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The effectiveness of parental assistance-based online learning model on self-efficacy

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ABSTRACT

The obstacles experienced during online learning are inevitable circumstances. Hence, students need to have motivational beliefs that they have the ability to thrive in online learning despite its difficulties. Applying parental-based online learning is expected to help students increase their self-efficacy. This study examines the effect of using an online learning model based on parental assistance on students' self-efficacy with a quantitative approach. This type of research is quasi-experimental, with a pre and post-test control group design by studying seventh-grade students in several public junior high schools in Kisaran. The study found that applying an online learning model based on parental assistance improved students' self-efficacy more than a conventional online learning model. Consequently, parental assistance will make a practical contribution to the implementation of learning, especially in the implementation of online learning in the era of the pandemic and after the COVID-19 pandemic.

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1. INTRODUCTION

The whole world is currently experiencing significant challenges with the COVID-19 pandemic. One sector that has felt the impact of COVID-19 is the education sector [1]–[5]. Efforts that have been made to implement physical distancing include closing schools, offices, and entertainment venues. School closures due to students are considered chains of COVID-19 spread [1], [6], [7]. This condition prompted the Indonesian government to release a policy of learning at home through online learning because online learning is easy to do during the pandemic [8] The Indonesian government does not specify an online learning model that teachers must do. Hence, teachers have to be more creative with online learning. As learning directors [9], teachers must design and implement the learning process well to ensure and maintain the quality of online education.

Information technology has emerges to support the implementation of online learning during this pandemic by facilitating online classes [10], [11]. Moreover, teachers often use information technology media to improve students' learning experience [12]–[15]. Using technology as a learning medium can also increase students' interest in learning [13], [14], [16]. In Indonesia's educational process, online learning attainment faces many obstacles. Significant challenges for educators are: i) the problem of the inability of the internet network; ii) the lack of teacher training in online learning; and iii) a need for more awareness among teachers and students of online learning. Lack of knowledge about online learning is considered the most important reason for those who choose not to adopt online learning, followed by a lack of interest and

doubts about the benefits of online learning. Lack of presence, lack of special touch, and lack of interaction due to connectivity issues are widely considered to be significant disadvantages of online learning.

At the beginning of the implementation of online learning in Indonesia, many teachers used the Zoom application as a learning medium [17]. Using Zoom absorbs a lot of internet quota, costing users more money to operate the Zoom. Hence, online learning media with low bandwidth as a substitute for the Zoom application is necessary. As shown by Table 1, Ghirardini conveyed the use of bandwidth in learning in 2011.

Table 1. A rough estimate of connection speeds required by various e-learning formats [16]

E-learning format	Speed of internet connection required to display/use
Video conferencing, live webcasting	From 100 Kbps to 2 Mbps
Audio conferencing	From 56 Kbps to 128 Kbps
Application sharing, animations	From 256 Kbps to 1 Mbps
Whiteboard, slides	From 56 Kbps to 384 Kbps
Chat, instant messaging	128 Kbps
E-mail, discussion forums, screens with text and images	From 56 Kbps to 128 Kbps

Using large bandwidth can be an obstacle because the pandemic dramatically affects the community's economy. The pandemic has weakened the economy, forcing parents to split their attention between their children's education and the family's economic condition [18]. This condition will further reduce parents' concern for their children's education. Even before the pandemic, some parents needed to pay more attention to their children's education. The pandemic will undoubtedly reduce parents' concentration on their children's education. The low level of parental engagement in their children's learning also occurs in Kisaran City, North Sumatra Province, Indonesia [19].

School, a place of formal learning for a student, is expected to provide more mental development. However, this need still needs to be fulfilled. The existence of schools as the heart of education cannot be denied. Excellent or lousy knowledge depends on the teacher. The function of the teacher is not only as an educator but also as a mentor, role model, pleasant personality, researcher, and creativity booster. Collaboration between educators and parents is the key to successful online learning. Educators and parents are expected to synergize in the success of online learning during the pandemic [20]. The planned educational process will only be realized with the cooperation between parents and teachers.

During the COVID-19 pandemic, implementing physical distancing made parents hesitant to send their children to school or bring home private teachers. This condition makes learning even more complex. The only hope for learning lies in the online education provided by the teacher. In online learning, parents are not directly involved. Thus, parents cannot control their children's learning. Students' awareness of independent learning dominates the effectiveness of online learning. This condition can decrease student learning outcomes, especially for students who do not realize the importance of studying during a pandemic. Therefore, this study aims to determine the effect of using an online learning model based on parental assistance to encourage students to learn independently at home during the pandemic.

Online learning is an activity carried out without face-to-face meetings between teachers and students, which are carried out in the network. In online learning, teachers and students are in separate places. This is intended to create flexible learning interactions, accessibility, and connectivity [21], [22]. Online learning that uses the internet network also certainly has strengths, obstacles, and challenges, as well as positive and negative impacts. Acceleration and transformation into a positive impact on the world of education, increasing interest in research, all learning can be carried out with several types of media that support online teaching and learning. Online discussion activities are starting to appear with free access. Examples of activities are seminars held online.

The obstacles experienced during online learning [23], [24], include: i) the learning media used by the teacher is always monotonous and makes students feel bored; ii) various ranges of students' location that is not yet accessible by internet connection network; iii) inadequate internet quota for students; iv) learning tends to be more passive; v) difficulty to control students' behavior; vi) learning dominantly directed to online assignments; vii) students' assignments have piled up. Other obstacles experienced are the low grasp of lessons, and the need for an adequate teacher to assess materials. Other research describes the problems teachers face in online learning involving the use of learning applications, management, internet connection networks, assessment, and monitoring of learning.

As those obstacles in online learning happen inevitably, students also need to consider how to cope with explained difficulties. In order to conquer and thrive in online learning during the pandemic, students must have motivational beliefs. Motivational beliefs such as self-efficacy are critical factors that could drive students' learning [25]. In general, self-efficacy represents one's assessment of their capacity to coordinate

thoughts, feelings, and behaviors in order to achieve a desired result. Students with high self-efficacy recognize failure experiences as challenges rather than threats [26] Accordingly, this also indicates higher persistence intentions in learning. Having parental-based online learning is expected to increase students' self-efficacy during online learning.

2. RESEARCH METHOD

This study applies a quantitative approach. Moreover, this study uses a quasi-experimental by using descriptive data. This data was collected to obtain student self-efficacy in applying parental assistance-based online learning models. This research was conducted in two classes: the experimental and control classes. The experimental class gets online learning with the parental assistance learning model [19], while the control class uses online learning without the parental assistance learning model.

This research was conducted in Kisaran City, North Sumatra Province, Indonesia. The population of this study was all seventh-year students in several public junior high schools in the city of Kisaran, totaling 1,696 students. The population distribution is shown in Table 2. We use a purposive sampling technique, in which sample members are chosen intentionally based on the knowledge and beliefs of the researcher. Two classes were taken from each school: the experimental and control classes. The sampling of the two classes is based on the average value of students in each similar sample class. The instrument in this study used a self-efficacy questionnaire to measure students' self-efficacy.

From the population that has been analyzed, samples are taken from each school. Each school selected one experimental class and one control class. The number of samples in this study was 160 students. The sample class was selected by conducting a pre-test on Mathematics and the Indonesian language. The results of the sample class pre-test are listed in Table 3.

Table 2. Total population of each school

School	Number of classes	Population
SMP Negeri 1 Kisaran	10	320
SMP Negeri 2 Kisaran	10	320
SMP Negeri 3 Kisaran	11	352
SMP Negeri 5 Kisaran	10	320
SMP Negeri 6 Kisaran	12	384
Total		1,696

Table 3. Pre-test in experiment class and control class

Groups	N	Mean	SD	Sig.
Experiment	80	70.25	16.67	0.000
Control	80	67.68	13.42	0.000

3. RESULTS

In the experimental class, the learning process was conducted using the online learning model with parental assistance. This learning model uses the following syntax: i) schedule (learning design phase); ii) acceptance (feedback phase); iii) performance (assignment phase); iv) transmit (information delivery phase); v) assistance (parental assistance phase). This syntax was developed to create organized learning conditions using collaboration between teachers, parents, and students.

The first phase is schedule (learning design phase). Before the learning implementation, the teacher submits the learning material file for students to study independently (preferably equipped with a video of the teacher explaining the material). Teachers convey the important points of the learning materials through online learning media. It is recommended to use voice notes in WhatsApp group with maximum duration of 5 minutes per session. Teacher invites students to ask questions, either in text or voice note. The teacher answers students' questions. The teacher presents the material again and invites students to ask questions (next session). In this phase, the teacher encourages students to be more active in self-learning and asking questions to the teacher.

The next phase is acceptance (feedback phase). To determine students' understanding, the teacher provides feedback through voice notes and asks students to answer the teacher's questions directly. The teacher also asks students to respond to the teacher's answers directly to gain a deeper understanding.

The next phase is performance (assignment phase). This phase is the final phase of online learning. In giving home assignments, teachers should pay attention to the following: i) the objectives must be formulated explicitly; ii) the homework given must be in accordance with students' abilities and proportional

processing time; iii) students must be given instructions in its implementation to avoid confusion; iv) the teacher must evaluate the given assignment after it is collected.

The next phase is transmit (information delivery phase). In this stage, the teacher enters data regarding student activities in class, lesson materials, and homework given to students during learning into the parent assistance application. Parents will access the data as input in assisting their children to learn.

The last phase is assistance (parent assistance phase). In this phase, students do the homework given by the teacher and accompanied by parents by paying attention to the following points: i) Students are accompanied by parents and encouraged so that children want to work; ii) Students work on their own and do not ask others; iii) Parents can pay attention to the teacher's direction regarding parental assistance in learning; and iv) At the end of the assistance, parents inform the teacher that learning assistance has been carried out through the application.

The treatment research conducted in the experimental and control classes is listed in Table 4. The table presents the steps taken in the experimental and control classes. At each stage of the treatment, it has been carefully planned. Each stage was documented to prevent bias during the treatment in the sample class. The steps were carefully planned, so each aspect had no mistakes.

The samples obtained were tested for normality using the Kolmogorov-Smirnov method. The normality test results are contained in Table 5 and Table 6. The normality test results are contained in Table 5 and Table 6. From the data in Table 5 and Table 6, it is found that the significance value of Asymp. Sig (2-tailed)>0.05. Based on the decision-making for the Kolmogorov-Smirnov normality test, it can be concluded that the data in the sample of mathematics and Indonesian classes are normally distributed.

Table 4. Treatments for experimental and control classes

Phases	Experimental classes	Control classes
Before teaching	– Delivering an online learning model based on parental assistance to teachers – Discuss with teachers about learning patterns, teaching methods, and learning evaluation – Discuss with the teacher the standard for measuring student learning evaluation	– Discuss with teachers about learning patterns, teaching methods, and evaluation of learning as they have been used – Discuss with the teacher the standard for measuring student learning evaluation
While teaching	– Teachers teach using an online learning model based on parental assistance – Make observations on learning – Provide evaluation of learning outcomes	– Teachers Teach using online learning models that are commonly used (conventional) – Make observations on learning – Provide evaluation of learning outcomes
After teaching	– Discuss with the teacher discussing student's learning progress – The teacher conveys his experience when teaching – Discuss with the teacher regarding student learning problems – Discuss with the teacher for learning feedback	– Discuss with the teacher discussing student's learning progress – The teacher conveys his experience when teaching – Discuss with the teacher regarding student learning problems – Discuss with the teacher for learning feedback

Table 5. Normality test results for mathematics subjects

		Unstandardized residual
N		160
Normal parameters	Mean	0.000000
	Std. deviation	6.81624297
Most extreme Differences	Absolute	0.104
	Positive	0.079
	Negative	-0.104
Kolmogorov-Smirnov Z		1.315
Asymp. Sig. (2-tailed)		0.063

Table 6. Normality test results for Indonesian language subjects

		Unstandardized residual
N		160
Normal parameters	Mean	0.000000
	Std. deviation	4.44804215
Most extreme differences	Absolute	0.106
	Positive	0.106
	Negative	-0.102
Kolmogorov-Smirnov Z		1.347
Asymp. Sig. (2-tailed)		0.054

In the homogeneity test the homogeneity test results are shown in Tables 7 and 8. Based on the homogeneity test output, it is known that the significance value is more significant than 0.05 (Sig>0.05). The Mean in the Mathematics subject is 0.382, and in the Indonesian subject is 0.939. Although the fields of the two subjects are numerically different, the variance values are stated to be the same. From the Sig>0.05 value, it can be concluded that the variance in mathematics and Indonesian subjects is the same or homogeneous.

The learning outcomes obtained in the sample classes were significantly different. With a significant value of a=0.05 in both subjects, the test results obtained t_{count}=3.289 and t_{table}=1.645 or $t_{count}>t_{table}$. Applying the learning model in the experimental class (based on parental assistance) is better than the learning model

used in the control class. Furthermore, it was found that the application of the learning model based on parental assistance in the experimental class showed higher results than the control class. The learning outcomes in the sample class are presented in Table 9.

Table 7. Test of homogeneity of variance mathematics

	Levene statistic	df1	df2	Sig.
Based on Mean	.766	1	160	.382
Based on Median	.553	1	160	.458
Based on Median and with adjusted df	.553	1	316.616	.458
Based on trimmed mean	.790	1	160	.375

Table 8. Test of homogeneity of variance Indonesian language

	Levene statistic	df1	df2	Sig.
Based on Mean	.006	1	160	.939
Based on Median	.047	1	160	.829
Based on Median and with adjusted df	.047	1	315.975	.829
Based on trimmed mean	.003	1	160	.953

Table 9. The study results in the sample class

T	Df	Sig. (2-tailed)	Mean difference	95% confidence interval of the difference	
				Lower	Upper
3.289	159	.000	18.656	16.837	20.532

4. DISCUSSION

The results of testing the hypothesis show that the online learning model based on parental assistance significantly affects the quality of student self-efficacy. The self-efficacy quality of the experimental group had a much higher average than the control group, which learned without parental assistance. In treatment activities in the experimental class, parents were involved in learning at home, especially checking students' homework.

Parents are obliged to accompany their children in learning, especially when completing the homework given by the teacher. Parents are not required to solve all the questions, but at least accompany and encourage them when their children study at home. This is because parental assistance is essential, especially in online learning. Parental assistance is also needed to increase student self-efficacy [27], [28].

In addition to accompanying children to study at home, in the experimental class, parents also received information from teachers at school about homework. Information is provided through an application previously provided by the school to each parent. With this information, parents can better control their children's education at home. Parents can see if their child has homework. This information helps in knowing the students' progress in school. Collaboration between parents and children in completing homework is a valuable way to support student self-efficacy [29], [30].

Communication between teachers and parents was almost cut off during a pandemic that required online learning. Even though communication between teachers and parents is crucial in monitoring student learning and character development, parental involvement in student work can reduce student learning failures from 15.8% to 9.3%. In line with this, the relationship between school and family must be strengthened because parents need to encourage their children and support them in managing their homework. Overall, this research produces knowledge about the implementation of online learning. Research replication can be carried out to confirm more general conclusions by i) increasing the number of respondents; ii) involving more subjects; or iii) with a broader and more varied population.

5. CONCLUSION

Based on the study results, learning using an online learning model based on parental assistance can improve student learning outcomes. The online learning model based on parental assistance encourages parents to participate passively in student learning at home. Students also have to study actively at home because their parents control them. Our findings, therefore, have important policy implications for all stakeholders. First, the online learning model based on parental assistance will make a practical contribution to the implementation of learning, especially in the implementation of online learning in the era of the pandemic and after the COVID-19 pandemic. Empirically, the online learning model based on parental assistance makes it easy for teachers to implement learning during the pandemic to impact the learning process's effectiveness and can improve student learning outcomes. This model can be used as a solution to

the breakdown of communication in learning between teachers and students. Second, applying an online learning model based on parental assistance requires teachers with high enthusiasm and motivation to achieve learning goals. Third, applying an online learning model based on parental assistance requires student readiness and parental support to carry out learning with a model developed independently and structured in learning outside school. Fourth, using online learning based on parental assistance, teachers can formulate components of learning design and mastery of matrices and use information and communication technology as an integrated learning tool to develop student potential. The innovation and creativity of teachers in developing online learning based on parental assistance are very much needed to produce students who can have lunch the post-pandemic. Fifth, this online learning model based on parental assistance refers to the competency-based learning model. It is aimed at improving student learning outcomes; assisting parents in controlling their children's education, especially in giving assignments given by the teacher; and knowing the progress of students' homework.

REFERENCES

[1] L. Di Domenico, G. Pullano, P. Coletti, N. Hens, and V. Colizza, "Expected impact of school closure and telework to mitigate COVID-19 epidemic in France," 2020.

[2] M. B. Horn, "COVID-19's long-term impacts on education in 2020 and beyond," *EdSurge*, 2020. [Online]. Available: https://www.edsurge.com/news/2020-03-23-covid-19-s-long-term-impacts-on-education-in-2020-and-beyond

[3] R. H. Huang, D. J. Liu, A. Tlili, J. F. Yang, and H. H. Wang, *Handbook on facilitating flexible learning during educational disruption: The Chinese experience in maintaining undisrupted learning in COVID-19 Outbreak*. Beijing: Smart Learning Institute of Beijing Normal University, 2020.

[4] W. Yan, "How will COVID-19 impact global education," *China Daily*, 2020. [Online]. Available: http://www.chinadaily.com.cn/a/202003/17/WS5e7045e9a31012821727fb8b.html

[5] W. Zhang, Y. Wang, L. Yang, and C. Wang, "Suspending classes without stopping learning: China's education emergency management policy in the COVID-19 outbreak," *Journal of Risk and Financial Management*, vol. 13, no. 3, p. 55, Mar. 2020, doi: 10.3390/jrfm13030055.

[6] G. Gee, "COVID-19: impact on student predictions," Civitas Learning, 2020. [Online]. Available: https://info.civitaslearning.com/rs/594-GET-124/images/Impact on Student Predictions.pdf

[7] M. Nicola *et al*., "The socio-economic implications of the coronavirus pandemic (COVID-19): A review," *International Journal of Surgery*, vol. 78, pp. 185–193, Jun. 2020, doi: 10.1016/j.ijsu.2020.04.018.

[8] R. S. Putri, A. Purwanto, R. Pramono, M. Asbari, L. M. Wijayanti, and C. C. Hyun, "Impact of the COVID-19 pandemic on online home learning: An explorative study of primary schools in Indonesia," *International Journal of Advanced Science and Technology*, vol. 29, no. 5, pp. 4809–4818, 2020.

[9] K. Zacharo, M. Koutsoukos, and D. Panta, "Connection of teachers' organizational commitment and transformational leadership. a case study from Greece," *International Journal of Learning, Teaching and Educational Research*, vol. 17, no. 8, pp. 89–106, Aug. 2018, doi: 10.26803/ijlter.17.8.6.

[10] S. Alturki, S. Alija, and H. Stuckenschmidt, "Online delivery in higher education during pandemics: students' perspective," *TEM Journal*, vol. 11, no. 2, pp. 882–892, 2022.

[11] B. Azhari and I. Fajri, "Distance learning during the COVID-19 pandemic: School closure in Indonesia," *International Journal of Mathematical Education in Science and Technology*, vol. 53, no. 7, pp. 1934–1954, 2022, doi: 10.1080/0020739X.2021.1875072.

[12] M. Aghajani and M. Adloo, "The effect of online cooperative learning on students' writing skills and attitudes through telegram application," *International Journal of Instruction*, vol. 11, no. 3, pp. 433–448, Jul. 2018, doi: 10.12973/iji.2018.11330a.

[13] M. Bal, "Reading and writing experiences of middle school students in the digital age: Wattpad sample," *International Journal of Education and Literacy Studies*, vol. 6, no. 2, p. 89, Apr. 2018, doi: 10.7575/aiac.ijels.v.6n.2p.89.

[14] T. Lathipatud Durriyah and M. Zuhdi, "Digital literacy with EFL student teachers: exploring Indonesian student teachers' initial perception about integrating digital technologies into a teaching unit," *International Journal of Education and Literacy Studies*, vol. 6, no. 3, p. 53, Jul. 2018, doi: 10.7575/aiac.ijels.v.6n.3p.53.

[15] I. K. Sudarsana *et al*., "Technology application in education and learning process," *Journal of Physics: Conference Series*, vol. 1363, no. 1, p. 012061, Nov. 2019, doi: 10.1088/1742-6596/1363/1/012061.

[16] Y. Aljaraideh, "Massive open online learning (MOOC) benefits and challenges: a case study in Jordanian context," *International Journal of Instruction*, vol. 12, no. 4, pp. 65–78, Oct. 2019, doi: 10.29333/iji.2019.1245a.

[17] R. Rasmitadila *et al*., "The perceptions of primary school teachers of online learning during the COVID-19 pandemic period: A case study in Indonesia.," *Journal of Ethnic and Cultural Studies*, vol. 7, no. 2, pp. 90–109, 2020, doi: 10.29333/ejecs/338.

[18] R. Rajah and S. Grenville, *Keeping Indonesia's economy afloat through the COVID-19 pandemic*. Lowy Institute, 2020.

[19] A. Sapta, A. Hamid, and E. Syahputra, "Retraction: Assistance of parents in the learning at home," *Journal of Physics: Conference Series*, vol. 1114, p. 012143, Dec. 2018, doi: 10.1088/1742-6596/1114/1/012143.

[20] K. Kumpulainen, L. Lipponen, J. Hilppö, and A. Mikkola, "Building on the positive in children's lives: a co-participatory study on the social construction of children's sense of agency," *Early Child Development and Care*, vol. 184, no. 2, pp. 211–229, Feb. 2014, doi: 10.1080/03004430.2013.778253.

[21] X. Li, Y. Yang, S. K. W. Chu, Z. Zainuddin, and Y. Zhang, "Applying blended synchronous teaching and learning for flexible learning in higher education: an action research study at a university in Hong Kong," *Asia Pacific Journal of Education*, vol. 42, no. 2, pp. 211–227, Apr. 2022, doi: 10.1080/02188791.2020.1766417.

[22] X. Xie, K. Siau, and F. F.-H. Nah, "COVID-19 pandemic – online education in the new normal and the next normal," *Journal of Information Technology Case and Application Research*, vol. 22, no. 3, p. 175, 2020, doi: 10.1080/15228053.2020.1824884.

[23] O. B. Adedoyin and E. Soykan, "COVID-19 pandemic and online learning: the challenges and opportunities," *Interactive Learning Environments*, vol. 31, no. 2, pp. 863–875, Feb. 2023, doi: 10.1080/10494820.2020.1813180.

[24] A. Besser, G. L. Flett, and V. Zeigler-Hill, "Adaptability to a sudden transition to online learning during the COVID-19 pandemic: Understanding the challenges for students," *Scholarship of Teaching and Learning in Psychology*, vol. 8, no. 2, pp. 85–105, Jun. 2022, doi: 10.1037/stl0000198.

[25] B. Bai and J. Wang, "The role of growth mindset, self-efficacy and intrinsic value in self-regulated learning and English language learning achievements," *Language Teaching Research*, vol. 27, no. 1, pp. 207–228, Jan. 2023, doi: 10.1177/1362168820933190.
[26] J. B. Torres and V. S. Solberg, "Role of self-efficacy, stress, social integration, and family support in Latino college student persistence and health," *Journal of Vocational Behavior*, vol. 59, no. 1, pp. 53–63, 2001.
[27] R. Keizer, C. J. van Lissa, H. Tiemeier, and N. Lucassen, "The influence of fathers and mothers equally sharing childcare responsibilities on children's cognitive development from early childhood to school age: an overlooked mechanism in the intergenerational transmission of (dis)advantages?" *European Sociological Review*, vol. 36, no. 1, pp. 1–15, Oct. 2019, doi: 10.1093/esr/jcz046.
[28] R. Setiawan and R. Munajah, "Evaluation of the application of online learning in Indonesian universities," *TEM Journal*, vol. 9, no. 3, pp. 1194–1199, Aug. 2020, doi: 10.18421/TEM93-46.
[29] O. V. Galustyan, K. M. Gaidar, S. A. Aleshina, A. N. Ksenofontova, and A. V. Ledeneva, "Development of group subjectivity of pupils within collaborative activities," *TEM Journal*, vol. 7, no. 4, pp. 854–858, 2018, doi: 10.18421/TEM74-25.
[30] K. Hutchison, L. Paatsch, and A. Cloonan, "Reshaping home–school connections in the digital age: Challenges for teachers and parents," *E-Learning and Digital Media*, vol. 17, no. 2, pp. 167–182, Mar. 2020, doi: 10.1177/2042753019899527.

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