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## The potential for learning loss to basic movement skills in elementary school students during physical education learning during the pandemic

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### Abstract

The current Covid-19 pandemic has resulted in new challenges for the people and the Indonesian government, especially in the education sector. One of the affected is physical education, and it is feared that there is learning loss. It is a situation where students lose knowledge and skills due to certain conditions, decreasing their mastery of competencies. This study aims to examine the impact of the Covid-19 pandemic on the potential for learning loss in basic movement skills in elementary school students during Physical Education Learning during the Pandemic Period. The method used in the study is descriptive qualitative, using secondary data taken from various sources. With the gap in learning outcomes due to learning loss, it is necessary to have a mapping to determine the basic motion skills with the highest risk. This study's results show that elementary school physical education learning has the highest risk of learning loss due to distance learning during the Covid-19 pandemic. It is hoped that physical education teachers can respond to this situation by paying more attention to students who have a high learning loss situation, namely by supporting infrastructure in the implementation of distance learning evenly to their students so that there are no gaps in learning outcomes, especially basic movements.

**Keywords:** learning loss, basic motion, physical education, pandemic

### INTRODUCTION

Currently, around the world, there is a pandemic that has a considerable impact on all sectors of human life, including the world of education (Onyema, 2020). The spread of COVID-19 is very fast, and no one has been able to predict when this COVID-19 pandemic will end. The health crisis caused by the COVID-19 outbreak has spearheaded online learning in unison (Bhavya Bhasin et al., 2021). To prevent the spread of the Covid-19 virus in Indonesia, which is increasingly widespread, the government needs to take action by urging the public to carry out social distancing movements. Social distancing movements are designed to

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reduce the interaction of people in the wider community ([Uscher-Pines et al., 2018](#)). With the implementation of social distancing during the Covid-19 pandemic, educational activities have been hampered. This has resulted in an educational revolution in Indonesia, which is marked by the transition from the face-to-face learning system to distance learning at all levels of education ([Chandrasiri, 2020](#)).

According to [Aliyyah et al., \(2020\)](#), several obstacles in the implementation of learning during the Covid-19 pandemic, including obstacles related to learning activities, technology, as well as personal and environmental. Obstacles related to learning activities involve a lack of understanding of the material, ineffective and less interactive learning, unscheduled learning implementation time, and difficulty accessing learning resources. Obstacles related to this technology include internet networks, internet quotas, and learning devices. Without ICT facilities and infrastructure, the implementation of distance learning will experience many obstacles. The internet network is also an obstacle in distance learning because of the uneven internet network throughout Indonesia. The results of a study conducted by [Simamora et al., \(2020\)](#) said that Indonesia's internet speed is only 20.1 Mbps, very far below the world average of 73.6 Mbps. Obstacles related to the personal and environmental in carrying out distance learning include a non-conducive learning environment, lack of motivation, unfocusedness, health problems, and the number of costs that must be incurred. The Covid-19 pandemic requires everyone to stay at home, making the environment used for distance learning crowded or less conducive and less focused during learning. This has an impact on reducing learning motivation because online classes require high independence and the ability to learn on their own. Self-motivation is the determining factor for the success of the learning process ([Fajri et al., 2021](#)). Supporting access that encourages distance learning activities is certainly not evenly distributed around the world. Moreover, this pandemic has greatly impacted the economic sector, thus burdening the family economy.

Distance learning is certainly inseparable from the gaps that cause this learning system to be less effective. One thing to fear is that if distance learning lasts for a long time, it will impact learning loss. [Engzell et al., \(2021\)](#) mean that learning loss is a situation where learners lose knowledge and skills either in general or specifically or the occurrence of academic setbacks due to certain conditions such as prolonged gaps or the inability of the educational process. Learning loss that is feared to occur is the limited interaction between educators and students, limited interaction between students and other students, problems with learning time, lack of concentration and loss of focus, and lack of student absorption of the learning material provided ([Dorn et al., 2020](#)).

To overcome this problem, physical education teachers are the frontline to innovate to package physical education in elementary schools. Physical education in elementary schools should improve the quality of students' basic movements and be packaged more pleasantly for easy understanding. Basic movement skills lay the foundation for students to participate in various physical activities and sports ([Chen et al., 2017](#)). It is added by [Chen, Mason, Hypnar, et al., \(2016\)](#) that basic motion skills are movement patterns that involve different parts of the body, such as legs, arms, trunks and head, and include skills such as walking, jumping, catching, throwing, hitting and balancing. The level of development of basic movements in each primary school student is different, this is influenced by factors: gender, heredity and growth ([Leasa et al., 2017](#)). Of these factors, the most influential on the student's individual movement ability is the level of interaction of students with their environment. That is, the opportunity that each student gets to do physical activity. It is assumed that more students who often engage in physical activity will have a greater chance of becoming more skilled ([Logan et al., 2018](#)). For this reason, it is necessary to create situations and conditions that require students to carry out physical activities to help the process of growth and development in a better direction ([Chen, Mason, Hammond-Bennett, et al.,](#)

2016). Physical education teachers have an important role in improving the basic movement skills of elementary school students.

Student success in achieving learning objectives is not only based on the ability and way teachers manage to learn but can also be seen in the development of students both physically and mentally. Primary school students are going through a developmental process both intellectually, socially, and emotionally, as well as physical, linguistic and moral development (Gajda, 2016). This means that each student has a different speed of development in each aspect depending on the function of maturity and the function of learning (Cocca et al., 2020). This is what causes individual differences in elementary school students even though they are relatively the same age (Fletcher et al., 2013). The results of the research conducted by (Oktarifaldi et al., 2019) show that physical education teachers must have insight into and understanding of the importance of basic movement skills and the ability to use instruments in measuring the level of students' basic motion skills. According to (Syahputra et al., 2020), the efforts that teachers should make to overcome learning difficulties, such as; identification to find students who have learning difficulties, diagnosis of determination of the results of data processing about students who have learning difficulties and types of learning difficulties experienced by students, prognosis to develop plans or programs that are expected to help overcome students' learning difficulties problems, the latter providing assistance or therapy in the form of tutoring. The teacher also plays a role in solving problems faced by students, and students very much need the role of the teacher. The role of the teacher Physical education in learning must pay attention to the student's level of development so that the teacher can correctly plan and carry out the learning process. The above statement is in line with the opinion (Marlina, 2019) which states that being able to perform skills will certainly motivate the child to move.

Thus, the potential for learning loss to basic movement ability in elementary school students during physical education learning during the

COVID-19 pandemic can be overcome. Strategies that can be done are to provide activities or tasks to students that emphasize more movement activities. Habituation will be a culture that will be attached to students in carrying it out. Habituation is carried out must be carried out regularly and remain so that accustomed and basic movement can continue to be trained both in the home and school environment.

## **METHOD**

The method used in this study is a qualitative descriptive research design. Qualitative research is defined as research that produces descriptive data in the form of written or spoken words from people and observable behaviors (Yuliana et al., 2021). Qualitative descriptive research is a research design that describes research data objectively. Descriptive research aims to make descriptions, images, or paintings systematically, factually, and accurately related to the facts, properties and relationships between the phenomena studied. Researchers use this method to describe and present data on the phenomenon of learning loss to basic motion abilities due to distance learning during the Covid-19 pandemic.

The population in this study was people who were involved in activities at school but were limited to 39 respondents from 3 elementary schools, namely: (a) 3 Principals, (b) 3 vice principals for curriculum, (c) 3 Health and Sports Physical Education Teachers in the Ngemplak sub-district area and (d) 30 parents of students. The sampling technique used, namely purposive sampling, includes the principal and waka curriculum has a very important role as a mediator. Health and Sports Physical Education teachers have a role as motivators in learning activities in schools in the introduction of basic movements. Parents accompany students when at home. The analysis process in descriptive research is presenting, analyzing, and interpreting data (Suprijanto & Arikunto, 2017). Through descriptive analysis, the researcher describes the information that

has been obtained with the variables studied. The interview guideline instruments can be seen in table 1 below:

**Table 1.** Interview indicators and guidelines for potential learning loss to basic motion skills during the pandemic

Number	Variable	Indicators	Description	Subject
1	Characteristics of basic motion learning difficulties	Planning	Components of the Learning Implementation Plan (RPP) planned teacher	Health and sports physical education teachers
		basic motion learning	Implementation	
		basic motion learning	The course of activities learning that carried out; method, media, step Learning materials and sources the study, as well as evaluation learning	
		Involvement student	Forms learning activities shown students psychomotorly	
2	Factors causing difficulty	The timing of the Provided and the timing of the Used students for learn	Comparison the time that provided the school with the time that utilized students to get involved deep learning	Principals, vice principal for curriculum, Health and
		Accessibility	Acquisition information by	

learning basic motion	students against learning in school	sports physical education teachers and parents
Participation	Student activities deep Learning	
Progress	Change student abilities after following process Learning	

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## RESULT

### Characteristics of Basic Motion Learning Difficulties

#### Learning Planning

In offline conditions, teachers only make learning implementation plans to complete administrative needs. Especially during the pandemic, teachers have difficulty designing learning implementation plans that are in accordance with school conditions. Apart from the division of time allocations that change from normal to pandemic conditions, there is also a problem with simplifying the materials teachers must do. During the pandemic, teachers also did not prepare a learning implementation plan before the learning process. According to [Lubis & Dasopang, \(2021\)](#) simplification of material during a pandemic can indeed impact the ease of teachers in delivering material but also impact the acceptance of material to students, which is not optimal. The implementation of online learning must continue to use syllabus guidelines and learning planning plans, there is no change in the use of the syllabus and rpp, but adjust to the conditions of online learning. Online learning allows learners to become more motivated and more involved in the learning process, thereby increasing student commitment and perseverance ([Efriana, 2021](#)). Teachers only use package books as a foothold to carry out learning during the pandemic. Thus, it can be concluded that teachers do not carry out learning planning before starting learning, and this condition is found both during the pandemic and before the pandemic. Regarding learning

resources, teachers have not used other learning resources other than existing package books. This is because teachers also find it difficult to find references to other learning resources because of poor internet access in the school area. According to (Laksana, 2021). Internet access is a key factor in the success of distance learning carried out online. Considering that the entire online distribution process is internet-based, if there are areas that have problems in the aspect of the internet network, it will certainly make the learning process not optimal (Gunawan et al., 2021)

### **Implementation and Time Provided in Learning**

With the occurrence of the Covid-19 pandemic, learning strategies and methods are usually carried out with an approach that is relevant to current conditions (Lidinillah et al., 2021). During the pandemic, several schools that became data in this study made some adjustments in the learning process. The learning process is divided into 2 sessions; (1) Learning from Home and (2) Face-to-Face. Schools do not choose online learning (Virtual meetings) because of the availability of internet access in the area around the school. In addition, very few parents of students can provide gadgets for online learning. Therefore, the school decided to carry out group visits to study from home. Every day, the teacher will visit the study groups that have been created. The learning process will focus on providing the material that has been compacted (simplified). The details of the allocation of learning time during the pandemic are quite significantly different when compared to the allocation of learning time in normal times. In normal times, students study for 5-6 class hours per day. During face-to-face learning during the pandemic, learning time is allocated for 2 hours of lessons. Meanwhile, when studying from home, learning activities are only carried out for 30 minutes for one visit.

### **Student Engagement in Learning**

During the learning process during the pandemic, learning activities did not run optimally. Students tend to prefer studying at school. This causes students to be less excited when they get visits from teachers. However, teachers find it easier to manage students when implementing

online learning. Because the number of students per group is not too large, teachers can focus more on the learning process. Suppose sports and physical health education teachers cannot adapt quickly to these hurdles. In that case, students' academic performance will inevitably be affected. Even sports and health physical education experts' concerns about the threat of 'lack of movement,' which can lead to fitness problems and various diseases will chasten our children with weak immune systems (Liu et al., 2021).

## **Factors Causing Basic Motion Learning Difficulties**

### **Accessibility**

Especially for students with learning difficulties, the teacher performs several special treatments outside of the usual learning services, including; (1) conducting intensive communication with the parents and relatives of the student concerned; (2) conducting special guidance after class hours are over, (After school); (3) placing student seats close to the teacher so that the teacher can more easily control the student's learning process.

### **Participation**

Participation from students during the learning process is classified as passive. The special treatment given still does not bring maximum results. Students tend to still find it difficult to follow the learning process, especially during a pandemic. Students are becoming increasingly difficult to be controlled in the learning process.

### **Progress**

Student learning outcomes during the pandemic have certainly decreased quite drastically. This decrease is suspected to be due to the learning process that is not optimal and the allocation of learning being minimal. Learning conditions that are not conducive due to the pandemic also affect students' ability to move the material provided. Based on data from several subjects interviewed, this decrease in motion ability reached 50% when compared to normal learning. This was in line with the findings

(Saputri et al., 2021), where students' basic movement ability tended to decrease drastically during the pandemic. This is due to insufficient learning time and an unfavorable learning climate (Puspitasari et al., 2021).

## DISCUSSION

The Covid-19 pandemic has forced students to learn online due to schools being closed. This has made various levels of education try to find the right learning method, although until now online learning has resulted in huge losses in learning (Agarwal & Kaushik, 2020). With the implementation of online physical education learning at the elementary school level, there is a potential for learning loss in these activities.

According to research Bahasoan et al., (2020), during the pandemic, there are many learning difficulties experienced by students and physical education teachers. For students, the first difficulty is the change in the learning climate, which is usually carried out directly into learning that is carried out individually. Students who usually interact directly with teachers and other students now have no social and psychomotor interaction during the learning process. For the teachers themselves, the difficulty in carrying out the learning process is in the aspect of educational facilities. The internet network is one of the learning facilities that teachers must own during online learning. The existence of difficulties in the learning process of physical education will result in the emergence of Learning loss (Ochoa Martinez, 2020). Learning loss is one of the concepts defined as inexperience in the learning process carried out in schools (Ward et al., 2015). Thus, Learning loss will impact the quality of human resources who will be born during the Covid-19 pandemic, especially in basic movement skills.

The characteristics of the material in the subject of Physical education, especially in material related to physical movement, at first glance, are irrelevant if taught with a distancing learning model (Hodge et al., 2017). The more students who often engage in physical activity will

have a greater chance of becoming more skilled (Bukowsky et al., 2014). According to Beni et al., (2017), motion is the movement of the limbs aggressively or violently. Basic motion is a skill for daily tasks, including path movement, running, jumping, and throwing. According to Indra et al., (2020), basic motion is a skill that connects the brain and the muscles of the arms and legs. It is used to achieve the purpose of exercise or exercise, such as throwing a ball, jumping or diving into the water, or balancing protection. Basic motion skills are divided into 3, namely: locomotor, non-locomotor, and manipulative.

Many students feel that online learning is difficult to do, according to the respondent's statement saying that learning from home is not fun, students prefer face-to-face learning at school with teachers and friends—friends and learning resources are easy to get. If done online. Tarp et al., (2016) define learning loss as a situation in which learners lose knowledge and skills, either general or specialized or decline academically due to prolonged gaps or the continuity of the educational process. This is largely due to the disruption of the formal educational process. This year, 75% of schools worldwide have not even reopened face-to-face learning. Data from various studies showed there are three main problems resulting from schools not conducting face-to-face learning: (1) a decrease in the level of desire to learn, (2) an increase in inequality, and (3) the possibility of dropping out (drop out).

## **CONCLUSION**

Physical education at the primary school level is vulnerable and has a high risk of being affected by learning loss due to the Covid-19 pandemic. Based on the analysis, the distribution of learning loss in physical education is related to motion skills. One of the things that can cause this problem is the lack of supporting components in distance learning. Areas that have difficulty accessing the internet will make it difficult for students and teachers in the learning process of physical education. Economic inequality and social inequality, as seen from the low economic distribution of parents, have a greater impact on student

learning loss. These results show that physical education learning in elementary schools has the highest risk of learning loss due to distance learning during the Covid-19 pandemic. Where the number of elementary school students is the highest among students at other levels, it is hoped that physical education teachers can respond to this situation by paying more attention to students who have a high learning loss situation, namely by supporting infrastructure in the implementation of distance learning evenly to their students so that there are no gaps in learning outcomes, especially basic movements.

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## REFERENCES

- Agarwal, S., & Kaushik, J. S. (2020). Student's Perception of Online Learning during COVID Pandemic. *Indian Journal of Pediatrics*, 87(7), 554. <https://doi.org/10.1007/s12098-020-03327-7>
- Aliyyah, R. R., Reza, R., Achmad, S., Syaodih, E., Nurtanto, M., Sultan, A., Riana, A., & Tambunan, S. (2020). The Perceptions of Primary School Teachers of Online Learning during the COVID-19 Pandemic Period: A Case Study in Indonesia. *Journal of Ethnic and Cultural Studies*, 7(2), 90–109.
- Bahasoan, A. N., Wulan Ayuandiani, Muhammad Mukhram, & Aswar Rahmat. (2020). Effectiveness of Online Learning In Pandemic Covid-19. *International Journal of Science, Technology & Management*, 1(2), 100–106. <https://doi.org/10.46729/ijstm.v1i2.30>
- Beni, S., Fletcher, T., & Ní Chróinín, D. (2017). Meaningful Experiences in Physical Education and Youth Sport: A Review of the Literature. *Quest*, 69(3), 291–312. <https://doi.org/10.1080/00336297.2016.1224192>
- Bhavya Bhasin, Gautam Gupta, & Sumedha Malhotra. (2021). Impact of Covid-19 Pandemic on Education System. *EPRA International Journal of Environmental Economics, Commerce and Educational Management*, June, 6–8. <https://doi.org/10.36713/epra6363>
- Bukowsky, M., Faigenbaum, A. D., & Myer, G. D. (2014). FUNdamental Integrative Training (FIT) for Physical Education. *Journal of Physical Education, Recreation & Dance*, 85(6), 23–30. <https://doi.org/10.1080/07303084.2014.926842>

- Chandrasiri, O. (2020). International Journal of Advanced Education and Research The COVID-19: impact on education. *Academia*, June, 4. <https://doi.org/10.1093/pubmed/fdaa053>
- Chen, W., Hammond-Bennett, A., & Hypnar, A. (2017). Examination of motor skill competency in students: Evidence-based physical education curriculum. *BMC Public Health*, 17(1), 1–8. <https://doi.org/10.1186/s12889-017-4105-2>
- Chen, W., Mason, S., Hammond-Bennett, A., & Zalmout, S. (2016). Manipulative skill competency and health-related physical fitness in elementary school students. *Journal of Sport and Health Science*, 5(4), 491–499. <https://doi.org/10.1016/j.jshs.2015.03.007>
- Chen, W., Mason, S., Hypnar, A., & Bennett, A. (2016). Assessing motor skill competency in elementary school students: A three-year study. *Journal of Sports Science and Medicine*, 15(1), 102–110.
- Cocca, A., Verdugo, F. E., Cuenca, L. T. R., & Cocca, M. (2020). Effect of a game-based physical education program on physical fitness and mental health in elementary school children. *International Journal of Environmental Research and Public Health*, 17(13), 1–13. <https://doi.org/10.3390/ijerph17134883>
- Dorn, E., Hancock, B., Sarakatsannis, J., & Viruleg, E. (2020). COVID-19 and learning loss-disparities grow and students need help. *Mckinsey & Company*, December, 1–2. <https://www.strumpfassociates.com/demo/wp-content/uploads/2021/01/COVID-19-and-learning-loss-disparities-grow-and-students-need-help-V2-1.pdf>
- Efriana, L. (2021). Problems of Online Learning during Covid-19 Pandemic in EFL Classroom and the Solution. *JELITA: Journal of English Language Teaching and Literature*, 2(1), 2721–1916.
- Engzell, P., Frey, A., & Verhagen, M. D. (2021). Learning loss due to school closures during the COVID-19 pandemic. *Proceedings of the National Academy of Sciences of the United States of America*, 118(17). <https://doi.org/10.1073/PNAS.2022376118>
- Fajri, Z., Baharun, H., Muali, C., Shofiatun, Farida, L., & Wahyuningtiyas, Y. (2021). Student's Learning Motivation and Interest; the Effectiveness of Online Learning during COVID-19 Pandemic. *Journal of Physics: Conference Series*, 1899(1). <https://doi.org/10.1088/1742-6596/1899/1/012178>
- Fletcher, T., Mandigo, J., & Kosnik, C. (2013). Elementary classroom teachers and physical education: Change in teacher-related factors during pre-service teacher education. *Physical Education and Sport Pedagogy*, 18(2), 169–183. <https://doi.org/10.1080/17408989.2011.649723>
- Gajda, A. (2016). The relationship and moderators of school achievement and creativity at different educational stages. *Thinking Skills and*

*Creativity*, 19, 246–259. <https://doi.org/10.1016/j.tsc.2015.12.004>

Gunawan, G., Kristiawan, M., Risdianto, E., & Monicha, R. E. (2021). Application of the Zoom Meeting Application in Online Learning During the Pandemic. *Education Quarterly Reviews*, 4(2), 26–32. <https://doi.org/10.31014/aior.1993.04.02.193>

Hodge, S. R., Lieberman, L. J., & Murata, N. M. (2017). Essentials of Teaching Adapted Physical Education: Diversity, Culture, and Inclusion. In *Essentials of Teaching Adapted Physical Education: Diversity, Culture, and Inclusion*. <https://doi.org/10.4324/9781351217385>

Indra, J., Hariadi, Sunarno, A., Hidayati, I., & Harahap, F. I. N. (2020). Development of Physical Education Learning Model Based on Bed Learning Environment to Improve Basic Movement Ability in Elementary School Students. 488(Aisteel), 454–457. <https://doi.org/10.2991/assehr.k.201124.092>

Laksana, D. N. L. (2021). Implementation of Online Learning in The Pandemic Covid-19: Student Perception in Areas with Minimum Internet Access. *Journal of Education Technology*, 4(4), 502. <https://doi.org/10.23887/jet.v4i4.29314>

Leasa, M., Corebima, A. D., Ibrohim, & Suwono, H. (2017). Emotional intelligence among auditory, reading, and kinesthetic learning styles of elementary school students in Ambon-Indonesia. *International Electronic Journal of Elementary Education*, 10(1), 83–91. <https://doi.org/10.26822/iejee.2017131889>

Lidinillah, D. A. M., Robandi, B., Wahyudin, W., & Dianasari, D. (2021). Elementary teachers's readiness to implement online learning during the covid-19 pandemic. *Premiere Educandum : Jurnal Pendidikan Dasar Dan Pembelajaran*, 11(2), 172. <https://doi.org/10.25273/pe.v11i2.9607>

Liu, J., Li, B., Chen, Q., & Dang, J. (2021). Student health implications of school closures during the covid-19 pandemic: New evidence on the association of e-learning, outdoor exercise, and myopia. *Healthcare (Switzerland)*, 9(5). <https://doi.org/10.3390/healthcare9050500>

Logan, S. W., Ross, S. M., Chee, K., Stodden, D. F., & Robinson, L. E. (2018). Fundamental motor skills: A systematic review of terminology. *Journal of Sports Sciences*, 36(7), 781–796. <https://doi.org/10.1080/02640414.2017.1340660>

Lubis, A. H., & Dasopang, M. D. (2021). Online learning during the covid-19 pandemic: How is it implemented in elementary schools? *Premiere Educandum : Jurnal Pendidikan Dasar Dan Pembelajaran*, 11(1), 120. <https://doi.org/10.25273/pe.v11i1.8618>

Marlina. (2019). *Asesmen Kesulitan Dr. Marlina, S.Pd., M. S. (2019). Asesmen Kesulitan Belajar. Prenadamedia Group.Belajar.*

- OCHOA-MARTINEZ, P. (2020). Physical education in school children with partial or complete hearing loss to improve gross motor skill development. *Espacios*, 41(46), 1–10. <https://doi.org/10.48082/espacios-a20v41n46p01>
- Oktarifaldi, O., Syahputra, R., & Putri, L. P. (2019). Pengaruh Kelincahan, Koordinasi Dan Keseimbangan Terhadap Kemampuan Lokomotor Siswa Usia 7 Sampai 10 Tahun. *Jurnal MensSana*, 4(2), 190. <https://doi.org/10.24036/jm.v4i2.117>
- Onyema, E. M. (2020). Impact of Coronavirus Pandemic on Education. *Journal of Education and Practice*, 11(13), 108–121. <https://doi.org/10.7176/jep/11-13-12>
- Puspitasari, R., Mufit, F., & Asrizal. (2021). Conditions of learning physics and students' understanding of the concept of motion during the covid-19 pandemic. *Journal of Physics: Conference Series*, 1876(1). <https://doi.org/10.1088/1742-6596/1876/1/012045>
- Saputri, S. R., Wati, M., & Misbah, M. (2021). Simple Harmonic Motion Electronic Teaching Materials Based on Authentic Learning to Train Students' Problem-Solving Skills: Aspects of Validity. *Journal of Physics: Conference Series*, 2126(1). <https://doi.org/10.1088/1742-6596/2126/1/012016>
- Simamora, R. M., De Fretes, D., Purba, E. D., & Pasaribu, D. (2020). Practices, Challenges, and Prospects of Online Learning during Covid-19 Pandemic in Higher Education: Lecturer Perspectives. *Studies in Learning and Teaching*, 1(3), 185–208. <https://doi.org/10.46627/silet.v1i3.45>
- Suprijanto, E., & Arikunto, S. (2017). Efektivitas Pengelolaan Kegiatan Kelompok Kerja Guru (Kkg) Di Kecamatan Rembang Kabupaten Purbalingga. *Jurnal Penelitian Ilmu Pendidikan*, 9(2), 141. <https://doi.org/10.21831/jpipfip.v9i2.12914>
- Syahputra, R., Bakhtiar, S., Oktarifaldi, O., Rasyid, W., & Putri, L. P. (2020). Assistance In Learning Basic Early Childhood Motion Skills For Early Childhood Teachers In Pesisir Selatan Regency. *Jurnal Humanities Pengabdian Kepada Masyarakat*, 1(1), 1–13. <https://doi.org/10.24036/jha.0101.2020.01>
- Tarp, J., Domazet, S. L., Froberg, K., Hillman, C. H., Andersen, L. B., & Bugge, A. (2016). Effectiveness of a school-based physical activity intervention on cognitive performance in Danish adolescents: LCoMotion-learning, cognition and motion - A cluster randomized controlled trial. *PLoS ONE*, 11(6), 1–19. <https://doi.org/10.1371/journal.pone.0158087>
- Uscher-Pines, L., Schwartz, H. L., Ahmed, F., Zheteyeva, Y., Meza, E., Baker, G., & Uzicanin, A. (2018). School practices to promote social distancing in K-12 schools: Review of influenza pandemic policies and practices. *BMC Public Health*, 18(1), 1–13.

<https://doi.org/10.1186/s12889-018-5302-3>

Ward, P., Kim, I., Ko, B., & Li, W. (2015). Effects of improving teachers' content knowledge on teaching and student learning in physical education. *Research Quarterly for Exercise and Sport*, 86(2), 130–139. <https://doi.org/10.1080/02701367.2014.987908>

Yuliana, L., Sugiyono, S., & Mehta, K. (2021). Comparative study in character education management models in Indonesia and India. *Harmoni Sosial: Jurnal Pendidikan IPS*, 7(2), 170–182. <https://doi.org/10.21831/hsjpi.v7i2.37143>