
Optimizing Development Through Media Technology of Creativity in The New Normal Era

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Article History:

Received: April 19, 2022

Revised: April 20, 2022

Accepted: April 20, 2022

Keywords: *Digital Technology,
Education, Elementary school
teacher*

Abstract: *Knowledge and technology are an inseparable combination, always developing and giving rise to various new technologies. With the development of technology 4.0 which is very massive and fast, we are forced to be able to live in tandem with the development of digital technology, even in the field of education, the use of digital technology as teaching materials has grown rapidly. The training activities carried out at SDN 01 Caringin have the aim of sharing digital technology knowledge as part of classroom teaching media, to be more effective. By using audiovisual media, internet of things online games makes it easier for students to receive material presented by the SDN 01 Caringin teacher. Seeing the problems and needs of teachers, community service was carried out by holding technology empowerment training. Through this training, it is hoped that teachers can be more creative in utilizing digital technology to the fullest in teaching and be able to develop new teaching patterns in a fun teaching through digital technology.*

Introduction

The word technology according to the Greek "*technologia*" according to the Webster Dictionary means systematic treatment or handling of something systematically. While *techne* is the basis of the word technology which means art, ability, knowledge or expertise, scientific skills. Meanwhile, the technology according to the Greek language is *techne*, which means art, crafts, or expertise. For the ancient Greeks technology was recognized as a special activity, and as knowledge. Technology according to the Big Indonesian Dictionary (KBBI) is a scientific method to achieve practical goals; The whole atmosphere is to provide the goods needed for the survival and comfort of human life. Technology is a variety of purposes and various kinds of equipment or systems that function to provide comfort and convenience for humans. in the opinion of Miarso (2007) that is of the opinion that. Technologies are processes that increase added value. Running processes can use or make certain products, which are products that are not separate from existing products.

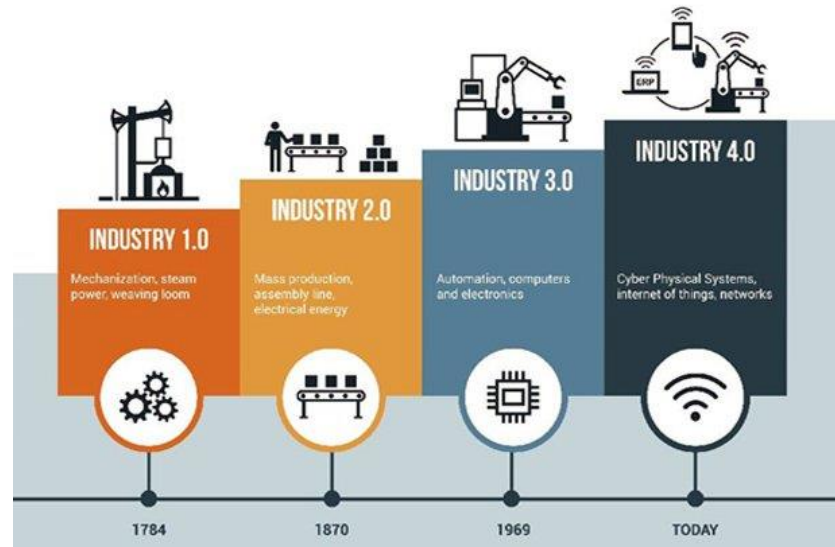


Figure 1. Technological developments.
(Source: nationalsindonews.com)

Science is developing rapidly in the current era of globalization; this technological development reveals the progress of the times. Technology is evolving at such a rapid rate that it has become a daily necessity for various age groups, from children to teenagers to young adults to parents, who use technology daily to exchange information and share things about their lives, in addition to their own channels on various platforms. Digital technology indirectly changes human patterns in carrying out activities, such as learning, exercising, lifestyle, shopping, and interaction. The following are the results of a survey conducted by the DKI Jakarta statistical service center which was carried out in 2019 using a quantitative method through a direct interview process who has an ID card (DKI Jakarta Identity Card).



Figure 2. Survey on the use of technology, information, and communication.
(Source: statistik.jakarta.go.id)

The development of digital technology has had a significant impact on the world of education. The world of education must swiftly adjust to the development of digital technology in terms of improving the quality of education and adopting digital technology in the process of teaching and learning in education. In the era of revolution 4.0, Educational Institutions are required to produce graduates who have the quality and ability to respond to market needs, therefore the use of digital technology is an absolute must. So, teachers as educators are required to be able to use digital technology to the fullest, especially as a media channel for delivering learning so that the learning process is more interesting, maximal, and professional.

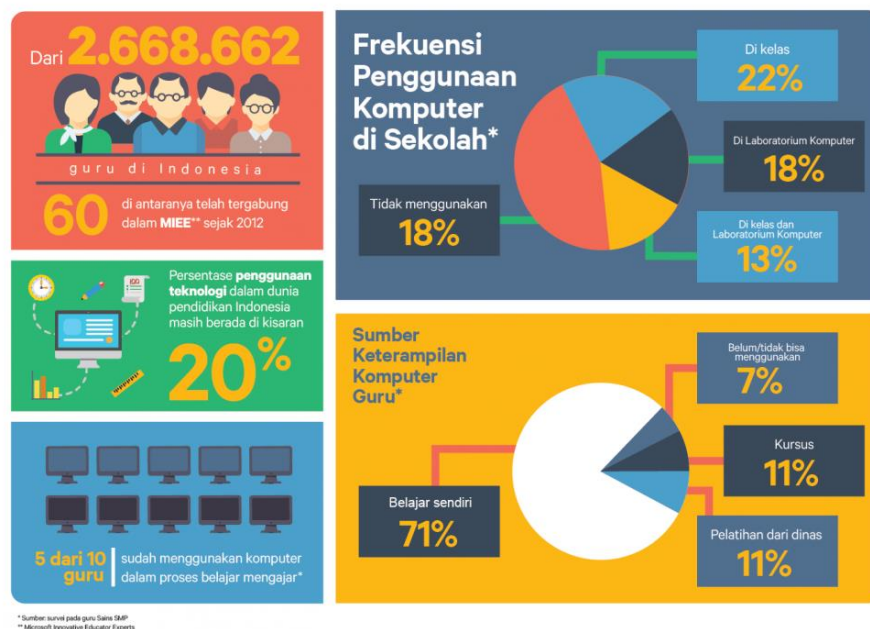


Figure 3. Teacher skills and use of ICT in schools
(Source: ruangguru.com)

In the current era of disruption, learning technology has developed rapidly, so it is hoped that using digital technology as a medium for learning will affect student achievement. With new technologies, the old manual methods of teaching are gradually being replaced with new innovative methods that are more creative so that the learning process can be more successful, various forms of media in improving the learning experience can be done using digital technology, where teachers can creatively utilize digital technology such as making digital games combined with learning materials, easy-to-understand e-learning, teaching aids in the form of animations so as to improve the learning process.

However, the various things described above have problems, where many teachers in schools use manual learning and do not keep up with the times. So that the material presented

is not interesting and monotonous. Many students have to adjust to learning outside of school. Based on the facts found in the field, this certainly motivates and initiates resource persons to carry out community service with the theme "Optimizing development through media technology of creativity in the new normal era", at SDN Caringin 01, Jl Kolonel Bustomi No. 1 Rt 02, Rw 02 Caringin Village Kec.Caringin Kab. Bogor.



Figure 4. SDN Caringin 01
(Source: Author)

Through this training, the goal is that SDN Caringin 01 teachers can use digital technology optimally and on target in the teaching and learning process of community service which was held in a workshop attended by 20 elementary school teachers. The objectives of community service activities in the form of workshops are to:

1. As a part of optimizing learning for students at SDN Caringin 01, teachers can take advantage of technology media.
2. Using technology media to optimize pedagogy at SDN Caringin 01, while also increasing the creativity of teachers and students.
3. Learn how to use the latest media such as Instagram, Tiktok, snack videos, and other latest media for supporting the learning process and improving student quality.
4. Understanding learning strategies that are fun and beneficial for students by using digital game media, so that learning is easy, fun, and enjoyable.

Method

This community service program is carried out with a workshop training method

accompanied by demonstrations so that teachers can better understand the essence of the material presented. The resource person who is a Sampoerna University lecturer on the opportunity given provides an understanding of the use and empowerment of digital technology media by maximizing smartphones and computers which are part of digital technology tools. Through this training workshop, it is hoped that the synergy between SDN Caringin 01 teachers and resource persons can broaden their horizons regarding the maximum use of technology within the Caringin 01 Elementary School and all parties who take part in the training/workshop carried out. The enthusiasm and enthusiasm of the teachers and the support of the principal of SDN Caringin 01, namely Mr. Drs. H. Sudaryat MM, in holding and participating in the workshop activities that were held, was a positive thing in opening wider horizons to know the developments of the era in the 4.0 era through digital technology.



Figure 5. Principal of SDN Caringin 01
(Source: Author)

The training/workshop activities are held on Wednesday and Thursday, 12 May 2021 and 13 May 2021 with a duration of 12 hours, from 10.00 am to 04.00 pm. The following is a table of the schedule or sequence of activities carried out at SDN Caringin 01, including:

Table 1. Rundown of activities at SDN Caringin 01

12 May 2021

No	Time	Speaker	Training materials	Information
1	10.00 – 10.15 WIB	Drs. H. Sudaryat MM	Opening speech	Principal of SDN Caringin 01
2	10.15 – 12.00 WIB	Santo Tjhin M.M., M.Ds., M.Cht	Indonesian Education Transformation	FET Lecturer With Quiz
3	13.00 – 16.00 WIB	Santo Tjhin M.M., M.Ds., M.Cht	Workshop on empowering digital technology through smartphones and computers optimally	FET Lecturer With workshops

13 May 2021

No	Time	Speaker	Training materials	Information
1	10.00 – 12.00 WIB	Santo Tjhin M.M., M.Ds., M.Cht & Keke putri Komalasari (VCD Student)	Game training using the Kahoot application as an educational medium	FET Lecturers & Students With workshops
2	13.15 – 14.30 WIB	Santo Tjhin M.M., M.Ds., M.Cht & Eros kuncoro (VCD Student)	Training using artificial intelligence (AI)	FET Lecturers & Students With Quiz
3	15.00 – 16.30 WIB	Santo Tjhin M.M., M.Ds., M.Cht	Quick draw and autodraw application workshops and code ocean application training.	FET Lecturers With Quiz

(Source: Author)

The material presented in the series of activities held included exposure to independent learning which was being launched by the government of the Republic of Indonesia and explained the main strategies of independent learning, creating creative and fun learning patterns (pedagogy) in educating elementary school children, explanations of teaching methods. in teaching elementary school children, training to optimally empower digital technology through smartphones and computers as teaching and communication media. Training to maximize teaching through games such as using the Kahoot application as an educational medium, training using the zoom application in the teaching process, training using artificial intelligence (AI) in educating elementary school children and strengthening STEM education from an early age. As well as the presentation of training on the use of quickdraw and auto draw applications in carrying out activities in the form of actions in increasing the creativity of elementary school children. And finally, code ocean application training is a fun teaching technology medium.



Figure 6. Enthusiastic teachers of SDN Caringin 01
(Source: Author)

The method of implementing community service activities is located on Jl Kolonel Bustomi No. 1, Rt 02, Rw.02 Caringin Village Kec.Caringin Kab. Bogor. using the facilities of the Caringin 01 Elementary School. The workshop was hosted by Bapak. Santo Tjhin MM., M.Ds., M.Cht., a lecturer at the Faculty of Engineering and technology, assisted by Sampoerna University students namely Eros Kuncoro and Keke Putri Komalasari who is a visual communication design student. The first session began with a theoretical understanding of the independent learning program and the main strategies for independent learning to primary school teachers who were present. This presentation aims to make teachers understand the technological, social, and environmental changes that are happening globally. In addition, teachers are invited to think about and create pedagogical patterns in teaching that are creative, and fun. Teachers are also required to make strategies for building a technology-based educational platform that is student-centered, interdisciplinary, relevant, project-based, and collaborative, guided by resource persons.

The second session of this workshop was about empowerment in optimally utilizing digital technology through smartphones and computers as teaching and communication media, teachers were invited to use their respective cellphones and computers and try to use the zoom feature as a communication medium in teaching students online, also as a medium of consultation between students and teachers through the zoom application.

The topic of discussion of this application was thoroughly peeled by the resource persons in the second session of the workshop. After understanding theoretically and how to create pedagogy in teaching, then proceed with understanding the use of the zoom application in a specific and in-depth manner, the next session is continued with questions and answers and reflections on what has been learned in 1 day, Wednesday, 12 May 2021.



Figure 7. Empowerment of digital technology through smartphones and computers
(Source: Author)

The third session was continued on Thursday 13 May 2021. In this session the teachers were invited to play using the Kahoot application, the teachers were asked questions about the material that had been given on Wednesday, after that the teachers were given an explanation of how to use the Kahoot application in teaching students. In elementary school, this material is given in detail, and it is hoped that teachers can make games using this application so that the classes being taught are creative and fun.

The next session was held after the break time, the fourth session was followed by training workshops on using artificial intelligence (AI) in educating elementary school children and strengthening STEM education for elementary school students at SDN Caringin 01. In this fourth session, the resource persons explained the difference between artificial intelligence (AI) and traditional programming as well as machine learning, as well as the reasons why it should be introduced to children from elementary education. The resource persons also provided material on future job opportunities in the field of artificial intelligence (AI).

The fifth session was carried out with training using the quickdraw and auto draw applications so that it could be applied to elementary school students where the purpose of this application was to increase the creativity of teaching students. In the final session, the resource persons with Sampoerna University students explained the application of Code Ocean as a fun teaching technology medium. Where the resource person provides knowledge about computer science which is more than just coding but also about artificial intelligence (AI), machine learning, and training data, while exploring ethical issues and how AI can be used to solve world problems. through the code ocean application teach more about AI.

Results

The world of education is the birthplace of technology so digital technology in the 4.0 era is not a foreign technology in the current era of disruption. Therefore, the maximum use of technology in the world of education is a must with the aim of facilitating the teaching and learning process. Where the role of technology in learning is to facilitate the formation of collaborative relationships between teachers and students and build meaning in a context that is easier to understand. The goals of digital technology in the world of education, namely:

1. Communication network between teachers, students, and learning resources can be built effectively and collaboratively.
2. Providing a variety of complex, realistic, and secure problem-solving environments. A variety of digital technology applications can be used to provide a comfortable environment for creating a work or project.
3. Build a sense of meaning through the internet by researching, taking photos, and watching videos. In addition to enjoying browsing, students can also learn, comprehend, and know what they are learning.

The benefits of implementing digital technology for the 01 Caringin public elementary schools include:

1. As the education system becomes more effective, it moves from being a traditional, exclusive system to an open, individualized system customized to each student's abilities and interests.
2. Can divide the study group into several groups. Such as large, small, and individual groups, according to the equipment and material being studied.
3. The wider community and students can enjoy the benefits of education through digital technology widely without being limited by place and time.
4. Digital technology in the world of education facilitates the delivery of information verbally and non-verbally.



*Figure 8. Use of ICT in schools
(Source: ruangguru.com)*

The explanation above stimulates the enthusiasm of teachers to utilize digital technology optimally. This encourages resource persons as lecturers at Sampoerna University with students to hold training in the form of workshops consisting of theoretical understanding of digital technology and intensive training in the form of workshops. The results of the implementation of community service in the form of training/workshops include:

1. Teachers are given explanations with an understanding of the independent learning program and the main strategies for independent learning launched by the government of the Republic of Indonesia.



*Figure 9. Independent learning program and main strategies for independent learning
(Source: Author)*

Through this theoretical training activity, it is hoped that teachers will better understand and gain new insights into the essence of independent learning, and teachers will

have the initiative in contributing to creating creative, fun teaching patterns through correct and always perfected pedagogy. The teachers were very enthusiastic in this session, this was known through the results of the survey given at the training session. The initial training session invites teachers to be active in empowering to create educational platform strategies with the aim that students are more active and maximize their learning in making projects and collaborating between disciplines through digital technology. In the training in this session, it was found that the training participants, namely the teachers of SDN 01 Caringin, were very enthusiastic and gained insight even though the material was theoretical material.



Figure 10. Session 1 of digital technology training/workshop
(Source: Author)

The resource persons tried to explain the theoretical material that had been updated in such a way, accompanied by using simple Indonesian language that was easy for the trainees to understand and understand. In this session, the speakers provided an understanding of the transformation of education in Indonesia starting from the knowledge of technological, social, and environmental changes that are happening globally. From the technology side, it starts with the technological disruption that has an impact on all sectors, including the application of automation, Artificial Intelligence, and Big data in all sectors. 5G connectivity that connects technologies such as Autonomous vehicles (tesla, drones, etc.). 3D printing, smart wearables, augmented and virtual reality (AR, VR).

The sociocultural side begins with changes in demographics, and the socio-economic profile of the world's population, including increasing life expectancy and long working age. Growing migration, urbanization, cultural diversity, and growing middle class. An increased workforce that is constantly mobile and flexible. The emergence of consumer concern for

ethics, privacy, and health. On the environmental side, starting with the depletion of fossil fuels, water crises, climate change, rising sea levels, including the increasing demand for energy and water and decreasing natural resources, increasing attention to alternative energy to fight climate change and sustainability efforts on environmental issues such as plastic and nuclear waste.

Furthermore, the resource persons explained further about independent learning as the main strategy as part of facing technological, social, and environmental changes. So that there are changes in learning, including:

1. Learning becomes a fun experience
2. Open system – this can be realized through cooperation between stakeholders.
3. The teacher is a facilitator in learning activities.
4. Pedagogy based on competence and values, curriculum.
5. Individual needs-based and student-centered approach.
6. Learning that makes maximum use of technology.
7. Industry-relevant learning programs.
8. Freedom to innovate.
9. As a change agent for all stakeholders.

Through the material presented, the resource person hopes to provide understanding and insight to the participants. There was a positive response from the participants who were elementary school teachers, this was indicated by the questions from the teachers to the resource persons regarding the explanatory material that had been given. This is of course very positive, and it can be concluded that the participants were curious and wanted to know various things about independent learning.

2. Training on digital technology empowerment through smartphones and computers optimally as teaching and communication media.

The next material presented by the resource person with the help of student assistants, explained the optimization of digital technology using smartphones and computers as teaching and communication media with students. The resource person explained material about the use of digital technology that can be used by educators, namely elementary school teachers, using the zoom application. The resource person invited SDN 01 Caringin teachers to practice zoom as a communication medium in teaching. The resource person explained in detail every technological feature contained in Zoom and the usefulness of the Zoom application so that teachers can use the Zoom application optimally in online teaching.

Not only comprehensively explaining the resource persons, but they also provide tips and tricks in using the zoom application, then invite the SDN 01 Caringin teachers to practice directly with students. The topic of this discussion was thoroughly discussed by the

resource person after providing an explanation of the importance of independent learning which was echoed by the government of the Republic of Indonesia as well as about pedagogy in teaching so that the students being taught became interested and happy to follow the subjects taught by the teacher. At the end of this session, the teacher is given the opportunity to discuss and ask questions about the material given.

3. Training on the Kahoot application as an educational medium in maximizing teaching through games so that learning becomes more fun.

In this session, on May 13, 2021, the teachers of SDN 01 Caringin were invited by resource persons and FET student assistants, namely Keke Putri Komalasari, who is a visual communication design student at Sampoerna University, to explore game applications that can be used in teaching. The Kahoot application is an application that is presented in this session, in the training session of this session, the resource persons provide detailed, step-by-step explanations about how to use the Kahoot application, this is because this application has abundant features in making fun games.

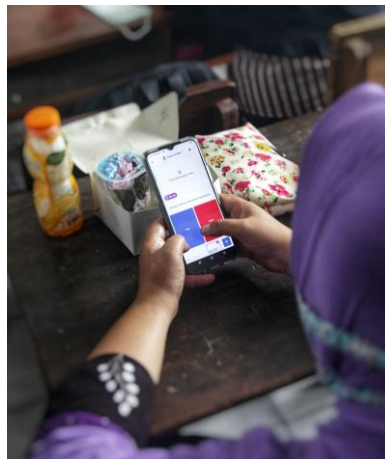


Figure 11. Kahoot application training as an educational medium
(Source: Author)

When teachers have been able to register and set up applications according to their uses, teachers are invited to make quiz questions that will be given to teaching students, the practice of making quiz questions is taught in stages so that teachers understand and understand how to make questions and apply them in the Kahoot application. The detailed and structured workshop materials are expected to open the knowledge and insight of SDN 01 Caringin teachers in optimally utilizing the Kahoot application. Through this third session of the

workshop, SDN 01 Caringin teachers are expected to be able to create questions or quizzes through fun, creative games and facilitate the learning process of SDN 01 Caringin students.



Figure 12. Kahoot application as an educational medium
(Source: author)

4. Training using artificial intelligence (AI).

In this session, after the game training session, through questions so that the educational process and giving quizzes or questions become more lively and interesting, the resource persons accompanied by student assistants namely Eros Kuncoro will provide workshops on the use of artificial intelligence (AI) in teaching so that the students being taught are helped by simulations are explained by utilizing visual technology. At the beginning of the session, the resource persons comprehensively explained the differences between artificial intelligence (AI) and traditional programming as well as machine learning, as well as the various reasons that the informants got in various educational journals, regarding the importance of introducing artificial intelligence (AI) to children from elementary education.

In the presentation that was carried out accompanied by examples of artificial intelligence (AI), the resource persons provided an understanding of job opportunities that would be created in the coming year, so that through this training, it is hoped that teachers will be more active in broadening their horizons on understanding artificial intelligence (AI) and students can learn earlier about artificial intelligence (AI).

5. Training using quick draw, auto draw, and code ocean applications.

The last session of the workshop was held at SDN 01 Caringin which was attended by the principal and teachers, resource persons assisted by FET Sampoerna University students provided training using quickdraw, auto draw, and code ocean applications which have the aim of developing cognitive thinking skills for elementary school children. Through this training, the resource persons have the aim that teachers can take advantage of this application in developing critical and creative thinking skills.

In this last session, training resource persons provided knowledge about computer science not only about coding but also about artificial intelligence (AI), machine learning,

and training data while exploring ethical issues and how artificial intelligence can be used to solve world problems. The Code Ocean application, it teaches more about artificially intelligent AI, and it is easier for students to understand. This last training session received a very positive response, this was shown by the many questions about artificial intelligence that were more in-depth in the process of educating students.

Conclusion

Technology plays an important role today, where the teaching and learning process becomes more structured and has more value in helping teachers carry out the teaching process. The way of learning has now shifted towards a more creative one where the involvement and activeness of students in the teaching and learning process are important, in supporting the learning process. Teachers and students are required to be able to use teaching and learning facilities and resources that are widely available in various technological media. With the training held from ignorance, participants will be free to learn and use digital technology in teaching and learning, now after the training/workshop, which was held for 2 days, the participants, namely the SDN 01 Caringin teacher, have understood, understood the role and used digital technology to support independent learning. Training/workshops held at SDN 01 Caringin can have a positive impact in providing understanding to SDN 01 Caringin teachers about the importance of digital technology in the teaching and learning process so that teachers and students can collaborate in facing the era of globalization.

Acknowledgments

The training/workshop that was held certainly had a positive impact, not only on the teachers at SDN 01 Caringin, but also a positive impact on the Sampoerna University students who took an active role in the workshops held because the students could practice the learning, they got on campus by sharing their knowledge. obtained from the teachers. The resource persons are very grateful that this workshop activity can run well and has benefits for the continuity of teaching at SDN 01 Caringin. This workshop activity can be carried out properly with the support and motivation of the leadership of the Sampoerna University, namely, Ibu. Endriyani Widyastuti and Bapak. Surya Danusaputro Liman who have given trust and permission to resource persons and students in organizing training/workshops during the covid 19 pandemic.

Support and assistance Information and enthusiasm were also given by Bapak. Iwan Setiawan as head of CRCS and Ibu. Dian Rahmawati as Research Assistant of CRCS in this training/workshop activity. So that the training held at SDN 01 Caringin can be carried out well and there are no significant problems. In the process of implementing the training/workshop, they also received support and permission from the principal of SDN 01 Caringin, namely Bapak Drs. H. Sudaryat MM., is very supportive and provides space for resource persons and teachers to share information about the development of the world of education and the use of digital technology in the teaching and learning process. The resource persons were grateful for

the participation of the SDN01 Caringin teachers who had played an active role in participating in the training/workshop which was held from beginning to end.

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