# INFORMATION TECHNOLOGY-BASED LEARNING TO IMPROVE STUDENT'S LEARNING ACHIEVEMENT DURING COVID-19 OUTBREAK AT SD MUHAMMADIYAH OF KARANGKAJEN OF YOGYAKARTA

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## ABSTRACT

Information technology-based learning is the solution for school during the COVID-19 outbreak. This learning platform encounters many obstacles, especially related to the school's readiness, teacher, and students in implementing information technology-based learning. This study aims to describe the implementation of information technology-based learning in developing cognitive, affective, and psychomotor aspects of the students in SD Muhammadiyah of Krangkajen, Yogyakarta. The research is qualitative research using a study case. The research subjects were a school principal, a vice of the school principal, school treasurer, homeroom teacher, students' parents, and the students, in which the research subjects were determined by purposive sampling technique. The data were collected through observation, in-depth interviews, and the study of documentation. The processes of data analysis used data reduction, data representation, and data verification. The research result showed that information technology-based learning in developing cognitive, affective, and psychomotor aspects of the students in SD Muhammadiyah of Karangkajen conducted through the stages; 1) the schools carry out careful planning related to teacher training and infrastructure in supporting learning in COVID-19 outbreak; 2) the implementation of information technology-based learning is diverse and structured innovatively, creatively, and communicatively (running in two-way direction); 3) the evaluation of information technology-based learning is more emphasized on using digital media appropriate with the certain grade level in order to achieve the expected competencies. Information technology-based learning in SD Muhammadiyah of Karangkajen is be able to lead students to improve learning outcomes in both cognitive, affective, and psychomotor aspects.

**Keywords:** Information technology-based learning, cognitive, affective, and psychomotor development, COVID-19, SD Muhammadiyah of Karangkajen

## INTRODUCTION

Information technology for learning is vital, especially the Covid-19 pandemic hitting all of the countries. This case requires revitalizing learning from offline to online to improve students' cognitive, affective, and psychomotor abilities. Dalkıran (2020) and Dorji (2020) stated that the students have balance cognitive, affective, and psychomotor

abilities in the future. Other results (Deniel, 2020; Hanin, 2020; Sewell, 2020; Susanne, 2020; Uyesi, 2020) stated that improving students' cognitive, affective, and psychomotor abilities can also improve emotional intelligence and build a sense of caring. Therefore, the teachers in elementary school are always supposed to develop and increase students' cognitive, affective, and psychomotor abilities, and is like the research of Ralp (2020) revealed that the role of the teachers could be able to teach in the digital era. According to Gabriella (2020), one attempt to improve students' cognitive, affective, and psychomotor abilities in information technology-based learning towards normal students or students with special needs. The resulting research of Al-Abdali (2020) and Longjun (2020) shows that information technology-based learning is the learning solution in the COVID-19 pandemic. Bentata (2020) mentioned that the revolution of digital-based learning in the COVID-19 outbreak is conducted to improve the students' ability holistically. The superior cognitive, affective, and psychomotor abilities for students are required in the millennial era.

Indonesia has 148.244 elementary schools. Of the many schools, most are not ready to implement information technology-based learning in developing students' cognitive, affective, and psychomotor abilities in the COVID-19 pandemic. The research result of Nahdi (2020) stated that most elementary school teacher unfamiliarly uses technology media to conduct the instruction in the class, like Powerpoint. According to Bahar (2020) and Makhroji (2020), many teachers in telementary school do not yet understand the learning application like Kahoot, potown, zoom, Edmodo, and other learning applications. On the other hand, some schools are still slow to implement online learning professionally due to the lack of facilities and infrastructure and lack of information. It is revealed by Fairuz (2020) from the Center for Indonesian Policy Studies (CIPS), and Ghorbani (2020) stated that information technology-based learning problems in Indonesia are like an iceberg and the need to leave conventional classrooms and move into the era of digital learning.

With these conditions, the teachers' information technology-based learning can not be implemented, especially in elementary school, even though students in the millennial era need technology-based learning. The research result (Ard, 2019; Johsnon, 2020; Marthese, 2018) explained that information technology-based learning is required to improve digital literacy related to students' cognitive, affective, and psychomotor abilities. Conventional learning and teacher-centered learning cannot improve students' ability holistically, especially in the COVID-19 pandemic. Dila (2020) stated that many technologically Backward teachers would complicate the schools' ideal school. The result is that there are students who are left behind to take the lessons.

Different from other general schools, SD Muhammadiyah of Karangkajen is one of the schools in Yogyakarta City that has implemented superior information technology-based learning in the COVID-19 pandemic. The teachers can quickly and responsively implement information technology-based learning adequately caused by the specific

strategy and readiness of facilities and infrastructure that support online learning. Even though, in the COVID-19 outbreak, the students can be able to follow online learning well. According to the background, the research interests to study in-depth regarding the process of information technology-based learning in developing students' cognitive, affective, and psychomotor abilities in the COVID-19 outbreak in SD Muhammadiyah of Krangkajen, Yogyakarta. This research specifically aims to answer the question: How is the implementation of information technology-based learning to improve students' cognitive, affective, and psychomotor abilities SD Muhammadiyah of Krangkajen, Yogyakarta in the COVID-19 outbreak starting from planning, implementation, and evaluation. The research result is expected to provide scientific knowledge to stakeholders, education practitioners, and particularly elementary school teachers to implement information technology-based learning in the COVID-19 pandemic era.

## LITERATURE REVIEW

### Learning Principles in Elementary School

The age of elementary school students is the golden age, dynamic age, and the most crucial period to instill the knowledge, value concept, and the variety of skills. Walker (2012) stated that attention, concern, and social value for elementary school students is more inherent than the upper-class level. Furthermore, in this era, a teacher must transform the knowledge by providing better full attention to the students. The research of Yuan Su (2020) and Wilhem (2020) stated that emotional elements and attractive and interactive cognitive therapy must be involved in creating learning videos; moreover, learning material is easier to understand.

The development of information technology has provided various facilities for teachers to find and develop learning media through creativity and innovation in information technology-based learning to run effectively. The research (Chen 2019; Lazonder, 2019; Lantz, 2020) stated that technological developments improved elementary school students' digital literacy. According to research by Bhatti (2020) and Griffith (2020), online learning based on Android phones has currently been developed, which is often used by elementary school students; therefore, information technology can be directly applied to students as easy as playing a game.

### The Importance of Elementary School Student's Cognitive, Affective, and Psychomotor Ability

Information technology development in the millennial era demands complete ability compared to the previous era. Ministry of Education and Culture (2019) in conveying the complete human concept refers to the opinion of Ki Hajar Dewantara; balanced abilities in three main educational domains including thought (*olah pikir*-cognitive), soul (*olah hati*-affective), and body (*olah raga*-psychomotor).

The research result of Betthauser (2020) and Takeda (2020) stated that the cognitive ability of each student is different based on individual social background, even though good class management and full attention from the teachers toward the students can be able to improve cognitive ability up to 35%. Furthermore, according to Anomaly (2020) and Telef (2020), cognitive abilities are attached to individual genes and an environment supported by technological endeavors in the millennial era that can improve other fundamental abilities. In affective aspects, Gallant (2020) stated that the children's affective aspect is influential for emotional intelligence related to children's cognitive ability. The affective aspects are oriented towards the meaning of values, empathy, sympathy, and social. The research result Mangrola (2020) and Kharazmi (2020) stated that multiple intelligences are the combination of the processing of thought (*olah pikir-* cognitive) and the processing of soul (*olah hati-* affective) of the students' potential must release in a balanced way and is macro from cognitive, affective, and psychomotor comprehensively so that the students' potential, interest, and talent can be maximized. The role of the teacher is a crucial factor in bringing out the students' multiple intelligence.

**Information Technology-based Learning To Improve Cognitive, Affective, and Psychomotor Ability**

Information technology-based learning is closely related to knowledge aspects (cognitive), which Wilson (2020) states that the use of Camtasia studio based multimedia (video tutorial) give a significant positive impact on student's learning outcome. On the other hand, according to Lackovic (2020), creative digital learning can increase student's cognition well. While according to Kirkham (2020) and Nuncio (2020) stated in affective aspects, a learning video including a material of social values implementation can directly apply and provide a real virtual portrayal for students. In psychomotor aspects, Lazonder (2020) stated that information technology-based learning could be seen from the students in carrying out several activities as follows: a) the students ask the teachers through social media/internet, such as Whatsapp application, chatting, and others; b) the students figure out and read the books or practice to make a craft from social media, such as youtube, Instagram, or Facebook; c) the students can play a game involved in the muscles of hand or foot movement by using a particular application. The three aspects have a very close relationship in the students' development in elementary schools. Through the research findings, Alyami (2020) and Amaliana (2020) said that the universities' alumni are bear job vacancies and bear job creators.

## RESEARCH METHOD

**Research Design and Approach**

This type of research is qualitative research using a study case. The research attempts to describe the implementation of information technology-based learning in

developing student's cognitive, affective, and psychomotor aspects in the COVID-19 era in SD Muhammadiyah of Karangkajen, Yogyakarta.

**Research Subject**

The research subject is the intended subject to be researched (Arikunto, 2017). The research subject was determined based on the technique of *purposive sampling*. Using the technique obtained 24 research subjects that the data has verified, as seen in table 1.

| Initials Name of Subjects | Status | Gender | Age (in the year) |
|---|---|---|---|
| Tn | Principal I | Male | 48 |
| Nn | Principal II | Female | 50 |
| Rs | Vice Principal of Curriculum I | Male | 28 |
| Yp | Vice Principal of Curriculum II | Female | 27 |
| Pi | Vice Principal of IT | Male | 24 |
| Sy | School Treasurer | Female | 42 |
| S, Nh, H, Rs, Jfa, Ms | Homeroom Teacher Coordinator grades I-VI | P, P, P, L, L, L | 37, 43, 45, 28, 37, 39 |
| Tam, Sm, Ag, S, Dn, Tws | Vice of Parent Association of students grades I-VI | P, P, L, P, P, P | 37, 34, 41, 38, 30, 39 |

**The Technique of Data Collection and Data Analysis**

The data collection technique used in this study is an in-depth interview, observation, and documentation. The interview conducts to get the information related to opinion, expectation, and perception that conducted by asking the various questions related to information technology-based learning carried out by teachers of SD Muhammadiyah of Karangkajen, and the impacts for parents and students for developing student's cognitive, affective, and psychomotor aspects. The observation was conducted by observing and documenting every activity of the information technology-based learning by teachers of SD Muhammadiyah of Karangkajen. The documentations are data/ archives, the photos of activities and notes of information technology-based learning, and the variety of findings found in the field.

Data collected are further analyzed by the phases of data reduction, data representation, and concluding (Miles and Huberman, 1994). Data reduction is one of the processes of simplification and transformation of raw data recorded from fieldnotes. Data

reduction aims to sharpen, classify, and reduce the data unrelated to the information technology-based learning in SD Muhammadiyah of Karangkajen.

## RESEARCH RESULT

**Information Technology-Based Learning Plan in Covid-19 Emergency Period**

*Preparation of Health Protocol and Learning Facilities*

To face the COVID-19 pandemic crisis, the school provides some preparations that are by coordinating with health institutions, education authorities, police station of Mergangsan sector, and the Regional Board of Muhammadiyah of Yogyakarta city. Furthermore, the teachers prepared to organize information technology-based learning training conducted on March 17-19, 2020. The teachers carried out the pickets with a certain amount of picket personnel, routinely sprayed the disinfectants carried out in the school environment, and held a closed meeting that involved the school principal's vice. The school also provided an allowance in the form of internet credit for the entire teachers to teach the students of grades 1-6. The online learning was started on March, 23 in which giving materials and tasks for students was provided online. Therefore, providing internet credits and medical equipment (Hand sanitizer, thermogenic, and disinfectant sprayer) is urgently needed. Moreover, during information technology-based learning, maximizing in using Whatsapp application, Google Classroom, G-School, and another android based application was also urgently required. (Interview with Tn and NN, March 27 and March 30, 2020).

In this condition, the school provided the supporting fund to support the learning. Sr explained that the school has an excellent financial system with a money safety system of up to 3 x salaries. Using this system allowed the teacher payroll finances to remain secure, in which the previous principal developed this system. A financial balance from last year and the accuracy of students' parents in paying school administration supported school finances during the Covid-19 period (Interview with Sr, April 1, 2020)



**Figure 1.** School preparation of facing COVID-19 coordinating with public health Office of Yogyakarta city

IT-based training for educators, cooperation with medical personnel, government service, and school facilities have been prepared as early as possible since the initial appearance of COVID-19 disease. The preparation of financial allocation for learning activities and the facilities for online learning have been provided well.

***Preparation of Media and Application for Information Technology-Based Learning***

During the COVID-19 pandemic, school learning has used online media. This application used by the school is adjusted by the intelligence level of the students so that the learning carried out for lower-class parallel is different from the learning carried out for upper-class parallel. For example, the teacher used WhatsApp application and learning material provided by PDF for students grade I and II, while the teacher used WhatsApp application and learning material provided by google form for students grade III. Furthermore, for students grade IV to VI, the teacher used WhatsApp application, google form, and G-School. Youtube and Google are used primarily for learning tutorial videos related to students' projects or creation. The use of learning media further used various learning applications, such as Movie Maker, Kine Master, PowerPoint, Macro Media Flash, Video Editor, and other video applications. It provided feedback or input for students to build communication among the students who used Zoom and WA Video Call communally. These activities aimed to create two interactions that will be maximized the learning well (Interview with Ir, April 2, 2020)

During a pandemic, SD Muhammadiyah of Krangkajen implemented Curriculum *Tumbuh*. Through the interview, Tn explained that::

> "During a pandemic, SD Muhamamdiyah of Krangkajen implemented curriculum *Tumbuh* that means the learning process application is the same as applying the learning process by curriculum 2013. Furthermore, the government's various instruction and input, like using information technology-based learning such as *Rumah Belajar, Ruang Guru,* and *Zenius* would be examined next month. The network computer development in the IT laboratory also would be revitalized using a better server. As a future plan, the school board would be changed using a smartboard made by Wiimote that needed an infrared pen and LCD Projector in the classroom not to need an expensive *smartboard*. Thus, it could minimize the costs of making the *smartboard.*" (Interview with Tn, March 27, 2020).

For students in grade VI, communication-based computers are used for preparing school examinations, especially for communicating with parents. The use of Zoom and teleconference carried out online from home can build two-way communications like feedback and input for students; furthermore, the school can evaluate earlier IT-based school program, and the parents also as soon as possible receive the feedback and appeal from the school regarding on students' learning (Interview, April 2, 2020). Supporting IT based program, the school prepared to learn devices and applications for online learning.

Thus, the policies could be evaluated as early as possible and held the improvement so that the learning run well.

***Implementation of Information Technology-Based Learning in the COVID-19 Pandemic Crisis***

***Information Technology-Based Learning Activity***

Learning activity also used Youtube and Instagram to upload tasks involved in the combination of cognitive, affective, and psychomotor aspects. The teachers provided feedback for the variety of the acitivities such as creating a video for the material of natural science, memorizing, creating craft, and carrying out other activities to receive the advantages of the learning. Furthermore, the teachers provided materials in hard copy, such as e-book or PDF files. Thus it eases the parents to accompany their children for studying during this COVID-19 pandemic era. Teachers also developed learning that can improve students' creativity. The teacher, for instance, explained materials concerning science with the simple practice test. Moreover, the students are asked by the teachers to repratice concerning science and further send their task to Instagram or uploaded it on youtube. This activity also has been developed by using *Edmodo* that aimed to provide a more exciting and applied learning experience that aimed to lighten up the storage of parent's smartphone devices (Interview with Yp, April 3, 2020).

Information technology-based learning in SD Muhammadiyah of Krangkajen concerns the development of cognitive, affective, and psychomotor aspects; therefore, all of the learning activities aimed to improve the knowledge, value and decency based knowledge, also project-based student's ability to improve student's psychomotor (Interview, April 3, 2020). Below is the portrayal of several student's activities during information technology-based learning carried out in the home.



**Figure 2.** Students' online learning practice

Online learning virtual learning-based social media creates two-way learnings in which virtual learning develops to students' cognitive, affective, and psychomotor abilities.

*The Use of Information Technology In Improving Three Learning Phases*

The achievement completeness score of online learning for grade 1 during the COVID pandemic was approximately 80%, in which the method used was online learning, and tasks were collected offline in the form of a portfolio. The learning process's disadvantage was approximately 20% in which it was caused that most of the parents are medical personnels and can help their children after work. Learning of grade II was carried out using Whatsapp as conducted in grade I. Students' tasks were given through Whatsapp that further the students were given feedback through Video call communally. Learning for grade II using online learning reached 80%, and the percentage of 20% would be matriculated in the next class (Interview with S and N, as classroom coordinator of grade I and II, April 6-7, 2020).

For grade III, the learning was delivered using Whatsapp and google form, and it is conducted for the task and daily examination, delivering the material used PDF and youtube. The information technology-based learning achievement in grade III for knowledge aspect reached 90%, and affective and psychomotor aspects reached 80%. According to Rs, classroom coordinator of grade IV, said that the learning media used for grade IV were Whatsapp, google form, youtube, and G-School. The attainment of online media is 85% for the cognitive aspect, 85% for the psychomotor aspect, and 78% for the affective aspect. The disadvantage of the affective aspect is caused most of the students of grade IV are accompanied by household assistant in their daily lives (Interview with Is, classroom coordinator of grade III, April 8-9, 2020). The statement of other teachers strengthens the abovementioned data. Through the interview, Fra said that:

> "The learning media used for grade V are google classroom, google form, youtube, and Instagram, which Google form used for daily exercise. Teacher of grade V delivered the material using Ms. Power Point, Microsoft Word, and linked using a particular application. The learning attainment in cognitive, affective, and psychomotor aspects reached 90%, according to Muh. Syafii, S.Pd, as classroom coordinator of grade IV, learning for grade IV would be focused on three lessons that would be started in the second semester. The national examination is replaced by a school examination conducted from April 6-15, 2020, using an online system. The attainment of cognitive, affective, and psychomotor is about 80%. (Interview with Fra as classroom coordinator of grade V, April 20-27, 2020).

Based on each coordinator's description for grade I to grade IV, the learning is adjusted to class level, also the suitability of learning application. Furthermore, the student's learning facilities can be used and understood, in which the achievement score is upper 75%.

*Learning Evaluation In COVID-19 Pandemic Era*

Information technology-based learning is carried out in a conducive way. Tam said that overall, her daughter reached 80% for the cognitive aspect, 80% for the psychomotor aspect, and 95% for the affective aspect. There are some obstacles to the particular cognitive aspect that students can not understand several materials through online learning. Sm, one of the parents of grade V, said that her child is more disciplined to study at school than at home due to the binding school schedule. In the next week, the teacher used google classroom to monitor the students to study well. The study results during online class are about 78% for the cognitive aspect, approximately 85% for the affective aspect, and 80% for the psychomotor aspect (Interview with Trm, one of the parents of grade IV student, May 4-5, 2020).

Information technology-based learning has a significant impact on Ag's child. He said that the grade IV teacher always monitored the learning for 2 hours and always communicated to the students through Whatsapp. In general, he said that the learning achievement score is approximately 85% for the cognitive aspect, 90% for the affective aspect, and 80% for the psychomotor aspect. On April 27, 2020, we collected the tasks, craft, and portfolio for the school. S said that the information technology-based learning in grade III improves three aspects holistically, mainly, her son always creates a video for Islamic education learning and converse in English. The attainment of cognitive aspects from various lessons is approximately 85%, 85% for the affective aspect, and 85% for the psychomotor aspect. (Interview with Ag, one of the parents of grade IV student, May 6-8, 2020).

Information technology-based learning for grade II is still limited to using Whatsapp and PDF files and using Whatsapp video call to communicate with them. In general, the cognitive aspect reached approximately 80%, 90% for affective and psychomotor aspects. Dn, as one of the parents of grade I students, said that:

> "Information technology-based learning is adequately effective. The percentage of the knowledge aspect is 80%, which is 78% for the affective aspect and 77% for psychomotor aspects. In doing portfolio assignments, in general, the children still need help from their parents, and it is necessary to hold face-to-face learning even though the cluster system carries it out. (Interview with Dn, one of the parents of grade II student, May 11-12, 2020)

In general, the students' parents of grade I-VI stated the parents' satisfaction with online learning carried out by the school. Two-way learnings and face-to-face meetings using a cluster system in collecting portfolios showed that the school could provide an excellent service for the students.

**DISCUSSION**

This study's data analysis is to find three steps of information technology-based learning; planning, implementation, and learning evaluation. Learning plan carried out by organizing training of digital technology for the teacher on March 16, 2020. The research result strengthening the research result of Marthese (2018) stated that the success of information technology-based learning plan must be supported by training for teachers in personal, media, or mastering digital devices. Other plans are to maintain the school environment by spraying disinfectant regularly due to sterilization and school hygiene. It is in line with the research of Longjun Zhau (2020) and Rottan (2020), which stated that the covid-19 virus is an evolution from SARS-COV2 and incubated for 14 days; furthermore, it is needed to spray disinfectant regularly to eradicate and prevent the spread of COVID-19 disease. The school also applied the regulation for social distancing as preventive action against the spread of coronavirus involving all school personnel, which this action is in line with the research result of Aniss Kassis (2020) about the habituation of social distancing in order to avoid the spread of the virus. There are also hand soap, hand sanitizer, thermogenic, and bathroom sink for all school personnel. This case supports the research result of Byareddy (2020) about handling covid-19 in the public area and the research result of Fangmei Li and Ming Zhou (2020) that emphasized that it is needed the caution of COVID-19 spread because coronavirus can grow and evolve at a specific temperature. Furthermore, providing medical equipment in the school must be prioritized.

Learning implementation is carried out through online learning and emphasized the main three aspects encompassing students' cognitive, affective, and psychomotor aspects. This research finding enriches the theory of Ki Hajar Dewantara (1956) about education as a whole must rely on three main domains; thought (*olah pikir*-cognitive), soul (*olah hati*-affective) and body (*olah raga*-psychomotor ) and theory of multiple intelligence of Howard Garner (1983) about the attempt to activate the students' multiple intelligence, such as cognitive intelligence (cognition), emotional intelligence (affective), kinesthetic intelligence (psychomotor) to balance students' growth and development. The school's learning is carried out in two-way learnings by using various media, such as WhatsApp, zoom, google classroom, G-school and arranging an offline meeting in cluster way to collect the portfolio, taking books, and school equipment completeness. In line with Shanshan Wu (2020) and Zulfa (2020), they stated that online live classroom or android based application must be carried out two-way learning to establish good communication between students, parents, and teachers. All of the teachers foster creativity to create an innovative, creative, and interactive learning media by involving students' cognitive, affective, and psychomotor aspects. This research finding supports the research of Griffith (2020) and Karine (2020) about the use of various media or applications to evolve holistic cognitive, affective, and psychomotor intelligence so that it improves student's learning motivation up to 50%. Thus, the school curriculum has been adjusted to a long-distance learning system so that the students from any region can easily access the learning media. The previous research findings support the research result of Ayega

(2020) and Saubern (2020) about developing digital and digital media based curriculum to increase student interest and reach the accessibility of teaching materials. As stated by Lazonder (2020) that the children in the Netherland at the age of primary school are more interested in digital literacy to increase their knowledge and skills.

Huang (2020) said that implementing information technology-based learning requires three main points: improving students' learning method or performance, fostering students' learning motivation by using interactive media, and cultivating critical thinking to solve the problems. In this research, except those three main points, Yuan Huang also found that the essential stages are the collection of the method, learning media and strategy based on the level of class of grade I to VI using media like WhatsApp, youtube, zoom, google classroom, live video conference, G-school, and google form which it was adjusted to student's ability. Teachers of grades I, II, III, moreover, deliver the materials in simple digital gameplay so that children do not get bored while participating in online learning. The previous findings are supported by the new research (Alshammani, 2020; Bruna, 2020; Jessica, 2020; Mary, 2020; Gleice, 2020) that emphasized the importance of suitability of the materials among class level and innovative play delivery in collaborating the learning for students at elementary school using a fun digital game.

Learning evaluation is carried out by analyzing the interview result of teachers as educators and parents as a target of education related to learning carried out by the students, research findings, and previous theory. Based on the interview with teachers and parents, in the Information technology-based learning, cognitive, affective, and psychomotor ability reached min 75%, which means that there is excellent two-way communication between parents and teachers as stated in the research result follows (Uyesi, 2020; Marthese, 2018; Vasguez, 2020) about the importance of two-way communication in the online learning to increase an accomplished digital culture. Furthermore, cognitive, affective, and psychomotor approaches are also based on the interview result with the representatives of students grade I to grade VI, in which they stated that they felt comfortable to carry out Information technology-based learning. The previous research supports Bigs and Collis's (1982) theory that explained SOLO taxonomy in Information technology-based learning. The statement of Dooglas Graham and the research finding of Kassymova (2020) stated about the essence of cognitive, affective, and psychomotor learning in which digital learning the approach can see the aspects and the theory of Bloom (1979) about the development of taxonomy bloom and Singer (1972) in learning approach using digital media. Mills (1979) theory about the psychomotor domain would be better if learning were based on learning by doing in which to carry out the digital learning the students can access WhatsApp, Instagram, Facebook, share by zoom, and youtube for supporting their digital learning, especially to support psychomotor domain. As stated by Emilia (2020) and Susanne (2020), e-learning

is not limited to space and time due to the importance of space and time visibility in long-distance learning.

## CONCLUSION

The implementation of Information technology-based learning in SD Muhammadiyah of Karangkajen was conducted through planning or preparation, implementation, and evaluation to run well. School plan or preparation related to facilities and IT-based teacher training supported by the use of learning media adjusted to class level has been prepared well. In addition, curriculum preparation must be accustomed to learning in the COVID-19 pandemic era. On the other hand, bathroom sink, hand soap, hand sanitizer, thermogenic, and disinfectant spraying have been provided, and the habituation of social distancing has been conducted in the school environment. The implementation of Information technology-based learning carried out by teachers of SD Muhammadiyah of Karangkajen has implemented Information technology-based learning that involved cognitive, affective, and psychomotor aspects in balance. The attainment of students' cognitive, affective, and psychomotor aspects is upper 75%. It means that online-based learning strategies are still running well in the COVID-19 outbreak. The learning media for students grade I to grade VI also can be used well, while learning media used, such as Whatsapp, google form, g-school, google classroom, Instagram, and youtube, is learning application that is appropriate with class and student level. The evaluation of Information technology-based learning during the Covid-19 period is more emphasized on adjusting the use of digital media according to students' abilities and needs based on the class level to achieve the expected competencies.

## ACKNOWLEDGEMENT

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