

# The effect of additional lessons on elementary school students' knowledge level in Pucakwangi, Lamongan

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## Abstract

**Background:** The progress of a region is greatly influenced by the quality of its human resources (HR). This is inseparable from the level of knowledge of the community as human resources in an area that must be fostered from an early age.

**Methods:** Additional lessons are given to elementary school students of MIM 03 and MI Al-Huda. Data collection used a knowledge questionnaire to evaluate the knowledge before and after the implementation of all additional learning sessions which were carried out 8 times within 4 weeks. The subject of this study were 19 elementary school children in Pucakwangi Village, Lamongan. The marks are then analyzed by using Statistical Package for Social Science (SPSS) Statistic 23.

**Results:** The results showed an increase in the results of the knowledge questionnaire on the post test ( $p < 0.05$ ).

**Conclusion:** This study concludes that additional lessons have a positive impact on subject knowledge, and a sustainable program is needed to maintain or even increase knowledge levels and quality of human resources.

Keywords: human resource, education, additional lessons, public service

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## 1. Introduction

Human resources play a key role in determining an area's progress. Jašková & Havierníková (2021) state that human resources are a key aspect of social, and economic development and prosperity in an area. A study by Saleh et al. (2020) show that the utilization of natural resources without human resource development funds will hamper the acceleration of economic development. A human resource's quality can be measured by their physical abilities, intellectual abilities, or knowledge, or by their mental or psychological abilities (Sari & Novrianto, 2022). Therefore, the quality of human resources deserves attention to be developed. A system must be developed to achieve high quality to meet development needs (Van Hiep, 2021; Dhammika, 2020). Human resource quality can be improved through three stages, namely: identification of development needs, preparation of development programs, and monitoring/evaluation (Ruhana, 2012). Improving human quality can be achieved in several ways, such as through training, formal education, job appraisal, and career development (Ningsih, 2022). Among these four ways, formal education is one way that can be modified to improve human quality. Formal education in Indonesia is regulated by Law no 20 of 2003 concerning the

National Education System, which defines four levels of education, which include early childhood education, basic education, secondary education (Junior High School and Senior High School), and higher education (university). As a result, it is expected to increase knowledge or intelligence in society, thereby improving the quality of human resources. A study by Lapatinas & Litina (2018) shows a positive correlation between the level of intelligence or knowledge and the level of economic sophistication.

The level of intellectual intelligence is usually calculated by calculating the value of the IQ (intellectual quotient). Based on the 2022 World Population Review, Indonesia ranks 130th out of 199 countries with an average IQ score of 78.49, well below neighboring Malaysia and Brunei, ranked 73rd and 74th respectively. Based on data from the Central Bureau of Statistics in 2020, the human development index in East Java is 72.14 below the average in 34 provinces in Indonesia (72.29). Due to the poor level of intelligence from the survey that has been carried out above, the authors want to improve this by applying one of the points of the Tri Dharma of Higher Education, namely community service by holding additional study work programs in the Community Service Program to improve quality.

Previous studies have indicated that the population that receives the intervention has a greater level of knowledge. According to Budi (2021), training leads to a greater level of knowledge. Nickow et al. (2022) said that providing additional learning was very effective in helping students learn, with 80% of 96 students showing a significant improvement. Including research by Guerra-Martín et al. (2017) which shows an increase in the level of knowledge as measured by a questionnaire.

According to the data described above, the author feels that a concrete step is needed to improve intellectual abilities at the community service location by the author in Pucakwangi Village, Lamongan Regency. The author will conduct a study to examine the condition of the intellectual level in society through knowledge questionnaires before and after giving additional lessons as one of the community service work programs undertaken by the author. In the future, it is hoped that this writing will become a solution to increase the intellectual level, which will indirectly improve the quality of human resources in the workplace.

## 2. Methods

The data was collected directly via a knowledge questionnaire consisting of 15 discrete questions about grade 4 elementary school subjects. There were five questions about math, five questions about Indonesian language, and five questions about Natural Sciences. The questionnaire was filled out before and after all additional learning sessions (8 sessions in 4 weeks). Subjects were 4th grade elementary school students from MIM 03 and MI Al-Huda. The data was analyzed using descriptive statistics in SPSS. All activities were conducted by observing and implementing health protocols during the COVID-19 pandemic that were in effect in Pucakwangi Village, Lamongan Regency. Pretest was conducted before the first additional lesson. Adding additional lessons was done by dividing the subject into five groups in order to maximize explanations. The session lasted approximately 2 hours. Then the post test was conducted after the last session or the 8th session has been completed.

## 3. Results and Discussion

The community service program was conducted in Pucakwangi Village, Lamongan Regency, East Java from July-August 2022. An intervention was conducted eight times, with one session in the first week, one session in the second week, three sessions in the third week, and three sessions in the fourth week. A total of 19 children participated in all interventions.

The data from the pretest results (Table 1) shows a low average knowledge score indicating that the intellectual level is still relatively low, the highest score is Indonesian, followed by Natural Sciences, and the lowest score is in Mathematics. Then the next posttest results can be seen in Table 2.

Table 1. Pretest Results of Additional Lessons Participants

Participant Code	Value			Total Value
	Mathematics	Indonesian	Natural Sciences	
1	1	0	3	4
2	5	3	4	12
3	2	2	1	5
4	1	1	0	2
5	3	2	2	7
6	3	2	2	7
7	2	2	2	6
8	1	1	4	6
9	2	4	3	9
10	1	4	4	9
11	2	5	2	9
12	1	2	3	6
13	4	5	5	14
14	1	1	3	5
15	2	4	2	8
16	4	4	5	13
17	1	1	3	5
18	2	0	1	3
19	5	5	5	15
<b>Average value</b>	<b>2.26</b>	<b>2.53</b>	<b>2.84</b>	<b>7.63</b>

Table 2. Post Test Results of Additional Lessons Participants

Participant Code	Value			Total Value
	Mathematics	Indonesian	Natural Sciences	
1	2	1	4	7
2	5	4	4	13
3	2	5	3	10
4	2	3	1	6
5	3	3	3	9
6	4	3	5	12
7	2	3	3	8
8	4	5	4	13
9	4	4	5	13
10	3	5	4	12
11	4	5	1	10
12	3	5	4	12
13	5	5	5	15
14	2	5	3	10
15	2	4	4	10
16	4	5	4	13
17	1	2	3	6
18	2	1	2	5
19	5	4	4	13
<b>Average value</b>	<b>3.11</b>	<b>3.79</b>	<b>3.47</b>	<b>10.37</b>

The results of the pretest assessment showed that the highest score was in Natural Sciences, followed by Indonesian and Mathematics (Table 1). The pretest results showed that the highest score was 15, the lowest score was 2, and the highest score obtained by the participants was 9. In addition, only 4 of the 19 participants scored more than 10 (21.05%). So in the results of this pretest it is clear that there is a level of gap or very far range in the highest and lowest scores, which indicates that Pucakwangi Village has an uneven intellectual level and the quality of education is still low.

In Table 2, it can be seen that the highest score was seen in the Indonesian language subject, followed by

Natural Sciences and Mathematics. In the intellectual questionnaire after the intervention, there was an increase with the highest score being 15, the lowest score increasing to 5, and the highest score being 13 in 5 children. 13 out of 19 people scored more than 10 (68.42%). This shows that this intervention has an effect on the intellectual level of participants with an increase in these scores.

Table 3. Sample t-Test Result

Value	Sig.
Indonesian	0.001
Mathematics	0.001
Natural Science	0.024

\*Significant with  $p < 0.05$

The results of the pretest and posttest showed a significant difference ( $p < 0.05$ ). Improvements were seen in all subject scores in mathematics (2.26 to 3.11), Indonesian (2.53 to 3.79), and Natural Sciences (2.85 to 3.47). In the total value, there was also a significant increase from 7.63 to 10.37 (an increase of 135.91%).

#### 4. Conclusion

The additional lessons given had a good impact on the intellectual level of elementary school children in Pucakwangi Village, Lamongan Regency. The pretest and posttest conducted by the authors showed an increase in the average score of 135.91% in 3 subjects (Mathematics, Indonesian, and Natural Sciences), although this did not show an increase in the number of participants who received perfect scores (15). This additional learning activity is important to continue in order to increase the intellectual level of society. This activity can also be applied to all available levels of formal education. Intervention can also be done at an earlier age according to some studies can have a better effect.

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