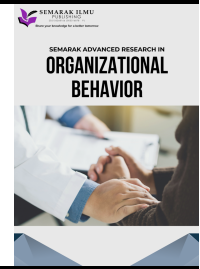




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The Effect of Implementing a Community-Based Training Model with Contextual and Coaching Approaches on the Learning Leadership in Indonesia

Imron Imron^{1,*}, Sulhadi Sulhadi², Achmad Samsudin³, Kuntoro Adi Juwanda⁴

¹ Senior High School Lasem, Rembang, Indonesia

² Department of Physics Education, Faculty of Mathematics and Natural Sciences, Universitas Negeri Semarang, Semarang, Indonesia

³ Department of Physics Education, Faculty of Mathematics and Natural Sciences, Universitas Pendidikan Indonesia, Bandung, Indonesia

⁴ Indonesia School Kuala Lumpur, Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia

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ABSTRACT

Golden Indonesia 2045 is sovereign, advanced, just, and prosperous; one of the spearheads is education. Indonesia Emas 2045 is characterized by superior and quality human resources, an advanced and sustainable economy, and learning and development are needed. The implementation of the training management model is supported by Social Exchange Theory (SET). Training activities and implementation in learning in accordance with SET produce a reciprocal relationship that is felt by the organization for providing opportunities for employees to attend training. The low quality of learning due to unequal education in Indonesia contributes to the low mathematical literacy skills of Indonesian students, as evidenced by the PISA results and the Education Report Card from the National Assessment. Numeracy literacy training has not been obtained by all teachers, especially at the basic education level. Mathematics learning training in a basic, simple, reasoning-based, and contextual way is needed. The objectives of this study are (1) to determine the increase in scores from pre-test to post-test of numeracy literacy training; (2) to determine the activeness of participants participating in numeracy literacy training from the beginning to the end; and (3) to determine the effect of improving teacher competence on learning leadership through the motivation of participants to participate in numeracy literacy training with coaching and contextual approaches. This study used a mixed-methods approach and was analyzed using structural equation modeling (SEM). The findings in this study are (1) an increase in the average score of participants by 27.04; (2) participant activeness reached 98.7%; and (3) there is an effect of improving teacher competence on learning leadership through the motivation of participants who take part in numeracy literacy training with coaching and contextual approaches. The contribution of this research is the importance of numeracy literacy training for primary education teachers to become learning leaders in the classroom. So that they can apply basic, simple reasoning and contextual approaches.

1. Introduction

* Corresponding author.

E-mail address: imronwijaya@gmail.com

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Education must be organized and implemented in a planned, directed, and sustainable manner based on the results of a systematic, systemic, and objective needs analysis. Indonesia's human quality is improved by: (1) higher and more equitable education; (2) strong culture; (3) better health, life expectancy, and quality of life; (4) high productivity; and (5) broad mastery of science and technology. Thus, the hope of achieving quality Human Resources (HR) is a necessity. In connection with this thought, quality educational HR [38] is the main determinant.

The best possible learning must be achieved by motivating pupils to reason and contextualize. Attempts to raise the standard of education by emphasizing sophisticated cognitive abilities have not proven successful. The World Bank suggests that the government (1) start a nationwide initiative to raise the standard of basic education and (2) collaborate with local communities to impart new skills. The government's innovation is the Merdeka Belajar program, which includes the Activator Teacher Program as one of its episodes. Organizations [9] must use learning and development to enhance their exceptional and competitive HR [29]. The government seeks to allocate 20% of the budget for education in 2022, amounting to 542.83 trillion. The low PISA 2022 results and the education report card, encourage all parties to cultivate literacy, science, and numeracy. The numeracy literacy skills [15] of educators as one of the problems must be studied systematically and systemically based on learning theory, training [17] with a contextual approach [19] observation with a coaching approach [6], academic culture in the community [46], motivation [44], and leadership [3] learning.

According to a World Bank assessment, the majority of Indonesia's HR lack the skills required in the Industry 4.0 age, raising concerns about their quality. Conditions in Indonesia include: (1) students only study for 7.8 years even though they attend school for 12.4 years; (2) inadequate funding for early childhood development and education leading up to primary school; (3) learning inequality; and (4) the difficulties posed by Industry 4.0, which brings about significant changes [24]. Continuous competency improvement efforts are made to help more learners acquire skills. The 2018 PISA math proficiency is ranked 71 out of 77 countries [40], and in 2022 it is ranked 69 out of 81 countries. This condition causes a very wide gap. A comparison of Indonesian and OECD averages and partners can be seen in Table 1.

Table 1
Comparison of Indonesia, the OECD, and partner averages

Ability	2018			2022		
	Indonesia	OECD+	OECD	Indonesia	OECD+	OECD
Reading	371	487	493	359	476	482
Math	379	490	496	366	472	480
Science	396	489	493	383	485	491

Table 1 shows the gap between international and Indonesian averages. It takes 117 points to catch up with the international average for reading, 106 points for math, and 102 points for science. Education report card results should ideally achieve a good category or more than 70% for minimum competencies. Teacher's quality or competency improvement programs are implemented only based on qualitative and speculative analysis by decision-makers without accurate data [49].

Research by Via and friends [55] found that the contribution of numeracy skills of prospective elementary school (ES) teachers 21.1% was influenced by self-efficacy, while the remaining 79.9% was influenced by other factors not examined in this study [55]. The model developed is contextualized learning [53], coaching-oriented mentoring [60], the coaching approach is systemic, systematic, and programmed, with reflection and follow-up in classroom learning. As much as 79.9% of skills are influenced by other factors that have not been clearly identified, so coaching-oriented

mentoring or observation is followed up. Research conducted by Molyn *et al.*, [30] found a significant positive overall correlation between working alliances and coaching outcomes, so more research is needed to examine the causal relationship between outcome expectations and favorable coaching outcomes [30].

Teachers have participated in self-development both by the government and by other communities, followed up in classroom learning. Learning in the classroom is currently not maximally supervised or observed by observers. Coaching [5] by observers or supervisors has not been carried out properly because observation or supervision [27] has not been maximized. If it has been carried out after supervision or observation, it still often uses a mentoring [57] and consulting approach [23]. Educators need to create interesting learning innovations and can arouse the enthusiasm of students so that they are not bored and learning is fun. There is no strong evidence on the effectiveness of professional development to improve students' skills [54].

Numeracy can be defined as the ability to apply numeracy [7] concepts and skills in everyday life and interpret quantitative information around it. Johnson (2009) explains that contextual-based learning is an educational process that aims to help students see the meaning of the academic material learned by connecting academic topics with the context of everyday life, namely their personal, social [1], and cultural contexts. Contextual learning [41] is learning that aims to connect students' knowledge with real contexts to build meaningful knowledge [28]. Teachers must be given the freedom to develop learning according to the situation, conditions, and needs of students. Many factors influence teacher motivation, such as family and culture, self-image, gender, recognition and achievement, ideals, learning ability, environmental conditions, dynamic elements in the workplace, and management efforts to motivate teachers [47]. Development of internal motivation to learn, organization of students' independent work and psycho pedagogical support, and combination of traditional and distance learning methods [52]. Students' intrinsic learning motivation [42] and extrinsic motivation affect student learning outcomes [52]. Teacher performance is not optimal, as evidenced by the low results of the Teacher Competency Test, which has an impact on the low results of the Education Report Card and PISA results in 2022. The relationship between teacher competence and learning leadership [25] through motivation to attend training can be seen in Figure 1.

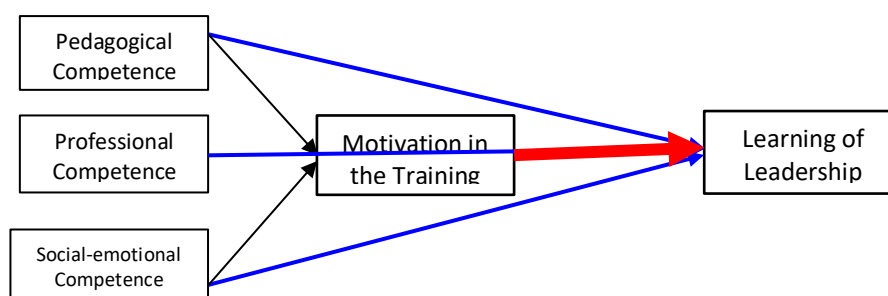


Fig. 1. Figure the relationship between pedagogical competence, professional competence, social-emotional competence and teacher performance through motivation in the training on learning leadership

Based on Figure 1, ideal teacher performance [43] with optimal learning leadership is influenced by internal factors including social-emotional competence [14] and motivation. External factors include pedagogic competence and professional competence [31]. Internal and external factors should improve teacher performance [26] through learning leadership. Optimal learning in the classroom has an impact on improving the quality of students.

The relationship between educators and learners, fellow educators, or the surrounding environment can be influenced by *Social Exchange Theory* (SET). Based on SET's assumption, the

organization's optimistic and helpful actions toward employees help build a superior quality organization that assigns employees the task of responding positively by helping [51]. There is a positive emotional [13] relationship between leadership and work engagement. Trust in leaders has an increasing impact on work engagement [59]. Training activities in accordance with SETs result in a reciprocal relationship perceived by the organization [21] for providing opportunities for employees to participate in training, although not optimal. The relationship between leaders and employees will continue if both parties get the same benefits (costs and benefits) and no one is disadvantaged [48].

Based on the theoretical insights and empirical evidence presented earlier, this study will focus on the following research question: Is there an improvement in the ability of participants in numeracy literacy training with coaching and contextual approaches? How active are the participants in the numeracy training, with coaching and contextual approaches? Is there an effect of improving teacher competence on learning leadership through the motivation of participants in numeracy literacy training with coaching and contextual approaches? This study aims to (1) determine the improvement in the ability of participants in numeracy literacy training with coaching and contextual approaches; (2) determine the activeness of participants in numeracy training with coaching and contextual approaches; and (3) determine the effect of improving teacher competence on learning leadership through the motivation of participants in numeracy literacy training with coaching and contextual approaches.

The hypotheses of this study are: (1) there is an increase in the ability of participants in numeracy literacy training with coaching and contextual approaches; (2) there is activeness of participants in numeracy training with coaching and contextual approaches; and (3) the motivation of participants in numeracy literacy training with coaching and contextual approaches mediates the effect of improving teacher competence on learning leadership. The results of this study have an impact on improving teacher learning leadership in classrooms and schools through motivation to participate in numeracy literacy training with coaching and contextual approaches, which has an impact on improving student numeracy literacy skills in Indonesia.

2. Methodology

2.1 Participant and Data Collection

The population in the study was the ES level in Rembang district that participated in the national assessment in 2023 of 424 schools. The experimental research sample consisted of 21 primary schools. The qualitative research sample consisted of 42 trainees, four principals, and two students. The quantitative research sample consisted of 135 participants, consisting of 42 trainees, 21 principals, and 72 other teachers in the school. There were 17 public schools and 4 private schools. Respondent data obtained during the study is shown in Table 2. The population in the research was 135 teacher participants consisting of 42 teacher trainers, 21 school principals, 72 fellow teachers, and 2 students. Respondent data obtained during the research is presented in Table 2.

Table 2
Respondent profile of participant

Description	Frequency	(%)
School Principal	21	17.80
Teacher (Trainee)	42	35.60
Teacher (Peer)	72	44.92
Students	2	1.68

2.2 Research Design and Instruments

This research uses mixed methods, namely quantitative methods through questionnaires and qualitative methods through interviews after learning observations. The research began with observations during the 6th batch of teacher trainers from August 24, 2022, to May 10, 2023. The results of 10 months of observation were followed up to create a community-based numeracy literacy training model with a contextual approach and applied in trials twice, namely on May 9–10, 2024, and May 17–19, 2024. The results of the implementation were evaluated and used in an experimental study with 42 teachers who attended the face-to-face meetings.

The instruments used in this research questionnaire were derived from the teacher competency model (pedagogical competence, social competence, and professional competence), the activator teacher competence (learning leadership and socio-emotional competence), and an instrument compiled by the researcher herself (teacher motivation) consisting of 5 variables. Each variable consists of three or four indicators. Each indicator consists of 2–6 statements. The distribution of the instruments is shown in Table 3.

Table 3

Instruments used in the study according to the specified variables

Variabel	Total
Pedagogical Competence	
A safe and comfortable learning environment for learners	2
Effective learner-centered learning	4
Learner-centered assessment, feedback, and reporting	3
Professional Competence	
Knowledge of learning content and how to teach it	3
Characteristics and learning styles of learners	3
Curriculum and how to use it	4
Social-Emotional Learning Competencies	
Collaboration for learning improvement	3
Involvement in professional organizations and wider networks for learning improvement	2
Demonstrate spiritual, moral, and emotional maturity	4
Motivation	
Describe participants' motivation to become teachers	3
Describe the motivation of participants to join the training	3
Describe participants' motivation to do classroom application, feedback, reflection, and observation	3
Learning Leadership	
Lead the effort to develop a student-centered learning environment	6
Lead the planning and implementation of a student-centered learning process	3
Leading the reflection and improvement of the quality of the student-centered learning process	4
Involving parents or guardians as a companion and learning resource at school	5

The questionnaire for trainee feedback used a Likert scale of 1–5 according to the rubric. A total of 55 instruments were developed for this study. During the implementation of the experimental research, comprehension tests, pre-test, post-test, and feedback on the effectiveness of the training implementation were conducted by ticking the provided instrument sheets with a Likert scale of 1–5, which means 1 (very bad/acceptable/high), 2 (poor/acceptable/high), 3 (undecided), 4 (good/acceptable/high), and 5 (very good/acceptable/high).

2.3 Analysis Technique

Data analysis uses an integrative approach by integrating formative data analysis into the research process, integrating various data sources through observation or literature to find possible

relationships, participating in related theories and in a collaborative and reflective process, realizing that the general framework of data analysis is systematic and deliberate, and using the emerging conceptual framework as a guide. Qualitative data analysis used Creswell's six steps. Quantitative data analysis uses descriptive statistics and inferential statistics with path analysis. Path analysis uses the SEM (Structural Equation Modelling) approach using the SPSS version 25 application and the Lisrel version 8.8 application. SEM involves three activities simultaneously. This is done to enrich and clarify the results which are explicitly interpreted to be close to the actual results. This research data was analysed using structural Equation Modelling (SEM) with the Lisrel application which can be downloaded on the page <https://www.ssilive.com/license/lisrel>. SEM [39] used to combine confirmatory factor analysis (CFA) with regression analysis, between CFA and path analysis, as well as a combination of structural models and measurement models. SEM is able to analyse relationship patterns between latent variables and their indicators, latent variables with each other, and other measurement errors. SEM can thoroughly explain the relationship between variables in research with the condition of building a hypothesis model consisting of a structural model and a measurement model in the form of a diagram based on theoretical justification. The following are the stages of data analysis:

- i. Validity and Reliability Test Analysis. The validity test of each indicator item in the questionnaire used was analysed using the Lisrel application version 8.8. An indicator is said to be valid if the standardization value between the indicator and the variable is above 0.50. Reliability tests were carried out on questionnaires that met the validity test using the results of the Lisrel application. It is said to be reliable if the Construct Reliability (CR) value is > 0.50 or Variance Extracted (VE) > 0.50, the following equation:

$$CR = \frac{(\sum \text{Standardized Loading})^2}{(\sum \text{Standardized Loading})^2 + (\sum \text{Measurement Error})} \text{ and } VE = \frac{(\sum \text{Std.Loading } g)^2}{(\sum \text{Std.Loading } g)^2 + (\sum e)} \quad (1)$$

- ii. Classical Assumption Test Analysis includes normality test, multicollinearity test, and heteroscedasticity test. In SEM, the model is said to be fit if the RMSEA value is <0.05.
- iii. Direct and indirect impacts. Simultaneous and indirect influence tests were obtained from the confirmatory factor analysis (CFA) output of the Lisrel application. The regression equation must satisfy the following equation:

Structure 1:

$$Z = a X_1 + b X_2 + c X_3 + \delta \quad (2)$$

Structure 2:

$$Y = a X_1 + b X_2 + c X_3 + \delta \quad (3)$$

Structure 3:

$$Y' = a' X_1 + b' X_2 + c' X_3 + d Z + \delta \quad (4)$$

3. Results

3.1 Implementation of the Training Model

This research was conducted offline on May 23 and 26, 2024, at SMK Cendekia Lasem, with 42 participants and participant engagement in Table 4.

Table 4

Comprehension test scores, pre- and post-tests, and the percentage of participant activeness

Description	Number of Participants	Lowest Score	Highest Score	Average Score
Pre-test	40	10.00	95.00	55.63
Post-test	42	45.00	100.00	81.43
Comprehension Test	42	40.00	100.00	90.43
Cumulative Average Score	41	33.33	92.33	75.42
Liveliness Percentage (%)	42	88.89	100.00	97.22

The training was conducted with a basic, simple, reasoned, and contextualized approach, followed by application in classroom learning, as shown in Figure 2.



Fig. 2. Figure Implementation of offline training at SMK Cendekia Lasem an application of training results to students in the classroom (source: training document)

The findings in this study were an increase in cognitive numeracy literacy training participants previously obtained from 55.63 (pre-test average value) to 81.43 (post-test average value), or an increase of 25.8 points. The percentage increase is 46.38% from the initial value (pre-test average value). This increase in average score proves that teachers who participated in numeracy literacy training for two days offline increased competence related to understanding mathematics learning materials, as shown in Table 4 and Figure 2. After the offline numeracy literacy training at SMK Cendekia Lasem, participants were given a questionnaire to evaluate the training activities. The study found the effectiveness of the training model through a recapitulation of participants' responses, as shown in Table 5.

Table 5

Recapitulation of participants' responses to the training model

Description	Average	Category	%	Kategori
Response to the Implementation of the Training Model	4.56	Very High	91.22	Very Good
Response to Training Facilities	4.35	Very High	86.90	Very Good
Response to the Training Committee	4.47	Very High	89.38	Very Good
Response to Understanding the Material and Follow-up Training	4.52	Very High	90.38	Very Good
Average	4.47	Very High	89.47	Very Good

The second finding above is reinforced by the participants' responses to the numeracy literacy training model. Participants' responses to the application of the training model reached an average of 4.56 (very high) and an average percentage of 91.22% (very good). Another response is that the understanding of the material and follow-up numeracy literacy training reached an average of 4.52 (very high) and an average percentage of 90.38 (very good), according to Table 5. Partially, the

highest response was that the training materials were simple, basic, and contextual (92.38%), and the numeracy literacy training materials were easy to understand (91.90%). The smallest participant response was that the numeracy training materials were disseminated to other teachers (88.10%), according to Table 6. This finding proves that teachers who participated in the numeracy training were more willing to provide direct instruction to children in learning followed by observation with a coaching approach rather than disseminating the results to other teachers (89.52% and 90.00% > 81.10), according to Table 6. Recapitulation of participants' responses as in Table 5; one type of questionnaire is Participants' understanding and follow-up of numeracy literacy training; the responses of 42 participants are recapitulated as in Table 6.

Table 6

Participant understanding and follow-up at school

Description	Total	Total Max	Percentage
Training materials are easy to understand during training	193	210	91.90
Training materials are easy to learn	191	210	90.95
Training materials are simple, basic, and contextual	194	210	92.38
Training materials are received with fun	188	210	89.52
The learning media used are simple and easy to obtain	192	210	91.43
The learning media used are easy to apply to learning	191	210	90.95
Training materials are immediately applied to learning	187	210	89.05
Training materials can be disseminated to colleagues	185	210	88.10
The results of application in learning are followed up by observation	188	210	89.52
Observation by facilitators of the results of the application of learning with coaching	189	210	90.00
Average Percentage	90.4		

The results of the application of classroom learning by the numeracy literacy trainees were followed up with coaching-based observations by Gernas Tastaka facilitators in their respective schools. Alongside the observation, interviews were conducted with school principals and student representatives, as shown in Figure 3.

Another finding in this study is the activeness of the participants in participating in the numeracy literacy training from the beginning to the end of the training, including taking the comprehension test, pre-test, post-test, attendance at the two-day offline training, filling out the follow-up plan, implementing the results of the numeracy literacy training in classroom learning, and observation with a coaching approach, as shown in Table 5, Figure 2, and Figure 3.



Fig. 3. Figure observation of the coaching approach and interview with student testimonials by the facilitator

Principals' responses and expectations of numeracy literacy training conducted by the community can be seen in Figure 3. reinforced by documentation through the YouTube link

<https://bit.ly/pelatihanTastaka>. Figure 3 describes the interview process with the principal of Karangturi primary school, Dhina Widiati. The findings in the interview are that this training is expensive and very important, as well as a big prize. The participants who participated in the numeracy literacy training were initially unwilling because many took place on holidays and were forced by an assignment letter from the principal. After the 1-day training, participants were happy and enthusiastic. The material in Gernas Tastaka is likened to the transformation of education as well as changing the mindset of teachers. Initially, it was only limited to providing math material with formulas and problems. The original math learning was less basic and contextual, making math learning something that makes children enjoy learning math. Math that is considered difficult becomes not difficult. When the teacher enters the classroom with props, students feel like they are playing, but learning math. The results of the learning that has been running are related to the child's increased ability to catch up, as evidenced by better grades. In accordance with the National Curriculum, the training materials by Gernas Tastaka are very suitable for math learning. Training by this community is escorted until implementation and followed up with observation with a coaching approach in schools. Thus, the training materials are actually applied to learning and confirmed by the principal and students. The results of numeracy literacy training strongly support differentiated learning. The numeracy literacy training by Gernas Tastaka complements the materials obtained in the Teacher Activator Training program. The principal hopes that numeracy literacy training activities can be continued for other teachers and schools with facilitation by the government.

Interviews and testimonials from trainees who implemented classroom learning were conducted with two students named Atifa Kirana, grade 4, who were taught by the trainees, as shown in Figure 3. Atifa said that she felt quite happy because she could learn mathematics easily by practicing in class with her friends. During math learning, other students focus on the material provided by the teacher. The way of learning delivered by the teacher does not make students bored, especially the fraction material with practice with other students in the group, so that they can learn mathematics easily and pleasantly, especially so far when there is an impression that math is difficult and unpleasant. Atifa's friend, Safir, gave a testimony to the researcher. Safir said that he originally disliked math the most. After learning in the last week by getting learning from the teacher accompanied by practice with group friends, it made him more happy [10] and excited. At the end of the testimony, Safir said that he aspired to become a math lecturer.

The findings from the interview with the school principal and the testimonies of the two students are that numeracy literacy-based training with very basic, simple, and contextual material is a true transformation of education. So far, the primary education level has rarely been given the basic training that students need in the classroom. One of the numeracy skills of students is the ability to reason and contextualize. Students feel happy and addicted to learning in class, so they easily understand the learning provided by the teacher [16].

3.2 Questionnaire Analysis of the Influence of Teacher Competence

Based on the questionnaire given during the observation at school to the numeracy literacy training participants, teachers in one school, and the principal, from the target of 145 respondents, 135 respondents were collected, consisting of 42 numeracy training participants, 21 principals, and 72 teachers in one school. A recapitulation of the 55 statements is shown in Table 7.

Table 7

Recapitulation of the average value of each variable for 42 respondents

Variable	Total	Average	%
Pedagogical Competence	9	33.14	82.9
Professional Competence	10	42.12	84.2
Social-Emotional Learning Competencies	8	38.60	85.8
Motivation	7	30,12	86.1
Learning Leadership	16	66.17	82.7

The recapitulation from Table 7 was tested for validity and reliability with the Lisrel 8.8 application as part of SEM (Structural Equation Modeling), obtaining the recapitulation in Table 8.

Table 8

Validity and reliability test for 135 respondents with Lisrel 8.8 application

Variable	Total	Valid	CR	Result	VE	Result	Decision
Pedagogical Competences	9	9	4.1360	Reliabel	0.5531	Reliabel	Reliabel
Professional Competences	10	10	4.8435	Reliabel	0.5749	Reliabel	Reliabel
Social-Emotional Learning	9	9	3.4144	Reliabel	0.4803	Not Reliabel	Reliabel
Motivation in Training	9	7	3.2648	Reliabel	0.4767	Not Reliabel	Reliabel
Learning Leadership	18	17	8.2767	Reliabel	0.5540	Reliabel	Reliabel

The results of Table 8 are in accordance with the goodness of fit statistical output in the following Lisrel 8.8 application:

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L I S R E L 8.80
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he following lines were read from file H:\datalisrel_Obs\validasibaruNUM.spj:
-----
EM Algorithm for missing Data:
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Number of different missing-value patterns= 2
Convergence of EM-algorithm in 8 iterations
-2 Ln(L) = 8464.90954
Percentage missing values= 0.01
Note:
The Covariances and/or Means to be analyzed are estimated
by the EM procedure and are only used to obtain starting
values for the FIML procedure
Sample Size = 135
Latent Variables PD PF SE MOT LOL
Relationships
X1-X9=PD
X10-X19=PF
X20-X28=SE
X29-X37=MOT
X38-X55=LOL
Path Diagram

```


variables (0.45), the relationship between pedagogic competence variables and social-emotional competence variables (0.50), and the relationship between pedagogic competence variables and social-emotional competence variables (0.38). The hypothesis presented at the beginning of this article is that the motivation of participants to participate in numeracy literacy training with a coaching and contextual approach mediates the effect of improving teacher competence on learning leadership. Based on the analysis and model calculations obtained from the Lisrel application in Figure 4, the model fit with RMSEA (0.000) and p-value (1,000), which means that the hypothesized relationship between variables is supported by empirical data.

The result is that the motivation variable to participate in numeracy literacy training is influenced by the pedagogic competence variable (0.32), professional competence variable (0.22), and social-emotional competence variable (0.49). The motivation variable to participate in numeracy literacy training affects the learning leadership variable by 0.48. Each has a t-count > 1.650, namely the pedagogic competence variable (4.22), the professional competence variable (3.03), and the social-emotional competence variable (5.53) for 135 respondents. These results are greater learning leadership influenced by pedagogic competence (-0.006), professional competence variables (0.35), and social-emotional competence (0.35) in accordance with the calculations in the goodness of fit statistical output in the Lisrel 8.8 application. Indirect effect for pedagogic competence variable (0.038), professional competence variable (0.048), and social-emotional competence variable (0.054) with t-count of pedagogic competence variable (-1.66), professional competence variable (7.23), and social-emotional competence variable (6.48).

The results of Figures 4. and 5., according to the goodness of fit statistical output in the following Lisrel 8.8 application:

```

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The following lines were read from file H:\datalisrel_Obs\validasibaruNUM.spj:
Raw Data from file 'H:\datalisrel_Obs\validasibaruNUM.psf'
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EM Algorithm for missing Data:
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Number of different missing-value patterns=          2
Convergence of EM-algorithm in          4 iterations
-2 Ln(L) =          6814.11981
Percentage missing values=          0.02
Note:
The Covariances and/or Means to be analyzed are estimated
by the EM procedure and are only used to obtain starting
values for the FIML procedure
Sample Size = 135
Latent Variables MOT LOL PD PF SE
Relationships
X1-X7=PD

```

```

X10-X19=PF
X20-X24=SE
X31-X37=MOT
X40-X54=LOL
MOT=PD PF SE
LOL=PD PF SE
LOL=MOT
set error the variance of X1 to 0.00001
set error the variance of X10 to 0.00001
set error the variance of X20 to 0.00001
Path Diagram
End of Problem
Sample Size = 135
LISREL Estimates (Maximum Likelihood)
  Structural Equations
    MOT = 0.32*PD + 0.22*PF + 0.48*SE, Errorvar.= 0.31 , R² = 0.68
          (0.076) (0.074) (0.091) (0.088)
          4.22 3.03 5.35 3.59
    LOL = 0.48*MOT - 0.063*PD + 0.35*PF + 0.35*SE, Errorvar.= 0.027 , R² = 0.97
          (0.086) (0.038) (0.048) (0.054) (0.013)
          5.57 -1.66 7.23 6.48 2.01
  Reduced Form Equations
    MOT = 0.32*PD + 0.22*PF + 0.48*SE, Errorvar.= 0.31, R² = 0.68
          (0.076) (0.074) (0.091)
          4.22 3.03 5.35
    LOL = 0.092*PD + 0.45*PF + 0.58*SE, Errorvar.= 0.100, R² = 0.90
          (0.040) (0.058) (0.065)
          2.31 7.84 8.87
  Correlation Matrix of Independent Variables
          PD PF SE
  -----
PD 1.00
PF 0.45 1.00
   (0.07)
   6.58
SE 0.38 0.50 1.00
   (0.07) (0.06)
   5.16 7.77
  Covariance Matrix of Latent Variables
          MOT LOL PD PF SE
  -----
MOT 0.99
LOL 0.90 0.99
PD 0.61 0.52 1.00
PF 0.61 0.79 0.45 1.00
SE 0.72 0.84 0.38 0.50 1.00
  Global Goodness of Fit Statistics, Missing Data Case
    -2ln(L) for the saturated model = 6811.062
    -2ln(L) for the fitted model = 5036.569
    Degrees of Freedom = 895
    Full Information ML Chi-Square = -1774.49 (P = 1.00)
    Root Mean Square Error of Approximation (RMSEA) = 0.0
    90 Percent Confidence Interval for RMSEA = (0.0 ; 0.0)
    P-Value for Test of Close Fit (RMSEA < 0.05) = 1.00
    Time used: 0.922 Seconds

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Equation (2), equation (3), and equation (4) by entering the values in Figure 4, and goodness of fit statistical output in Lisrel 8.8. application, for pedagogic competence (X1), professional competence variable (X2), and social-emotional [4] competence (X3), motivation of participants to participate in numeracy literacy training (Z) and learning leadership (Y) to be:

Structure 1:

$$Z = 0.32 X_1 + 0.22 X_2 + 0.48 X_3 + \delta \quad (5)$$

Structure 2:

$$Y = 0.092 X_1 + 0.45 X_2 + 0.58 X_3 + \delta \quad (6)$$

Structure 3:

$$Y' = -0.063 X_1 + 0.35 X_2 + 0.035 X_3 + 0.48Z + \delta \quad (7)$$

Calculation of Structural Equations LISREL Estimates (Maximum Likelihood): motivation is directly influenced by pedagogic competence variables, professional competence variables, and social-emotional competence variables.

The results of the structural equation (1) mean that motivation to participate in numeracy training is influenced by pedagogical competence (32%), professional competence (22%), and socio-emotional competence (48%). The rest is influenced by other factors. Equation (3) means that learning leadership is influenced by motivation to participate in numeracy literacy training (48%), professional competence (35%), and social emotional competence (35%). Pedagogical competence has a negative effect of 6.3%, and as much as 1.7% is influenced by other negative variables. Confirmatory factor analysis (CFA) using SEM with the application makes it very easy to find causal relationships or relationships between two variables that influence each other, as shown in Figure 4, supported by LISREL Estimates (Maximum Likelihood) output. The results of the correlation matrix of independent variables found that professional competence is influenced by personality competence by 0.45 with a t-value of 6.58. Socio-emotional competence is influenced by personality competence by 0.38 with a t-value of 5.16 > 0.50 and professional competence by 0.50 with a t-value of 7.77 > 0.50, which means the effect is significant.

The successful implementation of training and development is highly dependent on motivation [22]. Motivation is a drive or reason that underlies the spirit of doing something and can cause encouragement at work. Motivation is one of the factors that exist in a person to drive and direct his behaviour [11] to meet certain goals. The process of generating a person's motivation is a combination of the concepts of needs, encouragement, goals, and rewards. According to Luthans (1985), the process of motivation begins with a need, followed by a drive, and a goal to be achieved. There are three elements, namely needs, drives, and goals. Needs are defined as needs created whenever there is a physiological or psychological imbalance. Drives are action-oriented and provide an energy boost towards achieving goals. Goals are physiological or psychological balances required to achieve goals and reduce or cut off drives. According to Robbins [44], the desire to do something for organizational goals determines the ability to act to satisfy individual needs [44].

Motivation theories can be divided into two categories: content theories and process theories. Content theories focus on factors within individuals that drive, direct, maintain, and stop behaviour [20]. Process theories explain and analyze how behaviour [32] is controlled, directed, redirected, and terminated. Both groups are important for managers, who, through their work, participate in the motivation process. A well-known theory of motivation is Abraham Maslow's hierarchy of needs. Maslow's levels of needs indicate that if the minimum needs (physiological) are not met, then the needs of this first group will require stronger needs to be met. When physiological needs are met, then the needs of the second group of needs (safety, job security, etc.) will appear, followed by social needs, self-esteem needs, and physical needs by showing themselves. Organizational culture is an approach that is currently widely proposed. Due to the complexity of the current competition. The evolution of organizational models also explains why organizational culture is the right approach. Motivation will be more effective when supported by several conditions, such as: (1) providing incentives in accordance with applicable systems and regulations; (2) building social relationships

filled with kinship; (3) guaranteeing future expectations of job security; (4) providing positive activities; and (5) providing various opportunities for progress for the benefit of the community or organization [45]. This is in accordance with David McClelland's theory of needs, which can be applied directly by organizations (schools or classes) in two ways: identifying motivation and planning approaches taken by leaders. In these two ways, an organization can approach by providing work and feedback [58].

Leadership [33] is one of the factors that influence success in improving teacher competence and learning in the classroom. Leadership is the act of motivating others or causing others to perform certain tasks to achieve specific goals. Teachers of learning [34] have a learning style that comes from a leadership style. Leadership style is a manifestation of the leader's behaviour regarding his competence and ability to lead. Leadership styles consist of personal, nonpersonal, authoritarian, fatherly, democratic, permissive, talent, transactional, charismatic, visionary, team, directive, supportive, participative, delegative, and achievement-oriented leadership [8]. The leadership methods that influence the actions of every successful leader, namely giving orders, giving censure and praise, and accumulating correct behaviour [2], being sensitive to suggestions, strengthening the sense of group unity, developing a sense of responsibility among people, and making valuable and timely decisions. The eight characteristics of principled leadership are continuous learning, being service-oriented, radiating positive energy, trusting others, balanced living, adventurous living, being synergistic, and practicing self-renewal. The important characteristics regarding leadership in organizations, namely self-recognition, openness to feedback, curious risk-takers, concentration on work, balancing tradition with change, and acting as a model and mentor [18].

Teachers and principals should carry out management tasks well and have a leadership spirit in learning [54]. Leaders must clearly understand the virtues hidden in the vision and mission of the school, have a good personality, and carry out leadership duties well, especially in decision-making. All decisions taken must be in accordance with the vision and mission of the school. School protects, that is, has a sense of responsibility and stands side by side with teachers. The Teacher Activator Program (TAP) is expected to have an impact on improving learning leadership competencies [32]. Good teacher learning leadership can have an impact on the success of community-based training, which has an impact on the ability of teacher competencies that improve the quality of learning in the classroom [56]. Teacher motivation and learning leadership become two of the success factors of training [37] that have an impact on the ability or competence of teachers to apply the results of numeracy literacy training in classroom learning [12].

This means not only a theoretical framework as a basic model, which each educational institution individually adapts to its own needs, but also socio-emotional competencies [36]. This community-based numeracy literacy [35] training program was well received by the teachers and program participants in general, who managed to improve their skills in accordance with the predetermined objectives. In addition to improving skills, community-based teacher education brings other benefits, namely synergy between teachers in the community and fostering a culture of collaborative learning among teachers [50]. Training must be carried out periodically, and knowledge must be gained through internal and external training. The finding in this study is that the motivation of participants to participate in numeracy literacy training with a coaching and contextual approach mediates the effect of improving teacher competence on learning leadership.

4. Conclusions

The findings in this study are: (1) there is an increase in cognitive numeracy literacy training participants by 25.8 points, with a percentage increase of 46.38% from the initial value (pre-test

average value). This increase proves that teachers who take numeracy literacy training for two days offline have increased competence related to understanding mathematics learning materials; (2) participants who take numeracy literacy training are very active, from the beginning to the end of the training. This is reinforced by the participants' responses to the numeracy literacy training model. Participants' responses to the application of the training model reached an average of 4.56 (very high) and an average percentage of 91.22% (very good); (3) participants' motivation to participate in numeracy literacy training with coaching and contextual approaches mediates the effect of improving teacher competence on learning leadership.

This research is limited to math teacher training, applied only three times in learning and observation with coaching. There are still shortcomings, namely that it cannot measure the success of increasing student competence, one of which is the increase in grades, understanding, and numeracy skills of students, because the application carried out by teachers who are trainees is only three times before the end of the semester break and can also be studied for other subjects. In the future, it is hoped that there will be research that can capture the results of training for students from the beginning of the semester to the end of the semester after the teacher applies the results of the training as a whole, either mathematics or other subjects.

In light of these findings, education stakeholders are advised that community-based training can serve as a model for comparable training by incorporating different education stakeholder features. Teachers require training that is straightforward, contextualized, logical, and easy to apply to learners. The training's outcomes go beyond simply creating follow-up plans or sharing them with photos of the activities; rather, they involve applying what has been learned and then observing with a coaching method that makes both equal to reaching the intended goals.

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