Investigating Multiple Intelligence-Based Instructions Approach on Performance Improvement of Indonesian Elementary Madrasah Teachers

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Abstract
This study was designed to promote teachers’ understanding of the learner-centered approach through training the multiple intelligences-based instructions, improve teachers’ performance in designing learner-oriented instruction, and improve teachers’ performance in implementing instruction. This study used proactive action research involving 126 teachers (informants) as trainees and instructional design members, came from 10 elementary Madrasah in Indonesia, 36 of them were mentored, and 192 students participated in a focus group discussion. There were 10 principals and two supervisors to be research collaborators. Teachers’ understanding and performance improvement through training multiple intelligence-based instructions, designing student-centered approach, and mentoring the implementation of student-centered learning indicated significant contribution. The teachers’ understanding of multiple intelligence-based instruction was the majority in the good category. The activity of designing the student-centered approach gave a good contribution to the capability of designing every single one of the multiple intelligences-based strategies. The mentoring system improved teachers’ performance greater than those of training and instructional design. Implementation of training, instructional design, and the mentoring system implies improving learning processes and outcomes. Strengthening the recruitment system of teachers and performance improvement, capacity building of educators to design models, approaches, strategies, methods, and learning activities, as well as establishing togetherness on all lines; government, principals, supervisors, community, and teachers as the primary element.

Keywords
teacher’s performance, multiple intelligences, training, designing, mentoring

Multiple intelligence (MI) theory has attracted much attention in the field of education, although Howard Gardner as the inventor of this theory, does not intend to create it to apply learning and instruction. The theory was directed at the philosophy of developmental and cognitive psychology (Gardner, 2011) as a discipline he was interested in since the beginning of his career. Eventually, MI theory became popular in educational practice. The typical studies, which connect MI and education, are becoming multiple intelligences in school (Hoerr, 2004), multiple intelligences in the elementary school (Baum, Viens, & Slatin, 2005), and multiple intelligences in the classroom (Armstrong, 2009). Later on, this study has evolved into a more specific discipline such as multiple intelligences and leadership (Riggio, Murphy, & Pirozzolo, 2001), and the multiple intelligences in the reading and writing (Armstrong, 2003).

In the field of learning and instruction, MI theory has grown so popular, such as teaching and learning through multiple intelligences (Campbell, Campbell, & Dickinson, 1996) and multiple intelligences-based instructions (Yaumi, 2013). Here, multiple intelligences-based instructions is a learner-centered learning strategy, which focuses on identifying learners’ intelligence, talent, and learning preferences and providing the best way for learning. MI is the ability or talent possessed by a person (learner) that includes verbal-linguistic, logical-mathematical, visual-spatial, musical-rhythmic, physical-kinesthetic, interpersonal, intrapersonal, intrapersonal,
naturalistic intelligence (Gardner, 2000), and spiritual intelligence (McKenzie, 2005), or existential (Bowles, 2008).

**Verbal-linguistic intelligence** is the ability to create using spoken or written language. People with high verbal-linguistic intelligence are efficient at reading, writing, and telling stories. Teaching strategies for linguistic intelligence are storytelling, brainstorming, tape recording, journal writing, and publishing (Armstrong, 2009). **Logical-mathematical intelligence** is the ability to deal with a set of reasons, to recognize patterns and rules. This intelligence refers to the ability to explore patterns, categories, and relationships by manipulating objects or symbols to experiment in a controlled and orderly way (McKenzie, 2005). **Musical-rhythmic Intelligence** is the ability and sensitivity to deal with sounds, rhythms, tones, and music, and the ability to appreciate, distinguish, compose, and perform various musical forms (Gardner, 2000). It is the capacity to think in music, listen to patterns and recognize, and perhaps manipulate them (Comeau, Lu, Swirp, & Mielke, 2018; Snyder, 1997).

**Bodily-Kinesthetic Intelligence** is the aptitude of using the whole body to express ideas and feelings and use hands to produce or transform things. This intelligence includes specific skills such as coordination, balance, agility, strength, flexibility, and density (Tracey & Richey, 2007). **Visual-spatial intelligence** or image intelligence or spatial intelligence is defined as the ability to accurately visualize the visual-spatial world and transform visual-spatial perceptions in various forms (Rettig, 2005). **Visual-spatial thinking** is the ability to think regarding visualization, drawing, and three-dimensional shapes.

**Interpersonal intelligence** is defined as the ability to perceive and differentiate others’ moods, intentions, motivations, and desires, and the ability to respond appropriately to moods, temperaments, motivations, and desires of others (DeNevers, 2014). **Intrapersonal intelligence** is the power of understanding oneself and act on them. The core components of intrapersonal intelligence accurate self-understanding include strength and self-limitation; the intelligence of mood, purpose, motivation, temperament, and desire; and self-discipline, understanding, and self-respect (Ingram, Peake, Stewart, & Watson, 2017). **Naturalistic intelligence** is defined as the skill of recognizing and categorizing species, both flora and fauna, in the environment, and its ability to cultivate and utilize nature, and preserve it (Morris, 2004). The core components of naturalistic intelligence are the sensitivity to nature (flora, fauna, cloud formation, mountains), the skill of distinguishing members of a species, recognizing the existence of other species, and mapping the relationship between some species both formally and informally (Leaf et al., 2016).

Beyond doubt, spiritual-existential intelligence is believed to be essential intelligence in human life compared with other kinds of intelligence such as intellectual, emotional (Mayer & Geher, 1996), and social intelligence (Halama & Strizenev, 2004). Spiritual intelligence rests on the heart and is inspired so that if one has spiritual intelligence, then everything done will end up with something pleasant (Ramachandaran, Krauss, Hamzah, & Idris, 2017). However, all these multiple intelligence skills are not natural to contribute to the performance of teachers, even Islamic School, who are viewed as having multiple intelligence, including spiritual and existential intelligence.

Performance improvement can be referred to the perspectives of Association for Educational Communication and Technology (AECT), where educational technology concerns on the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources (Januszewski & Molenda, 2013). Improving performance in this definition refers to the learning effectiveness and efficiency that lead to the refinement of instructional processes that produces the high level of learning achievement. It is characterized by effective learning ability to apply their knowledge in the real world. Teachers’ performance improvement can be gauged through the appropriate lesson plan and good interpersonal skill (Gu, Chen, Zhu, & Lin, 2015). Therefore, it is imperative to carry out training, designing, and mentoring programs.

Training is a process directly tied to specific results that focus on individual, group, and organizational improvement (Whitfield, 2000). Training is also claimed as a process of learning about the sequence of programmed behavior or a planned procedure designed to improve the effectiveness of people at work (Pardey, 2007). Training comprises the application of knowledge and giving awareness to people about rules and procedures to guide behavior, helping to bring positive change to knowledge, skills, and attitudes (Hughes & Terrell, 2011). Training is a process of improving skills and adding to existing knowledge to be able to do the work and shaping the learner to complete more significant work. Teachers’ training includes providing adequate knowledge and skill on learner characteristics, designing instructional strategies, and implementing a quality level of instruction. Therefore, teacher training relates to helping and guiding the individual teacher to provide and implement a high quality of teaching that affects productive students.

Seels and Richey (2012) defined design as “a process of specifying conditions for learning” (p. 30). The design is a process for generating plans or blueprints to develop learning support materials (Gagne, Wager, Golas, Keller, & Russell, 2005, p. 26). Instructional design is a methodical procedure for creating instruction based on scientific research that produces effective, efficient, and reliable instruction (Morrison, Ross, Kemp, & Kalman, 2013, p. 8). Instructional design covers an emerging profession, maintaining efficient and effective performance, guiding a model, systematic, using open system theory, and creating the most cost-effective performance (Rothwell, Benscoter, King, & King, 2016). Hence, training teachers to design instruction is the best way to produce the most suitable learning resources for better performance.
Furthermore, mentoring is perceived as “an association involving two parties who are unrelated inside a line-management structure, in which one party guides the other throughout a specified period and headed for an arranged purpose to be familiar with innovative circumstances” (Kay & Hinds, 2012, p. 17). Similarly, mentoring is a one-to-one relationship between the mentee and mentor, which aims to support the mentee’s learning and development (Hobson, Maxwell, Stevens, Doyle, & Malderez, 2015). Mentoring includes highly personal interactions, conducted under different circumstances in different schools, but the roles of mentoring cannot be rigidly specified. Nevertheless, good-quality mentoring in schools makes an essential input on the improved teaching performance for fresh teachers and experienced learning skills for pupils.

The commitment of Indonesian government to improve educational quality is currently viable. The idea of improvement is commenced from rectifying the teachers’ performance that is considered as the key role of educational development. The Ministry of Religious Affairs on Madrasah (K-12 Islamic schools) division is responsible for the educational system; therefore, it has designed and executed various programs to achieve a better quality of teachers. The performance of Madrasah teachers, however, has not shown maximum results. Teachers’ professional competence, educational insight, and instructional strategy understanding have not performed qualified standards (Sanaky, 2016). Teachers who have been certified at the Madrasah Ittidadiyah Negeri and Madrasah Tsanawiyah Negeri (Public Islamic Elementary School and Public Islamic Junior High Schools) in Indonesia have a moderate level of performance in the teaching and learning process (Hurmaini, 2011). The pedagogical ability of the certified teachers is in a sufficient category (Suhandani & Julia, 2014). Thus, there is no difference in performance between teachers who passed the certification through portfolio collection and those who passed it through the Education and Teacher Professional Training programs (Khodijah, 2016).

There is, apparently, something amiss with the teachers’ performance improvement programs. The certification programs were initiated through Teachers’ Portfolio Collection (TPC), Teacher Professional Education and Training (TPET), and currently formulated in the form of Teacher Professional Education (TPE). This latter program began to be implemented in 2015 and is seen as a solution to the disadvantages of implementing TPC and TPET (Buchory, 2015). However, some educational practitioners still feel restless and even dubious of the program fruitfulness. The consideration of implementing TPE is still assumed unable to give a significant effect on teachers’ performance improvement as expected.

At least four leading indicators are characterizing the potential weaknesses of the TPE program; theoretical-oriented learning, limited time duration, learning sustainability, and lack of a mentoring system (Yaumi, 2014). First, the pattern of theoretical-oriented learning is underpinning the implementation of instructional activities, whereas the teachers’ need is best practice in designing and executing the instruction. Second, the duration of time is relatively short (1-year program), while there are dozens of courses that should be offered. Third, there is no sustainability of the learning process after the program is completed, the possibility of teachers’ learning motivation changes to decline. Fourth, the program was not designed to have classroom mentoring and coaching, and may cause teachers’ difficulty in bridging the suitability between the theories studied in TPE program and the real conditions in the field of learning and instruction.

Realizing some weaknesses of the TPC and TPET programs, as well as the TPE program, it is deemed necessary to study teachers’ performance improvement through training, designing, and mentoring teachers. We implement the student-centered learning by promoting students’ multiple intelligences (MI) or we call multiple intelligences-based instructions. The training followed by mentoring contributes improvement and consistency of teachers’ performance in instructional implementation (Harris & Sass, 2011). The formal and informal mentoring is positively correlated with individual psychological support and teacher professional development.

Training about the best way to develop students’ talent and creativity through multiple intelligences-based-learning is a strategic step for implementing an independent instruction (Riggio & Pirozzolo, 2002). The implementation of multiple intelligences-based learning can support students’ interest, and promote creativity and students’ excellence (Chan, 2001; McClellan & Conti, 2008). Therefore, developing teacher capacity is vitally important to the development of the school system (King, 2018). However, many teachers disregard to address students’ characteristics and need when designing and implementing the instructional process. Learners’ preference, interest, talent, and basic skills have not been an integral part of curriculum development and tended to be separated with the cultivation of students’ hidden excellence and the establishment of high competencies of the coming generation.

**Research Questions**

**Research Question 1:** How is the teachers’ performance after following the training of the multiple intelligences-based learning?

**Research Question 2:** How is the teachers’ performance improvement after following the workshop on designing student-centered instruction as the implementation of multiple intelligences-based learning?

**Research Question 3:** How are the teachers’ performance improvement and the students’ response after implementing the mentoring system through multiple intelligences-based learning in the classroom setting?
Method

The method of this research is action research, which is a research method that emphasizes social practice, aims toward improvement, a cyclical process, followed by systematic discovery, reflective process, participatory nature, and determined by implementers (Kember, 2000). This type of action research includes practical action research and is at the school level (Schmuck, 2006). This study uses Elliott’s model with slight modifications, mainly reconnaissance (examination) that is modified into the evaluation. Before making a general plan of action in the first cycle, the researchers identified the initial ideas and reconnaissance or fact finding (Elliot, 1991).

The research was conducted in one area by randomly selecting 126 teachers spread from 10 Madrasah Ibtidaiyah in one regency of South Sulawesi, Indonesia as trainee and instructional designer, and 36 teachers from six Madrasah as mentees. Training includes three components: (a) the concept of multiple intelligence-based learning, (b) the strategies for identifying learners’ multiple intelligence, and (c) intelligence development strategies of learners. Then, the trainees are divided into 10 groups based on the category of origin of the Madrasah to be involved in the learning strategy design activities to develop students’ multiple intelligences.

The study continued with mentoring activities of 36 teachers from six Madrasah who had attended training and learning design activities involving 10 principals and two supervisors as collaborators. The study also involved 192 students (six classes from six Madrasah) taken from Grade IV to Class VI to obtain information through focus group discussions. The data were collected through the research instruments including observation sheets, question guide for focus group discussion, and test. Data were analyzed qualitatively and quantitatively. Qualitative data analysis was conducted using the interactive model developed by Miles and Huberman, that is, data condensation, data display, conclusion drawing, and verification (Miles, Hubberman, & Saldana, 2013). Quantitative data are calculated based on assessment criteria that do not meet standard = 1, below standard = 2, meet standard = 3, and above standard = 4 to find the mean score or to calculate the percentage score of the respondents who got a particular score. To calculate the average score, the researchers used the following formula:

\[ X = \frac{\sum X}{N} \]

Where
- \( X \) = Scores
- \( \Sigma \) = Summation
- \( N \) = Number of Scores

Findings

Pre-Cycle

At this stage, the researcher along with the supervisor and principal conducts observations on the learning implementation using Gagné’s Nine Events of Instruction (Kruse, 2009). Gagné’s Nine Events of Instruction combined with the three learning activities of the Branch: beginning, middle, and ending activities. The details of the learning activities are presented in Table 1.

The results of observations on teacher performance in the implementation of learning as illustrated in Table 1 show that there is an average of 61.29% of teachers who have not met performance standards, and only 38.45% average that meet performance standards. This number indicates that teachers’ performance in implementing learning is still quite low. Similarly, the learning strategies used do not reflect the learning-oriented characteristics of learners by exploring their talents, interests, and talents. This can be seen from the learning strategy observed jointly with the head of the Madrasah with the supervisor, as shown in Figure 1.

Figure 1 shows that teacher-centered learning such as lecture, memorizing, and writing and doing the test, and guided learning still dominate the implementation of learning, while student-centered learning such as Socrates questioning, role play, inquiry, and quiz-based learning cannot be put into

| Instructional activities | Observed informant |
|--------------------------|--------------------|
| A. BEGINNING ACTIVITY    |                    |
| 1. Gaining attention     | 75 42 9            |
| 2. Informing learners of the objective | 3 20 1 102 |
| 3. Stimulating recall of prior learning | 84 26 16 |
| B. MIDDLE ACTIVITY       |                    |
| 4. Presenting the stimulus | 2 96 18 10 |
| 5. Providing learning guidance | 16 93 17 |
| 6. Eliciting performance | 102 24             |
| C. ENDING ACTIVITY       |                    |
| 7. Providing feedback    | 40 72 14           |
| 8. Assessing performance | 77 38 11           |
| 9. Enhancing retention and transfer | 87 21 18 |

Note:
- Not meet standard
- Below standard
- Meet standard
- Above standard

The indicator of performance success of action study is when there is 90 percent of respondents who have reached the criteria “meet standards or above standards.”

Table 1. Performance of Teachers in the Implementation of Learning.
practice correctly. Therefore, researchers, principals, and supervisors consider giving training to these teachers.

**First Cycle**

In this section, the researcher prepares a training plan that includes agenda, training materials, observation sheet, and comprehension test to promote teachers’ understanding of learner-centered approach through multiple intelligences-based instructions. First, the 3-day training agenda consists of the first day of the theory and concept of multiple intelligences, the second day on how to identify multiple intelligences, and the third day about strategies to develop multiple intelligences. Second, training materials using the book on multiple intelligence-based learning, whose content has depicted theory, intelligence identification instruments, and multiple intelligence-based learning strategies (Yaumi, 2013).

Third, the observation sheet was developed for use by collaborators in observing the researcher during the training. The observation sheet includes some steps. The primary pace is the groundwork for the training materials. The involvement of the trainee is the second step. The third step is the relationship of training materials with the real life. The fourth step is training accommodation on plural intelligence. The next step is interaction in training followed by media use in training, then continues to the application of the training method. After that, these steps followed by the agreement on discipline in training, a spatial arrangement in training, and arrangement as well as arrangements for the use of tools and resources. Finally, the next observation steps are variations in spatial arrangement, the role of the instructor in the monitoring of the learning process, and feedback to the trainees is the last step.

Fourth, the comprehension test consists of 50 items given on the third day or after training. All the tests have been tested for validity and reliability. Test components are divided into three domains: interactive, analytical, and introspective. The results of the participants’ ability tests on multiplagiaristic learning can be presented in Figure 2.

Based on Figure 2, the highest score obtained by 105 (83.33%) respondents (teachers) got a score between 75 and 84 with the good category, 18 (14.29%) got a score of 85 to 100 or excellence category, and only three (2.4%) got a score of 65 to 74 or enough category. There was no respondent got poor and fail score. Thus, the training outcomes contribute to improve teachers’ performance.

After completing the training, the teachers then return to their respective schools and carry out teaching assignments to apply the new knowledge received in training. At the same time, researchers, heads of Madrasah, and supervisors made observations using previous observational guidelines. Observation is also directed to the learning strategies that are applied during the learning process.

**Second Cycle**

In the second cycle, 126 informants are involved in the design of learning. Aspects that are designed are (a) lesson plan, (b) teaching materials, (c) and learning strategies. The

![Figure 1. Teachers' learning strategies.](image1)

![Figure 2. Result of teachers' comprehension test.](image2)
lesson plan group is divided by school and grade or class, while for teaching materials and learning, strategies are divided by class and may not be based on the origin of the school. There are 30 lesson plans generated, six teaching materials based on grade level, 24 learning strategies. The constructs of instructional materials developed are (a) introduction, (b) concepts, (c) procedures, (d) tools or materials, (e) exercises, and (f) student worksheets. The construct is formulated from the discussion and various inputs. Learning strategy refers to learning based on multiple intelligences selected based on input from teachers based on their real-life experiences in the field. The learning strategy is referred to as in Table 2.

Table 2. Multiple Intelligence-Based Instructional Strategies.

| Multiple intelligences       | Instructional strategies                                                                 |
|-----------------------------|------------------------------------------------------------------------------------------|
| 1. Verbal-linguistic        | Brainstorming, storytelling, journal writing, and reading biography                      |
| 2. Logic-mathematic         | Critical thinking, experiment Socrates question, problem-solving                        |
| 3. Visual-spatial           | Mind mapping, visualization, Colorful paper, painting, and sketching.                    |
| 4. Bodily-kinesthetic        | Field trip, role play, pantomime, practice, demonstration.                               |
| 5. Music-rhythmic           | Discography, instrumental, recording, playing super memory music or others               |
| 6. Interpersonal            | Jigsaw, peer teaching, teamwork, group study                                            |
| 7. Intrapersonal            | Personal task/study, reflection, self-directed learning, concentration.                  |
| 8. Naturalistic             | Learning through nature, windows onto learning, plants as props, Pet-in-the-Classroom, imitating animal sounds |
| 9. Existential-spiritual    | Responding real phenomena, charity and learning, reading the romantic poem, writing a reflective essay |

Figure 3. Teachers’ performance before and after given action.

In the third cycle, there were 36 teachers from six Madrasah. Mentoring is done directly by the principal and supervisors as collaborators under the coordination of researchers. The mentoring in this study mostly uses a one-on-one guidance strategy where teachers are given as many opportunities as possible to practice especially to apply the knowledge gained through training and practice of the lesson plans, instructional materials and instructional strategies that have been designed.

Each collaborator enters the classroom and observes the execution of learning from opening lessons to closing lessons. Collaborators with the researchers made passive observations because they did not participate directly in the learning activities. The observation shows improvements in the performance both in designing the learning and in the implementation of learning. The categories used are far below standard, does not meet standards, meets standards, far above standards. In this report, we only use two categories, below standard and above standard. To know in detail about improvements in each cycle ranging from training, learning design, to mentoring, the following presented the teachers’ performance of Islamic public school throughout the cycle as in Figure 3.

Third Cycle

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Figure 3 above shows that teachers’ performance conditions are in categories above standards and below standards. In pre-cycle, there were only 38.45% of the above standard and dominant category (61.29%) below standard. However, after training, designing, and mentoring, teacher performance showed significant improvement. After attending training, teacher performance in learning implementation rose to 43.21 from above the standard category, then rose to 65.08% after following instructional design, and 86.38% after following the mentoring system. Thus, there is a definite contribution to mentoring action to improve teacher performance, which is 30.25%.

Students’ Response

After providing training, designing, and mentoring, the researchers requested a response of 192 high school students (fourth, fifth, and sixth grade) of six Madrasah on learning done by teachers after following the above activities. Student responses are expressed in focus group discussions taken at different times in each school. The questions asked range from learning activities, learning materials, strategies, and learning evaluations. Questions are also directed at their general assessment (learners) relating to the attitudes and behaviors of teachers in the classroom. The results of the learners’ responses show that the overall learning applied in the classroom is described as follows:

- Active Learning because it involves learners in completing tasks. Teachers provide some tasks related to learning materials, then ask learners either in groups, in pairs, or independently in completing the task.
- Exciting Learning because of the task is given by real conditions (real world) faced by learners in everyday life.
- Fun learning because teachers are more open to directing, fostering, and facilitating the development of learners by identifying and directing learners’ abilities through games, pantomime, role play, and the like.
- Self-confident learning because it involves learners to show the work and announce the achievements obtained to learners that lead to the pride that fosters students’ self-confidence.
- Learning that gives satisfaction because the results of hard efforts made learners always receive awards in the form of certificates, asterisks, or exciting storybooks.

Discussion

Teachers’ understanding of learner-centered approach through training of multiple intelligences-based instructions shows results in both categories. The teacher’s performance after the training shows that it has been able to implement a variety of learning strategies and fun by the talents of learners. Teachers get a positive response from learners including proper attention, quick understanding, increased confidence, and a level of satisfaction that is evenly distributed for almost all learners. The training had an impact on improving teacher performance.

Teachers’ performance improvement in learner-oriented instruction design can be observed from their ability to design lesson plans, learning materials, and learning strategies. Teachers succeeded in formulating learning strategies for each of the multiple intelligences. These multiple intelligences covering (a) verbal-linguistic (Armstrong, 2009), (b) logic-mathematic (McKenzie, 2005), (c) visual-spatial (Rettig, 2005), (d) bodily-kinesthetic (Tracey & Richey, 2007), (e) music-rhythmic (Gardner, 2000; Snyder, 1997) or musical prodigy (Comeau et al., 2018), (f) intrapersonal (Ingram et al., 2017), (g) interpersonal (DeNevers, 2014), (h) naturalistic (Morris, 2004), and (i) existential-spiritual (Bowles, 2008; Halama & Strizenec, 2004; McKenzie, 2005). The result of the observation of the teacher designed the lesson showed that there was an improvement of 12.87% on teacher performance. Peer tutorials and the interaction between teachers and trainers can cast instructional materials, lesson strategies, and lesson plans that help them create exciting and fun learning.

Teachers’ performance improvement in implementing the learner-centered instruction through the mentoring system contributes very well. The data show that there are 30.25% of teachers who get improved performance after following the mentoring activities. The contribution of mentoring activities gave a much larger portion of training activities (4.76%) and learning design activities (12.87%). Students’ response is positive on the teachers’ way of teaching after the teachers attended the training, designing instruction, and mentoring system. The students have very good attention, retention, confidence, and satisfaction in learning.

The Limitation of the Research

The improvement of the teachers’ performance in this study just reached the specific aspects of the student-centered approach, especially those related to multiple intelligences-based learning such as conceptual knowledge on how to identify students’ intelligence and instructional strategies for developing the intelligence, but does not lead to general aspects of pedagogical and professional competency of teaching and learning. This study also did not reach the students’ learning outcomes as the indicator of teacher performance improvement in implementing the instruction, but revealed their attitudes and views in relation to the implementation of multiple intelligence-based learning. The involvement of the local government and stakeholders was only in the part of opening ceremony, not in the process of training, designing, and mentoring sessions. The researchers were only assisted by two teachers’ supervisors and 10 principals as the collaborators.
Conclusion

The results of this study indicate that training activities contribute to improving teachers’ performance. Teachers participate in multi-intelligence-based learning exercises wherein training gets the material about the concept of intelligence. Also, ways to identify and develop intelligence through learning steps can contribute positively to the implementation of learning. The training directs teachers to implement student-centered learning including strategies and learning methods that accommodate individual learner development (Riggio & Pirozzolo, 2002). Teacher performance improvement occurs because, during the training, teachers are directed to understand the concepts of multiple intelligences, how to identify intelligence and strategies for the development of each student’s intelligence to gain the diversity of potential that each learner has. The diversity of learners’ intelligence and talents requires teachers to apply diverse learning strategies so that individual learners can be well served.

Performance improvements continue to occur after teachers design learning based on the uniqueness and diversity of learners. The results showed that the design activities contributed to teacher performance after training and designing the lesson. In the comparison between the improvement of teacher performance after being given training and after being given activity of learning design, the design activity contributes much more than training activity. It is acknowledged that design activity exhibits much more detailed activities including preparing lesson plans, instructional materials, and learning strategies. However, the interaction between teachers and trainers in the implementation of instructional designs has had a significant impact on improving teaching materials. Teachers also get tutorials directly from peers when having difficulty in determining learning strategies to apply in classroom settings. Such interactions can provide meaningful improvements to the lesson plan to facilitate the implementation of learning.

After analyzing the contribution of training and design in improving teacher performance, the mentoring system is also proven to contribute significantly to the implementation of learning (Harris & Sass, 2011). The contribution of mentoring activities gives a much more substantial portion of training activities and learning design activities. This is because researchers, principals, and supervisors as mentors can witness firsthand the learning and interaction models built into the classroom. Similarly, the reaction of learners to learning can be witnessed directly as well. When problems arise in the interaction between teacher and student as the mentors make their observations, they can provide input to the teacher directly and can even be shown the best way to solve the problem at hand. That is, the mentee can take lessons from every example demonstrated by mentors.

Implication for Further Research

In general, the implementation of training, design or learning planning, and mentoring system implies improving the process and learning outcomes by optimizing the application of learning activities oriented to the development of intelligence, attitudes, and skills of learners. Specifically, the implementation of the training has implications for strengthening the recruitment system of educators and academic staff, as well as the continuous improvement of the educational quality.

Learning planning oriented to the characteristics and needs of learners has an impact on improving the capacity of educators to design and produce models, approaches, strategies, methods, and learning activities. The role and function of educators do not only act as facilitators but also as designers, engineer, or designer based on the latest findings obtained through in-depth study. Implementation of assistance in improving the performance of the impact on the establishment of togetherness and cohesion on all lines both from the side of the government is directly responsible for the implementation of education, related elements such as school supervisors, and the community represented by the school committee. Thus, roles and responsibilities of the principal in building and developing the school model is an agent of change, especially the collaboration played by teachers as the primary element that directly confronts the learners as the developed object.

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