determined based on the value of the last five semesters and even semester scores for grade 9 and grade 12 are used as additional graduation scores, and third, for SMK graduation it is determined based on three values, namely report cards, field work practice scores, portfolios and grades. Practice for the last five semesters. Then the even semester scores of the last year are used in addition to the passing scores.

## **CONCLUSION**

In this research, it has been shown that COVID-19 will have an impact on the provision of education in the city of Cirebon. It remains to be seen how long this pandemic will last but there is hope that teachers in the city of Cirebon through the education ministry will design interventions that will benefit all school children in Indonesia because Indonesia's future lies in the education of the younger generation.

Based on this explanation, it can be concluded that Covid-19 has had an impact on the paradigm of measuring learning outcomes at every level of school education. The logical consequence in the midst of this crisis is that adjustments are made which, if analyzed, are felt to be less effective in determining the standards for class promotion and school graduation of students because they rely on the grades that have been achieved by previous students. Thus, educational institutions do not get an authentic picture of the development of student learning outcomes during the pandemic.

The implementation of learning in Indonesia is currently being disrupted externally by the Covid-19 outbreak crisis. Some of the impacts include; 1) schools are transferred to homes through an online learning process; 2) there is a transformation of technology-based learning media through the use of Whatapp Group, Zoom, Google Classroom, WebEx, Youtube, and TV channels; 3) adjustment of learning methods; 4) adjusting the learning evaluation to determine the standards for class promotion and graduation; and 5) demands for collaboration between parents of students at home as a substitute for teachers to control children's learning.

## REFERENCES

- Chinazzi, M., Davis, JT, Ajelli, M., Gioannini, C., Litvinova, M., Merler, S., ... Viboud, C. (2020). The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak. *Science*. <https://doi.org/10.1126/science.aba9757>
- Chipata Day Secondary School (2020). Performance analysis report for 2019 school certificate examinations. Chipata, Zambia. Creswell, JW (2017). *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research*. 4th edition.
- Choudhury B, Gouldsbrough I, Shaw FL. 2016. The intelligent anatomy spotter: A new approach to incorporate higher levels of Bloom's taxonomy. *Anat Sci Educ* 9: 440–445
- Hopman, J., Allegranzi, B., & Mehtar, S. (2020). Managing COVID-19 in Low and Middle income Countries. *JAMA*. <https://doi.org/10.1001/jama.2020.4169>
- Inuwa IM, Taranikanti V, Al-Rawahy M, Habbal O. 2012. Anatomy of practical examinations: How does student performance on computerized evaluation compare with the traditional format? *Anat Sci Educ* 5: 27–32.
- Kraemer, MU, Yang, CH, Gutierrez, B., Wu, CH, Klein, B., Pigott, DM, ... Brownstein, JS (2020). The effect of human mobility and control measures on the COVID-19 epidemic in China. *Science*. <https://doi.org/10.1126/science.abb4218>

- Levy, H., and Guterman, HG (2012) Does advertising matter to store brands purchase intention? A conceptual frame work. *Journal of Product & Brand Management*. 21 (2), 89-97
- McAlear, Michael. (2020). "Prevention Is Better Than the Cure: Risk Management of COVID-19." *Journal of Risk Financial Management* 13, no. 46: 1–5
- Simmons, DE (2002). The Forum Report: E-learning Adoption Rates and Barriers. *The ASTD e-Learning Handbook*, 19-23
- Sintema, EJ, & Phiri, PA (2018). An investigation of zambian mathematics student teachers' technological pedagogical content knowledge (TPACK). *Journal of Basic and Applied Research International*, 24 (2), 70-77.
- Wang, C., Cheng, Z., Yue, XG, & McAlear, M. (2020). Risk Management of COVID-19 by Universities in China. <https://doi.org/10.3390/jrfm13020036>
- Wickramasinghe, NC, Steele, EJ, Gorczynski, RM, Temple, R., Tokoro, G., Wallis, DH, & Klyce, B. (2020). Growing Evidence against Global Infection Driven by Person-to-Person Transfer of COVID-19. *VirolCurr Res*, 4 (1).
- Wu, Z., & McGoogan, JM (2020). Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. *JAMA*. <https://doi.org/10.1001/jama.2020.2648>
- Zu, ZY, Jiang, MD, Xu, PP, Chen, W., Ni, QQ, Lu, GM, & Zhang, LJ (2020). Coronavirus disease 2019 (COVID-19): A perspective from China. *Radiology*, 200490. <https://doi.org/10.1148/radiol.2020200490>