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ACTIVE DISTANCE LEARNING TO IMPROVE KINDERGARTEN TEACHERS' COMPUTATIONAL THINKING SKILLS

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Abstract: *Computational thinking is an essential concept that has attracted the attention of early childhood educators over the last decade. However, not all kindergarten teachers have yet obtained information and ideas related to computational thinking skills. This study attempts to determine the effectiveness of active distance learning using a zoom video conference application in improving teachers' computational thinking skills, impacting learning outcomes in early childhood. Furthermore, it also examines the teachers' progress in learning computational skills through online coding websites such as code.org and ScratchJr. A hundred and sixty-three kindergarten teachers from Central Java Province in Indonesia participated in the study. The study used a quantitative approach and employed a pre-experimental design, one group pretest and a post-test study. The data were gathered through pretest, post-test, and reflection of assignment records. We employed the Wilcoxon test because our data are on the ordinal scale. Wilcoxon signed-rank test was utilized to find out the significance of distance learning. The results show active distance learning effectively enhances teachers' computational thinking skills, including decomposition, pattern recognition, abstraction, and algorithm design. Moreover, active distance* *learning provides an impressive experience to participants in improving their mastery of computational thinking.*

Keywords: *Computational thinking, Distance learning, Kindergarten, Teacher*

A. Introduction

Educational paradigms and practices today have changed from initially providing information to students (ready to users) to the ability to find out digital literacy, problem solving and creativity. Therefore, current technological developments are challenging and new opportunities for learning the industrial revolution 4.0. It is reinforced by (Permendikbud, 2016), who states in one of the principles of learning, it is necessary to bring up the use of technology to increase the effectiveness and efficiency of learning. This rule certainly encourages academics and teachers to create and utilize learning media so that students better understand a learning material (Pratama et al., 2019). In addition, when teachers can increase their capacity, their performance in school will also increase (Yusnita et al., 2018). It is evidenced by the lack of learning activities that can stimulate the teacher's computational thinking.

Various learning media can be developed with technology. Research results show that technology can help students understand learning (Huang et al., 2019). One form of media designed for learning is educational games. (Legerén Lago, 2017) states that a fun-designed learning approach with games is proven to have a positive impact on learning activities. But in reality, the practice that occurs a lot is that there are not many media developed by early years teachers.

Using educational games in learning activities has become a pro and contra. On the one hand, arguing that games can interfere with the learning process in the classroom, but on the other hand, educational games bring a lot of positive potential to learning activities (Sulisworo, 2013). However, in this era, educators and stakeholders understand that educational games have provided various opportunities for more interesting and varied learning. In addition to learning with an educational game approach to be fun for children and have a positive impact, it is acceptable that educational games are used as facilities in learning activities (Kadry & Roufayel, 2017).

Learning in kindergarten is learning that is designed to be fun for children. Ideally, learning in kindergarten is to use a variety of media to attract attention and curiosity. There are so many types of media that teachers can use in learning activities, one of which is educational games. Educational games aim to attract attention so that children can easily accept the message or material conveyed by the teacher. The advantages of using educational games are the visualization of real problems. In the game, some animations can improve memory so that children can retain information longer than conventional learning (Vitianingsih, 2017).

Currently, making educational games can be quickly done by teachers. Teachers can learn and develop coding-based games, including by utilizing the code.org (http://code.org) and scratch (http://www.scratchjr.org/) sites, which can be used to create online games or download the application can be used offline. The Massachusetts Institute of Technology (MIT) has proven that games can improve children's logical ability and understanding of a project made from scratch coding so that it can support the educational process (Clark, 2006) as cited in (Vitianingsih, 2017).

The development of educational games for kindergarten children can be done by coding. It is related to instructions that computers understand and execute, interpreted as how humans communicate with computers by creating software or applications that are useful for solving problems. However, in early childhood education, coding is interpreted more broadly, not only in learning using a computer (plugged) but also in learning without a computer (unplugged) or a combination of the two. Therefore, the meaning of coding in the context of learning in early childhood is a conscious and planned effort to realize the personality of students, both attitudes, knowledge, and skills related to learning coding from an early age to strengthen the competence of students in the field of basic literacy, as a foothold in realizing Pancasila students from an early age in line with national education goals (Hasbi et al., 2020). In this case computational thinking which involves logical reasoning in solving problems is in line with one of the main characteristics of Pancasila students, namely “Critical Reasoning” which means the ability to objectively build relationships between various information, analyze information, evaluate and conclude it.

Learning coding in early childhood is also interpreted as a computational thinking process, a problem-solving process consisting of decomposition, pattern recognition, abstraction, and algorithm design. It broke down the problem into smaller parts, so the big problem is easier to solve. Pattern recognition is looking for similarities and differences in the issue to recognize its patterns. Abstraction focuses only on the main problem and ignores less critical/unrelated information. Algorithm design is simple detailed steps or rules to solve each problem that can be designed as flowcharts or computer programs (Hasbi et al., 2020).

Training activities are necessary for kindergarten teachers in developing coding-based educational games. The training experience can be used in classroom learning to balance all dimensions of competence, intelligence and developmental scope for each early childhood. Furthermore, it can foster a sense of curiosity, strengthen obedience to the rules, increase creativity, shape a flexible personality (flexible), as well as high collaborative awareness, logical abilities, and Higher-order thinking skills, known (HOTS). As stated in the previous research, teachers have an essential role in designing learning that stimulates higher-order thinking skills and is reflected holistically in the lesson plan (Haryati et al., 2021).

There are 14,121 Kindergarten institutions in Central Java Province with details of 164 State Kindergartens and 13,957 Private Kindergartens and has as many as 32,189 Kindergarten teachers with more information of 436 male teachers and 31,753 female teachers (Kementerian Pendidikan Kebudayaan Riset dan Teknologi, 2021). We invite one hundred and sixty-three kindergarten teachers from Central Java Province in Indonesia to participate in active distance learning using the zoom video conferencing application to improve the computational thinking skills of kindergarten teachers. Next, we researched the effectiveness of distance learning.

Based on the description above, this study aims to determine the effectiveness of active distance learning using a zoom video conference application in improving teachers' computational thinking skills. Furthermore, it also examines the teachers' progress in learning computational skills through online coding websites such as code.org and ScratchJr.

B. Method

The study used a quantitative approach and employed a pre-experimental, one group pretest and a post-test study. Pre-experimental design is a research design that involves a group that is given a pre- and post-test. This one group pretest and posttest design was carried out on one group without a control or comparison group. The data were gathered through Google forms with 15 questions for pretest, post-test, and reflection of assignment records. Previously, the questionnaire had been used in another study (Waluyo et al., 2019). It was about the level of digital literacy understanding of kindergarten teachers in Central Java Province. The validity and reliability test had already been tested. We used a Google spreadsheet to summarize data from 163 voluntary respondents. Wilcoxon test or Wilcoxon signed-rank test was utilized to determine the significance of distance learning. We employed the Wilcoxon test because our data are on the ordinal scale. It is part of non-parametric statistics, so normally distributed research data are not required in this study. In addition, analysis was executed by using IBM SPSS 26 statistics software.

C. Result and Discussion

Distance Learning to Improve Teachers' Computational Skills

There are 163 kindergarten teachers in Central Java Province involved in this research. From the data collected, the teacher's overall ability before the research activity averaged 61.89%, while after the research activity, the average became 84.36%. Nevertheless, we cannot necessarily say that these results are significant. These results must be tested with statistics (see Table 3). There are 15 indicators assessed (see Table 1). The Wilcoxon test is then executed for each indicator to determine whether there is a significant difference in the average of two paired samples. From Table 1, we can see that all indicators Asymp. Sig. (2-tailed) were .000 < α (.01). We conclude that there were significant differences in coding learning pretest and post-test outcomes. In other words, the treatment of active distance learning significantly improved Kindergarten Teachers' computational thinking skills at a .01 level of significance in all indicators. The complete results are in the following table:

Table 1. Result of Wilcoxon Statistics

No	Indicators	SD	Asymp. Sig. (2-tailed)
1	Level of understanding of the meaning of learning coding	1.042	.000
2	Level of understanding of the objectives of learning coding	1.075	.000
3	Level of understanding of the scope of learning coding	.995	.000
4	Level of understanding of the impact of learning coding	.999	.000
5	Level of understanding of integration learning coding	.986	.000
6	Level of understanding of how to develop daily lesson plan of learning coding	.987	.000
7	Level of understanding of the position of learning coding	1.046	.000
8	Level of understanding of the principles of learning coding	1.062	.000

No	Indicators	SD	Asymp. Sig. (2-tailed)
9	Level of understanding of learning methods/ activities coding	1.103	.000
10	Ability to develop media and learning resources in learning coding	1.037	.000
11	Ability to use media and learning resources in learning coding	1.071	.000
12	Level of understanding of the concept of coding learning assessment	.995	.000
13	Level of understanding of p coding learning assessment techniques	.979	.000
14	Ability to develop unplugged coding	.952	.000
15	Ability to develop plugged coding	1.033	.000

SD: standard deviation

The Wilcoxon rank output shown in table 2 can be seen in more detail for each negative, positive, and tie. As seen in the 15 indicators, the ranking of positive values is always the highest compared to negative ratings and ties. It indicates that most participants got a higher score in the post-test than in the pretest in every indicator. For example, the highest positive rank shows in indicator 1. The positive rank number 122 means 122 participants experienced increasing scores from pretest to post-test. Moreover, the sum of positive ranks equals 7774.50, with an average increase of 63.73. However, the result of Indicator 1 shows 3 negative ranks meaning that 3 participants experienced a decrease from the post-test value to the pretest value. The average decline is 33.50, while the sum of negative ranks is 100.50. Meanwhile, indicator 1 also shows the number of ties or the same value for pretest and post-test. 38 participants gained the same score during the pretest and post-test.

Another example is in Indicator 13. It shows the negative rank was 0 and means that none of the participants got a higher pretest score than the post-test. Moreover, positive rank number 117 shows that 117 participants gained higher scores in the post-test compared to pretest with an average increase of 59.00, and the sum of positive ranks is 6903.00. However, Indicator 13 shows that the ties number is 46. It means 46 participants got the same scores for both pretest and post-test.

Table 2. Result of Wilcoxon Ranks

		N	Mean Rank	Sum of Ranks
Indicator 1	Negative Ranks	3	33.50	100.50
	Positive Ranks	122	63.73	7774.50
	Ties	38		
	Total	163		
Indicator 2	Negative Ranks	7	34.50	241.50
	Positive Ranks	118	64.69	7633.50
	Ties	38		
	Total	163		
Indicator 3	Negative Ranks	6	34.50	207.00
	Positive Ranks	119	64.44	7668.00
	Ties	38		
	Total	163		
Indicator 4	Negative Ranks	7	33.50	234.50
	Positive Ranks	112	61.66	6905.50
	Ties	44		
	Total	163		
Indicator 5	Negative Ranks	5	35.00	175.00
	Positive Ranks	119	63.66	7575.00
	Ties	39		
	Total	163		

		N	Mean Rank	Sum of Ranks
Indicator 6	Negative Ranks	3	32.50	97.50
	Positive Ranks	113	59.19	6688.50
	Ties	47		
	Total	163		
Indicator 7	Negative Ranks	5	35.00	175.00
	Positive Ranks	115	61.61	7085.00
	Ties	43		
	Total	163		
Indicator 8	Negative Ranks	6	30.50	183.00
	Positive Ranks	112	61.05	6838.00
	Ties	45		
	Total	163		
Indicator 9	Negative Ranks	5	30.00	150.00
	Positive Ranks	112	60.29	6753.00
	Ties	46		
	Total	163		
Indicator 10	Negative Ranks	4	31.50	126.00
	Positive Ranks	114	60.48	6895.00
	Ties	45		
	Total	163		
Indicator 11	Negative Ranks	6	43.75	262.50
	Positive Ranks	118	63.45	7487.50
	Ties	39		
	Total	163		
Indicator 12	Negative Ranks	3	32.00	96.00
	Positive Ranks	117	61.23	7164.00
	Ties	43		
	Total	163		
Indicator 13	Negative Ranks	0	.00	.00
	Positive Ranks	117	59.00	6903.00
	Ties	46		
	Total	163		
Indicator 14	Negative Ranks	3	32.00	96.00
	Positive Ranks	117	61.23	7164.00
	Ties	43		
	Total	163		

		N	Mean Rank	Sum of Ranks
Indicator 15	Negative Ranks	6	34.00	204.00
	Positive Ranks	110	59.84	6582.00
	Ties	47		
	Total	163		

The Teachers' Progress in Learning Computational Skills through Online Coding Websites: Code.org and Scratchjr

Training activities

This training activity was carried out online using the zoom application. The training was carried out for two days, October 7 – 8, 2021, resulting in 133 products. On the first day, the activity was scheduled with material, discussions, and examples of product development, while on the second day, the activity was scheduled with assignments where participants made one of the coding learning products.

The first day's activity of active distance learning was to deliver conceptual material about the development of coding-based educational games. The material presented includes electronic-based coding (plugged coding) and nonelectronic-based coding (unplugged coding). In detail, it can be explained as follows:

1. Plugged coding

   The meaning of plugged coding is learning to code by utilizing electronic devices such as the use of computers, smartphones and robots. Learning coding online with a computer is practiced in this training activity using the scratchjr.org site. This site is intended for children aged 5 – 7 years with English language guidance. This site's output is that children can produce games or games made by them. Teachers receive training related to the use of the site, hoping they can teach their respective students. The scratchjr.org site can also be used on smartphones by downloading the application on the play store. Participants also received material for developing games using the Microsoft office powerpoint application in this electronic coding.

2. Unplugged coding

   Coding without electronics is learning to code by not using electronic devices, but using materials from the surrounding environment, such as paper, blocks, loose parts, used goods, and other natural materials. In general, this unplugged coding has been widely implemented by teachers in school, including activities related to patterns and the introduction of processes or sequences of activities that children in kindergarten institutions can carry out.

Mentoring activities

Mentoring activities were carried out after the training was completed. Participants could discuss the difficulties experienced when practicing the material in the field. Mentoring activities were also carried out together to see the extent of the implementation carried out by teachers and how the teacher responded to the training in developing coding-based educational games.

Review of training activity results

Based on the results of the mentoring meeting, the teacher as the activity participant expressed satisfaction and pleasure with the coding-based educational game development training activity. Participants felt happy because they had gained new knowledge and were allowed to learn together. They hoped that the following training could be carried out with a greater number of participants and a longer duration. Considering this coding development training was relevant to the conditions of today's digital society.

After implementing a series of training activities, participants were asked to fill out instruments related to their level of understanding and response. Based on table 3, it can be seen that the average teacher's understanding of learning coding was 61.89%. After attending active distance learning, the average teacher's understanding of learning coding was 84.36%. From the result, there was an increase of 22.47%.

Table 3. The percentage of participants' understanding before and after the training activities

No	Indicators	Before Training (%)	After Training (%)
1	Level of understanding of the meaning of learning coding	62,69	86,50
2	Level of understanding of the objectives of learning coding	63,93	86,99
3	Level of understanding of the scope of learning coding	61.84	84,42
4	Level of understanding of the impact of learning coding	65,40	86,13
5	Level of understanding of integration learning coding	62,09	84,54
6	Level of understanding of how to develop daily lesson plan of learning coding	61,23	82,82
7	Level of understanding of the position of learning coding	61,47	83,56
8	Level of understanding of the principles of learning coding	61.35	83,68

No	Indicators	Before Training (%)	After Training (%)
9	Level of understanding of learning methods/ activities coding	63,19	86,26
10	Ability to develop media and learning resources in learning coding	62,82	85,40
11	Ability to use media and learning resources in learning coding	63,80	86,63
12	Level of understanding of the concept of coding learning assessment	60,00	82,94
13	Level of understanding of p coding learning assessment techniques	58,77	82,21
14	Ability to develop unplugged coding	60,00	82,33
15	Ability to develop plugged coding	60,37	80,98
	Average	61,89	84,36

Discussion

The results of this study show an increase in the teacher's ability to master active distance learning. In addition, the teacher also understands the process and learning objectives, which is evidenced by an increase in computational thinking skills. It is important because the teacher's current needs in this lesson are journal publications on scientific writing.

In the 21st century, learning needs to be designed to prepare children to be able to face the future. The indicator of this century's learning is that children are expected to have the ability to think critically, creatively, communicatively and collaboratively. One of the academic units' efforts is to carry out learning activities that invite children to think computationally (computational thinking), namely, solving problems consisting of decomposition, pattern recognition, abstraction and algorithm design. It can also be interpreted as a thought process needed in formulating a problem accompanied by a solution (Wing, 2011).

Decomposition is an effort to solve problems by mapping the problem into smaller parts so that large problems become easier to solve. Pattern recognition is looking for similarities and differences in the problem to recognize its patterns. Abstraction is problem-solving by focusing on the main problem and eliminating less important information to find a solution to the problem and apply it to new problems. In comparison, the last one is the algorithm, which is simple and detailed problem-solving steps or rules to solve each problem that can be designed as flowcharts or computer programs (Hasbi et al., 2020).

Learning activities that invite children to think computationally can be done through learning coding. Codings are commands or instructions that are understood and can be executed by the computer. (Hasbi et al., 2020) explains the concept of coding in the context of learning in the early childhood education institution is interpreted more broadly, openly and flexibly, namely as a conscious and planned effort in realizing the personality of students, both attitudes, knowledge, and skills related to learning coding from an early age to strengthen the competence of students at an early age. Basic literacy as a foothold to realizing *Pancasila* (the five foundational philosophical theories of Indonesia) for students from an early age aligns with the goals of national education.

The implementation of coding learning in the early childhood education institution is not only learning that uses computers/information technology (plugged coding) but also learning can be done without using technology (unplugged coding). Learning can also be set by combining both plugged and unplugged coding. Teachers have done a lot for unplugged coding in early childhood educational institutions because this activity is related to activities that invite children to solve various problems. An example of unplugged coding is a board game or any game with instructions from the teacher for the child to respond to a command. While an example of plugged coding is game development using Scratchjr. It is a site or application in the form of visual programming developed by MIT to create animations, various games and interactive media (Vitianingsih, 2017). In this activity, gadgets are used by children as a tool to complete the learning process. Moreover, the use of gadgets can increase children's interest in the learning process (Salis Hijriyani & Astuti, 2020).

The process of coding learning activities in early childhood education programs institutions needs to pay attention to the four main keys to learning to code such as a) coding learning does not stand alone but is still an integrated unit with the curriculum and learning activities, b) the integration of coding learning lies in the context and content of learning, c) can be implemented effectively and efficiently, not only a mere formality, and d) the main objective is to strengthen the competence of students in the field of basic literacy by realizing *Pancasila* students in line with national education goals. The government has socialized coding learning since 2020. Until now, many early childhood education institutions still need information about the concept and implementation of coding learning. This training activity provides information about the need for such information, with the hope that early childhood education programs and teachers have an idea that can be implemented in their institutions. Finally, the good cooperation of the training team and the active participation of the participants in the training activities made everything go as planned.

D. Conclusion

Coding-based educational game development training for kindergarten teachers in Central Java has been carried out through virtual zoom meetings without significant obstacles. Active distance learning is a method that is increasingly popular in pandemic conditions. The results of this study show the novelty that early years teachers, especially those in Central Java Province, can adapt to the active distance learning method, which has not been discussed in previous studies. It has provided benefits for partners, especially increasing early years teacher understanding of the concept, implementation and development of coding-based educational games. It was proven with the analysis Wilcoxon test that before and after training, participants experience a significant difference in understanding their computational thinking skills.

This study also offers some implications related to the benefit of active distance learning. Participants responded positively to this training activity, especially during a pandemic or transition into new normal era. They got a chance to have group discussions and peer feedback in the Zoom breakout room. The participants showed their enthusiasm and hoped that the training could be carried out again with a larger number of participants because currently, there are still many kindergarten teachers who need information and training related to coding learning in early childhood educational institutions.

Moreover, some limitations of this study should be stated, first, related to data for statistical analysis that involved only pretest and post-test. Hence, interviews or focus group discussions should be implemented in further research, especially to get participants' feedback. Second, the data were also taken only from two days of activity. Further research might apply longer duration. Finally, the data type in this study used an ordinal scale. Henceforth, ratio-type data could be used for the following study to implement paired sample t-test because parametric statistics might provide different findings and insights.

References

Haryati, S., Trisnowati, E., Siswanto, S., & Al Firdaus, M. M. (2021). Identifying Higher-Order Thinking Skills on Lesson Plan: How Do Teachers Construct the Lesson Plan? *Tadris: Jurnal Keguruan Dan Ilmu Tarbiyah*, *6*(2), 277–285. https://doi.org/10.24042/tadris.v6i2.8828

Hasbi, M., Mumpuni, N. D., Mudarwan, Warsito, I. H., Wahyuni, M., & Sylvia, N. (2020). *Modul 3: Metode/Kegiatan, Media dan Sumber Belajar dalam Pelaksanaan Pembelajaran Coding di Satuan PAUD*. 1–40.

Huang, B., Hew, K. F., & Lo, C. K. (2019). Investigating the effects of gamification-enhanced flipped learning on undergraduate students' behavioral and cognitive engagement. *Interactive Learning Environments*, *27*(8), 1106–1126. https://doi.org/10.1080/10494820.2018.1495653

Kadry, S., & Roufayel, R. (2017). How to use effectively smartphone in the classroom. *2017 IEEE Global Engineering Education Conference (EDUCON)*, 441–447. https://doi.org/10.1109/EDUCON.2017.7942884

Kementerian Pendidikan Kebudayaan Riset dan Teknologi. (2021). *Rekapitulasi Data Pokok Pendidikan Nasional*. PAUD. https://dapo.kemdikbud.go.id/

Legerén Lago, B. (2017). *Al-Kimia: How to Create a Video Game to Help High School Students Enjoy Chemistry BT - Serious Games and Edutainment Applications : Volume II* (M. Ma & A. Oikonomou (eds.); pp. 259–272). Springer International Publishing. https://doi.org/10.1007/978-3-319-51645-5_11

Permendikbud. (2016). *Peraturan Mentri Pendidikan dan Kebudayaan Nomor 22 Tahun 2016 Tentang Standar Proses Pendidikan Dasar dan Menengah*.

Pratama, L. D., Lestari, W., & Bahauddin, A. (2019). Game Edukasi: Apakah membuat belajar lebih menarik? *At-Ta'lim : Jurnal Pendidikan*, *5*(1), 39–50. https://doi.org/10.36835/attalim.v5i1.64

Salis Hijriyani, Y., & Astuti, R. (2020). Penggunaan Gadget pada Anak Usia Dini dalam Menghadapi Era Revolusi Industri 4.0. *ThufuLA: Jurnal Inovasi Pendidikan Guru Raudhatul Athfal*, *8*(1), 015. https://doi.org/10.21043/thufula.v8i1.6636

Sulisworo, D. (2013). The Paradox on IT Literacy and Science's Learning Achievement in Secondary School. *International*

Journal of Evaluation and Research in Education (IJERE), *2*(4). https://doi.org/10.11591/ijere.v2i4.2732

Vitianingsih, A. V. (2017). Game Edukasi Sebagai Media Pembelajaran Pendidikan Anak Usia Dini. *Inform : Jurnal Ilmiah Bidang Teknologi Informasi Dan Komunikasi*, *1*(1). https://doi.org/10.25139/inform.v1i1.220

Waluyo, E., Rahmadani, N. K. A., Hasjiandito, A., & Wantoro. (2019). IGTKI Website Development as Kindergarten Teachers' Digital Media Literacy in Central Java Province. *2019 5th International Conference on Education and Technology (ICET)*, 98–101. https://doi.org/10.1109/ICET48172.2019.8987217

Wing, J. M. (2011). *Computational thinking*. *January*, 3–3. https://doi.org/10.1109/vlhcc.2011.6070404

Yusnita, Y., Eriyanti, F., Engkizar, E., Anwar, F., Putri, N. E., Arifin, Z., & Syafril, S. (2018). The Effect of Professional Education and Training for Teachers (PLPG) in Improving Pedagogic Competence and Teacher Performance. *Tadris: Jurnal Keguruan Dan Ilmu Tarbiyah*, *3*(2), 123. https://doi.org/10.24042/tadris.v3i2.2701