The determinant factors that influence results of gradual training of early childhood education teachers based on the program evaluation in Indonesia

Ach. Rasyad1*, Bambang Budi Wiyono2, Zulkarnain1 and Sucipto1

Abstract: The aim of this research is to explore how different variables influence the results of training completed by teachers of young learners. This research was conducted in Indonesia using the correlational research method. Samples of 418 teachers were taken from 11 provinces across Indonesia using the multistage random sampling technique. Questionnaires, interviews, and documentation were used in data collection, whereas the descriptive statistical and inferential techniques were used to analyse the data. Six variables were considered: (a) quality of instructors, (b) completeness of facilities, (c) availability of modules, (d) quality of the evaluation, (e) suitability of materials, and (f) quality of the inputs. Three of the aforementioned variables—namely, regarding materials, instructors, and input sessions—contributed significant effects to the training results. The findings were thoroughly discussed based on the perspective of further analysis, theories, and previous studies.

ABOUT THE AUTHORS

Ach. Rasyad is a Doctor in Educational Management. He has been Head of Nonformal Education Department in Faculty of Education of Universitas Negeri Malang (UM) Indonesia in 2014-2018. He is an active professional in the field of training, educational management, and evaluation. He researched and authored many books and articles for journals in the topics, as well.

Bambang Budi Wiyono is a Full Professor in Education and Dean of Faculty of Education of Universitas Negeri Malang (UM). He also conducted many researches and published articles in educational management, leadership, training, learning and teaching topics.

Zulkarnain is a Doctor in Nonformal Education (Social Science), and Head of Nonformal Education Department in Faculty of Education UM in 2018-2022.

Sucipto is a Master in Nonformal Education and Head of Laboratory School Foundation of UM. He has been the Vice-Rector in Student Affairs of UM in 2010-2014.

PUBLIC INTEREST STATEMENT

The early childhood education has become the top priority of the nation development, which aims at developing children's personality and basic capability. It can be achieved if it is supported by qualified teachers. One of the techniques to improve teachers' quality is trainings even though there have been a lot of trainings held nowadays, but not all of them are effective in enhancing teachers' skills. Therefore, further research needs to be done to analyse which components give significant effects on the training results. The purpose of this research was to find the most dominant variables which influenced the results of the gradual training of early childhood education teachers. The research findings showed that there were three variables which gave significant effects on the training outcomes, namely the quality of instructors, the accuracy of materials, and the quality of input sessions. To sum up, the training results would be effective if it was supported by qualified instructors, suitable materials, and excellent inputs.
1. Introduction
Education, both formal and informal, plays an important role in building a nation. Early childhood education is the first level of schooling for children, and it is central to assisting in their growth and development to prepare them for higher levels of education. If quality education is provided in early childhood, it will support the success of further learning. Therefore, it has become the top priority for education development in Indonesia.

The roles of teachers determine the success of early childhood education. As professional educators, they plan and execute the lesson structure, steer the learning process, and evaluate learning outcomes. Simultaneously, teachers have a responsibility to guide, care for, and protect their students; they are the main component that determines the quality of the process and learning outcomes of children in the education system. Sherman et al. (2008) demonstrated that the teacher factor has a strong impact on students' learning outcomes. In addition, the study results of McMeeking, Orsi, and Cobb (2012) indicate that teachers' professional development influences learning outcomes, as well. Therefore, it is important to be supported by capable teachers to achieve a quality education. Early childhood education teachers should be qualified and equipped with certain skills needed to educate young learners.

2. Literature review

2.1. Qualification and competency of early childhood education teachers in Indonesia
The quality of teaching and learning processes depends on the educators, as they not only become their students' role models but also are responsible for the learners' success (Thornton, 2007). Teachers must show a positive attitude and possess a personality that demonstrates honesty, democracy, and good social values.

Realistically, the qualifications and competencies of early childhood education teachers vary. Qualification relates to the educational requirements of early childhood education teachers, whereas competence refers to their abilities to perform professional tasks. Based on the Regulation of the Minister of Education and Culture of Indonesia Number 137 of 2014, early childhood education teachers are classified into three categories: early childhood education, assistant, and young assistant (Ministry of Education and Culture, 2014). The minimum requirement for early childhood education teachers is a Diploma IV or bachelor's degree. An assistant teacher must have at least a Diploma IV, bachelor's degree, or Diploma II, whereas young teacher assistants must have at least graduated from Senior High School and possess a training certificate from a competent government agency. Truthfully, many teachers only have an elementary, high school, or vocational school education, and few teachers hold bachelor degrees. Hence, their competencies are considered rather low (General Inspectorate of the Ministry of Education and Culture, 2019).

Competence relates to the abilities early childhood education teachers must possess. Competency is the level of knowledge, skills, and behaviour held by individuals in conducting organizational tasks. There are four main competencies teachers should have pedagogic, personal, and social skills, as well as professional competencies. The pedagogic skills include knowing the learners' characteristics, awareness of learning theories and their principles, curriculum development, conducting developmental programs, using communication and information technology wisely, facilitating learners' development, and maintaining evaluations of the learning process and outcomes. The personality competency aspects include exhibiting a good attitude, appropriate conduct, responsibility, and professionalism. Furthermore, teachers much act inclusively, show
fairness, communicate effectively, and have social adaptability. Lastly, mastering materials and competency standards, syllabi development, and continual professional enhancement are the main aspects of professional competence. Realistically, teacher competence still does not fully meet the expected criteria. The results of teacher competency tests showed that the average teacher competency is still below the minimum (General Inspectorate of the Ministry of Education and Culture, 2019).

Thus, early childhood education teachers must enhance their quality and competency. The Directorate of Teachers Training and Early Childhood Education Teachers and the Ministry of Education and Culture have held trainings and workshops, called gradual training, to increase teacher quality.

2.2. Gradual training of early childhood education teachers in Indonesia
Gradual training is one form of in-service education with the main purpose to gradually and continuously improve the quality of teachers of early childhood education. The gradual training consists of three levels: basic, advanced, and final advanced. Basic level gradual training is intended to strengthen the competency of educators to achieve the minimum requirement for young assistant teachers. Advanced gradual training is aimed at improving the competency of co-teachers (or assistants), while the final advanced gradual training is intended to strengthen the competence of early childhood education teachers. Furthermore, the training activities are conducted, starting from the central and provincial levels to district or city levels. After taking part in these gradual trainings, it is expected that teachers will be able to improve their skills to provide a better education.

Basic level gradual training is conducted with a load of 48 45-minute lessons and 200 hours of independent assignments. Advanced gradual training is conducted with a load of 64 45-minute sessions and 200 hours of independent work. The final advanced level training consists of 80 hours of study time, at 45 minutes per session, and 200 hours of independent assignment lessons. The duration of the training is more than a good duration of the teacher professional development (Institut, Darling-Hammond, Hyler, & Gardner, 2017). Training material refers to teacher competencies, such as the basic concepts of early childhood education, early childhood development, learning style of early childhood, lesson plans, assessment of child development, peer teaching, and other learning aspects. The training material consists of theory and practice, while the training method consists of lectures, discussions, questions and answers, case studies, practice, and self-reflection. The trainers consist of bureaucrats, academics, practitioners, and other members of the community with a bachelor’s degree (at minimum), competence in early childhood education, mastering training materials, competency in preparing lesson plans, competence in assessing children’s development, and other instruction components, as well as being a certified trainer.

2.3. Effect of training on the teacher’s competence
In addition, these trainings are a type of in-service education applied to increase teachers’ skills, which emphasizes the practical and effective methods done within a short time. However, truthfully, it still has not been fully achieved. Wiyono, Kusmintardjo, and Sucipto (2017) showed that among 20 teachers’ development techniques, only 8 indicated a strong positive correlation with the teachers’ performance. On the other hand, the techniques used in the training also showed a positive correlation with a low coefficient value. Other studies by Wiyono, which applied to principals, revealed that leadership workshops based on action learning and self-evaluation theories have effectively improved the transformational leadership skills of principals (Wiyono, 2014, 2018). The leadership training based on developmental action learning theories emphasizes the participants’ involvement, whereas self-evaluation stresses a teachers’ self-development.

While these studies have shown that some training has been very effective in enhancing teachers’ skills and abilities, another training has not had favourable results. The research conducted by Abdulloh, Samupwa, and Alzaidiyeen (2009) also presented that teacher training has influenced their work, while Sahbaz (2011) showed that in-service for counsellors did not
significantly influence the learning outcomes in inclusive schools. Additionally, Azar’s study (2010) proved that there have not been differences between teachers’ personal self-efficacy beliefs and their expectation of those who participated in pre-service and in-service education. Hence, in-service programs have not affected the teachers’ competence. In contrast, a study by Truitt (2011) pointed out that there has been a significantly positive correlation between the staff’s experience and their proficiency in completing their assignments. Therefore, it needs to be thoroughly discussed.

Furthermore, the success of these trainings not only depends on the quality of the host but also on the trainers’ quality, the partners, assessors, training strategies and facilities, and other supporting components. Sabri’s study (2006) showed that teacher training should place more emphasis on practical methods than theories. On one hand, Neil (1986) indicated that skill development based on the needs to emphasize collegial interaction and self-development has been effective. Aligned with Neil’s research, Wiyono, Kusmintardjo, and Imron (2015) also proved that effective supervision has emphasized teachers’ collegial participation, according to the humanistic principles.

Based on those views and findings, further research is necessary to determine what factors support the training. Kirkpatrick and Kirkpatrick (2006) showed that the following stages were necessary to hold the training: 1) identifying the needs, 2) determining the aims, 3) formulating the objectives, 4) deciding the materials, 5) gathering the participants, 6) arranging the schedules, 7) preparing the facilities, 8) choosing the trainers or facilitators, 9) preparing the learning aids, 10) coordinating the implementation, and 11) conducting the evaluations. On the other hand, El Hajjar and Alkhanaizi (2018) revealed five factors that determine the training effectiveness: content, environment, presentation style, facilities and materials, and the training schedule. The study of Yaqoot, Noor, and Isa (2017) found that two factors—environment and trainee motivation—influence the effectiveness of training. In addition, the study results of Ngure and Juma (2018) indicate three factors that have a significant positive correlation: training design, trainee characteristics, and training environment. The three studies did not examine comprehensive learning components central to the training system—namely, instructors or teachers, training inputs, training materials, training facilities, accuracy of training materials, and training evaluations. Based on this foundation, a more in-depth research is necessary to learn more about how these variables influence gradual training, as it is still unknown which components contribute the most to the training’s success.

2.4. Objectives of research
This study was conducted according to the aforementioned foundational research. This study aims to find variables that significantly influence the results of the gradual training of early childhood education teachers and—with those results—determine the correlation coefficient of the following variables: (a) instructor or teacher, (b) input, (c) training, (d) materials, (e) training facilities, (f) accuracy of training materials, and (g) training evaluation. This study also aims to find variables with a high predictive power on the results of the teacher gradual training in early childhood education. This research is expected to improve the planning, development, and execution of early childhood teacher training.

3. Methodology

3.1. Research design
Quantitative research was conducted using a correlational research method intended to provide a clear and systematic picture of different factors to uncover which main variables significantly influence the success of the teacher gradual training of early childhood education. Correlational research cannot only find correlation coefficients between variables but also for predictions (Mertens, 2010). Therefore, questionnaires were used to collect the data, and interviews and documentation were completed to support the findings.
3.2. Participants

This research was completed in Indonesia, and the multistage random sampling technique was used to determine the samples. The samples taken from the different regions are divided into three parts: western, central, and eastern Indonesian regions. Western Indonesia is a region with a relatively advanced economy based on agriculture. Six of 18 provinces were taken as research samples, namely North Sumatra, South Sumatra, West Java, Central Java, East Java, and Riau Islands. Then, one to two cities/districts were chosen to ensure samples of eight cities/districts, from which 30 teachers—who have completed gradual training—were then chosen randomly as the research samples.

Central Indonesia is the territory with the second economic level based on agriculture and maritime. Three of 12 provinces were taken as samples, namely the provinces of West Kalimantan, South Sulawesi, and West Nusa Tenggara. In addition, one to two cities/district were taken as samples to ensure samples of four cities/district, from which 30 teachers were chosen randomly as the research samples.

Eastern Indonesia is a maritime-based third economic level. Two of four provinces were taken as samples, namely the provinces of Papua and West Papua. In addition, one to two cities/district were taken as samples to ensure samples of two cities/district, from which 30 teachers were chosen randomly as the research samples.

The total samples were 420, but there were two samples that did not fill the instruments completely so that the samples were taken at 418. The number of samples is presented in Table 1.

The total population is 175.828. Based on Krejcie and Morgan's table for determining sizes of randomly chosen samples, it is required a sample size of 384 (Johnson & Christensen, 2014). The samples included 64.59% who did not have basic skills (non-certified) and 35.41% who had good basic skills (certified). Thus, the number of samples taken was representative. The interview was conducted with heads of education office each city/district to add information about the needed data. The documentation also to enrich the data information.

| Number | Area           | Province     | City          | Teachers |
|--------|----------------|--------------|---------------|----------|
| 1      | West Indonesia | North Sumatera | Medan         | 30       |
|        |                |              | Humbung Hasundutan | 30       |
|        |                | South Sumatera | Palembang     | 30       |
|        |                |              | Banyuasin     | 30       |
|        |                | West Java    | Kuningan      | 30       |
|        |                | Central Java | Cilacap       | 30       |
|        |                | East Java    | Jember        | 30       |
|        |                | the Islands of Riau | Batam | 30       |
| 2      | Central Indonesia | West Kalimantan | Pontianak   | 30       |
|        |                |              | Ketapang      | 30       |
|        |                | South Sulawesi | Makassar     | 30       |
|        |                | West Nusa Tenggara | Mataram | 30       |
| 3      | East Indonesia | Papua        | Jayapura      | 29       |
|        |                | West Papua   | Kaimana      | 29       |
|        |                | Total Samples |              | 418      |
3.3. Data gathering strategies

The research instrument was developed based on the research variables. According to the objectives of the study, seven research variables were studied. Six were exogenous, namely, (1) inputs, (2) instructors, (3) facilities, (4) modules, (5) evaluations, (6) material accuracy, and one endogenous variable is the quality of teaching. Furthermore, the number of items for each instrument is (a) 7 items for quality of the instructors (X1), (b) 8 items for the completeness of the facilities (X2), (c) 5 items for module availability (X3), (d) 6 items for quality of the evaluation (X4), (e) 10 items for accuracy of materials (X5), and (f) 1 item for quality of the input (X6). The training results were indicated by the quality of the teacher training, after it was conducted (Y), with as many as 80 items. These were then divided into four dimensions, i.e., 23 points of planning the learning process, 21 items of the learning process, 12 items of the learning evaluation, and 24 items of the management of early childhood education development. The type of instrument used was a rating scale that measured quality and frequency into four categories: very good = 4, good = 3, poor = 2, and very poor = 1. For frequency, they were as follows: always = 4, often = 3, rarely = 2, and never = 1.

In addition, the instruments were authenticated to check the validity and reliability prior to using it in this research. Content and item validity were tested using instrument trials, whereas the Cronbach’s Alpha reliability analysis technique was used to check the instrument’s reliability. Based on the item validity analysis result, the coefficient of each item was >0.3. The result of the reliability analysis of the instructor quality was $r = 0.867$, completeness of the facility was $r = 0.865$, module availability was $r = 0.896$, quality of the evaluation was $r = 0.867$, accuracy of the materials was $r = 0.908$, and the result of the training was $r = 0.878$. The reliability coefficient of all instruments was >0.7. Therefore, it can be concluded that the instruments used were valid and reliable (Johnson & Christensen, 2014; Mertens, 2010).

Analysis of construct validity with the multitrait-multimethod that tested convergent and discriminant validity also showed the same results. Items that measure the same construct highly correlated, whereas items that measure different construct indicated a low correlation. Table 2 is an example of analysis results of teacher quality and material accuracy construct.

Based on Table 2, it was known there was a high correlation among items that measure the same construct, and it indicated convergent validity. In contrast, there was a low correlation among items which measure different construct, and it showed discriminant validity. Analysis of Partial Least Square also indicated the same results. Each indicator of the dimensions of the variables had a high loading factor, as shown in Tables 3 and 4.

In addition, values of square root of average variance extracted (AVE) of all variables were above 0.5, namely quality of the instructors was 0.587, completeness of the facilities was 0.566, availability of the modules was 0.690, quality of the evaluation was 0.582, accuracy of the materials was 0.620, and quality of inputs was 1.000. Therefore, it was clear that the instruments used were valid and reliable.

3.4. Data analysis

In accordance with the objectives, the data were processed using many types of data analysis techniques, including descriptive statistics, Pearson zero-order product-moment correlation analysis techniques, partial and multiple correlations, regression analysis, and variance analysis. Descriptive statistics were used to describe the data, both the exogenous and endogenous variables. While the correlation analysis technique was used to determine the correlation coefficient between two variables, either simultaneously or partially, the regression analysis technique was used to determine the predictive power of exogenous variables on endogenous variables. Finally, the variance analysis technique was used to analyse differences in the quality of input of participants who have and have not participated in teachers’ certification programs.
| a/b  | a1  | a2  | a3  | a4  | a5  | a6  | a7  | b1  | b2  | b3  | b4  | b5  | b6  | b7  | b8  | b9  | b10 | b11 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| a1   | 1   | .62 | .56 | .47 | .49 | .52 | .16 | .19 | .16 | .18 | .11 | .20 | .22 | .17 | .21 | .19 | .15 |
| a2   | 1   | .62 | .49 | .47 | .47 | .46 | .15 | .18 | .18 | .11 | .09 | .19 | .24 | .17 | .18 | .18 | .16 |
| a3   | 1   | .58 | .50 | .42 | .46 | .11 | .17 | .14 | .11 | .10 | .14 | .19 | .14 | .18 | .14 | .16 |
| a4   | 1   | .44 | .40 | .43 | .16 | .15 | .15 | .12 | .06 | .14 | .20 | .16 | .16 | .12 | .16 |
| a5   | 1   | .55 | .37 | .05 | .07 | .08 | .02 | .04 | .09 | .12 | .09 | .16 | .08 | .17 |
| a6   | 1   | .44 | .22 | .29 | .22 | .19 | .04 | .25 | .28 | .23 | .29 | .19 | .29 |
| a7   | 1   | .14 | .19 | .11 | .08 | .05 | .15 | .09 | .17 | .17 | .12 | .15 |
| b1   | 1   | .63 | .56 | .55 | .39 | .55 | .57 | .54 | .54 | .52 | .55 |
| b2   | 1   | .69 | .62 | .41 | .63 | .63 | .58 | .55 | .50 | .57 |
| b3   | 1   | .67 | .44 | .61 | .66 | .63 | .60 | .49 | .55 |
| b4   | 1   | .38 | .55 | .54 | .55 | .53 | .48 | .46 |
| b5   | 1   | .52 | .49 | .44 | .46 | .48 | .41 |
| b6   | 1   | .78 | .71 | .70 | .61 | .67 |
| b7   | 1   | .74 | .68 | .59 | .64 |
| b8   | 1   | .65 | .63 | .66 |
| b9   | 1   | .56 | .67 |
| b10  | 1   | .67 |
| b11  | 1   |

*a = items of teacher/instructor quality construct
*b = items of material accuracy construct*
Table 3. Outer loading of training component variables

| Items                        | Quality of instructors | Accuracy of materials | Availability of modules | Completeness of facilities | Quality of evaluation |
|------------------------------|------------------------|-----------------------|-------------------------|----------------------------|-----------------------|
| q1                           | 0.795                  |                       |                         |                            |                       |
| q2                           | 0.800                  |                       |                         |                            |                       |
| q3                           | 0.782                  |                       |                         |                            |                       |
| q4                           | 0.754                  |                       |                         |                            |                       |
| q5                           | 0.741                  |                       |                         |                            |                       |
| q6                           | 0.734                  |                       |                         |                            |                       |
| q7                           | 0.755                  |                       |                         |                            |                       |
| q8                           | 0.711                  |                       |                         |                            |                       |
| q9                           | 0.676                  |                       |                         |                            |                       |
| q10                          | 0.571                  |                       |                         |                            |                       |
| b2                           | 0.674                  |                       |                         |                            |                       |
| b3                           | 0.571                  |                       |                         |                            |                       |
| b4                           | 0.883                  |                       |                         |                            |                       |
| b5                           | 0.870                  |                       |                         |                            |                       |
| b6                           | 0.898                  |                       |                         |                            |                       |
| b7                           | 0.860                  |                       |                         |                            |                       |
| b8                           | 0.898                  |                       |                         |                            |                       |
| b9                           | 0.785                  |                       |                         |                            |                       |
| b10                          | 0.872                  |                       |                         |                            |                       |
| c1                           | 0.802                  |                       |                         |                            |                       |
| c2                           | 0.787                  |                       |                         |                            |                       |
| c3                           | 0.876                  |                       |                         |                            |                       |
| c4                           | 0.853                  |                       |                         |                            |                       |
| c5                           | 0.831                  |                       |                         |                            |                       |
| c6                           | 0.695                  |                       |                         |                            |                       |
| c7                           | 0.761                  |                       |                         |                            |                       |

(Continued)
| Items | Quality of instructors | Accuracy of materials | Availability of modules | Quality of evaluation | Completeness of facilities | Quality of inputs |
|-------|------------------------|-----------------------|-------------------------|-----------------------|---------------------------|------------------|
| d3    |                        |                       |                         | 0.820                 |                           |                  |
| d4    |                        |                       |                         | 0.792                 |                           |                  |
| d5    |                        |                       |                         | 0.744                 |                           |                  |
| d6    |                        |                       |                         | 0.788                 |                           |                  |
| e1    |                        |                       |                         | 0.645                 |                           |                  |
| e2    |                        |                       |                         | 0.792                 |                           |                  |
| e3    |                        |                       |                         | 0.763                 |                           |                  |
| e4    |                        |                       |                         | 0.802                 |                           |                  |
| e5    |                        |                       |                         | 0.675                 |                           |                  |
| e6    |                        |                       |                         | 0.769                 |                           |                  |
| e7    |                        |                       |                         | 0.805                 |                           |                  |
| e8    |                        |                       |                         | 0.721                 |                           |                  |
| f1    |                        |                       |                         |                       |                           | 1.000            |
Table 4. Outer loading of teacher (trainee) competence

| Items | Planning of learning process | Implementation of learning process | Learning evaluation | Practice of development in classroom |
|-------|------------------------------|-----------------------------------|---------------------|--------------------------------------|
| a1    | 0.711                        |                                   |                     |                                      |
| a2    | 0.606                        |                                   |                     |                                      |
| a3    | 0.701                        |                                   |                     |                                      |
| a4    | 0.732                        |                                   |                     |                                      |
| a5    | 0.503                        |                                   |                     |                                      |
| a6    | 0.602                        |                                   |                     |                                      |
| a7    | 0.658                        |                                   |                     |                                      |
| a8    | 0.577                        |                                   |                     |                                      |
| a9    | 0.650                        |                                   |                     |                                      |
| a10   | 0.723                        |                                   |                     |                                      |
| a11   | 0.619                        |                                   |                     |                                      |
| a12   | 0.652                        |                                   |                     |                                      |
| a13   | 0.628                        |                                   |                     |                                      |
| a14   | 0.764                        |                                   |                     |                                      |
| a15   | 0.693                        |                                   |                     |                                      |
| a16   | 0.619                        |                                   |                     |                                      |
| a17   | 0.642                        |                                   |                     |                                      |
| a18   | 0.700                        |                                   |                     |                                      |
| a19   | 0.696                        |                                   |                     |                                      |
| a20   | 0.690                        |                                   |                     |                                      |
| a21   | 0.586                        |                                   |                     |                                      |
| a22   | 0.572                        |                                   |                     |                                      |
| a23   | 0.700                        |                                   |                     |                                      |
| b1    | 0.544                        |                                   |                     |                                      |
| b2    | 0.723                        |                                   |                     |                                      |
| b3    | 0.504                        |                                   |                     |                                      |
| b4    | 0.592                        |                                   |                     |                                      |
| b5    | 0.716                        |                                   |                     |                                      |
| b6    | 0.555                        |                                   |                     |                                      |
| b7    | 0.742                        |                                   |                     |                                      |
| b8    | 0.704                        |                                   |                     |                                      |
| b9    | 0.650                        |                                   |                     |                                      |
| b10   | 0.701                        |                                   |                     |                                      |
| b11   | 0.659                        |                                   |                     |                                      |
| b12   | 0.591                        |                                   |                     |                                      |
| b13   | 0.503                        |                                   |                     |                                      |
| b14   | 0.553                        |                                   |                     |                                      |
| b15   | 0.638                        |                                   |                     |                                      |
| b16   | 0.557                        |                                   |                     |                                      |
| b17   | 0.575                        |                                   |                     |                                      |
| b18   | 0.541                        |                                   |                     |                                      |
| b19   | 0.606                        |                                   |                     |                                      |
| b20   | 0.646                        |                                   |                     |                                      |
### Results

#### 4.1. Variables that influenced the results of gradual training of early childhood education teachers

The main aim of this research was to discover the correlation coefficient and influence of the inputs, instructors, facilities, modules, material accuracy, and training evaluations regarding the performance of early childhood education teachers. The results are presented in the following table:

| Items  | Planning of learning process | Implementation of learning process | Learning evaluation | Practice of development in classroom |
|--------|------------------------------|----------------------------------|--------------------|-------------------------------------|
| b21    |                              | 0.554                            |                    |                                     |
| c1     |                              |                                  | 0.763              |                                     |
| c2     |                              |                                  | 0.616              |                                     |
| c3     |                              |                                  | 0.775              |                                     |
| c4     |                              |                                  | 0.736              |                                     |
| c5     |                              |                                  | 0.782              |                                     |
| c6     |                              |                                  | 0.760              |                                     |
| c7     |                              |                                  | 0.708              |                                     |
| c8     |                              |                                  | 0.747              |                                     |
| c9     |                              |                                  | 0.709              |                                     |
| c10    |                              |                                  | 0.789              |                                     |
| c11    |                              |                                  | 0.585              |                                     |
| c12    |                              |                                  | 0.738              |                                     |
| d1     |                              |                                  |                    | 0.534                               |
| d2     |                              |                                  |                    | 0.532                               |
| d3     |                              |                                  |                    | 0.628                               |
| d4     |                              |                                  |                    | 0.558                               |
| d5     |                              |                                  |                    | 0.667                               |
| d6     |                              |                                  |                    | 0.552                               |
| d7     |                              |                                  |                    | 0.541                               |
| d8     |                              |                                  |                    | 0.609                               |
| d9     |                              |                                  |                    | 0.580                               |
| d10    |                              |                                  |                    | 0.466                               |
| d11    |                              |                                  |                    | 0.617                               |
| d12    |                              |                                  |                    | 0.738                               |
| d13    |                              |                                  |                    | 0.621                               |
| d14    |                              |                                  |                    | 0.736                               |
| d15    |                              |                                  |                    | 0.648                               |
| d16    |                              |                                  |                    | 0.660                               |
| d17    |                              |                                  |                    | 0.614                               |
| d18    |                              |                                  |                    | 0.470                               |
| d19    |                              |                                  |                    | 0.663                               |
| d20    |                              |                                  |                    | 0.594                               |
| d21    |                              |                                  |                    | 0.706                               |
| d22    |                              |                                  |                    | 0.637                               |
| d23    |                              |                                  |                    | 0.566                               |
| d24    |                              |                                  |                    | 0.719                               |

---

Rasyad et al., Cogent Education (2019), 6: 1702840

https://doi.org/10.1080/2331186X.2019.1702840
participants’ quality of teaching as a result of the training. Before testing the correlation among variables, the results of the descriptive analysis were presented. In accordance with the research design, the score of the instrument items was set at four levels: very good = 4, good = 3, poor = 2, and very poor = 1. To describe all data, it was necessary to group or classify the information. Data classification is conducted by determining the following: (a) the interval, by reducing the largest value with the smallest value (4–1 = 3); (b) many classes, namely four groups; (c) class length, by dividing the interval with many classes (3:4 = 0.75); and d) the classification of data from lowest to highest score with class length, namely 1–1.75 = very poor, 1.76–2, 50 = poor, 2.51–3.25 = good, and 3.26–4 = very good (Johnson & Christensen, 2014; Mertens, 2010). Based on the data analysis results, mean values and standard deviation of each variable are presented in Table 5.

According to Table 5, it can be concluded that the average scores for facilities, evaluation quality, and instructor quality are “good”; availability of modules is “very good,” but the quality of the inputs is “poor.” Most participants have not taken the certification program yet, while the results of the training were indicated by the value of the teaching quality after training was obtained at an average of 3.54, with a small standard deviation value of 0.35. Thus, based on the set criteria, the score of the training results is in a “very good” category, and a hypothesis test was then conducted.

In accordance with the aim of this research, six independent (exogenous) variables and one dependent (endogenous) variable were tested. The exogenous variables include the quality of the trainers (X1), completeness of the training facilities (X2), availability of the modules (X3), quality of the evaluation (X4), accuracy of the training materials (X5), and quality of the training input (X6). The endogenous variable is the result of the training indicated by the trainees’ teaching quality (Y). Results of the zero-order correlation between exogenous and endogenous variables are presented in Table 6.

Based on Table 6, it can be underlined that there is a significant positive zero-order correlation between the exogenous and endogenous variables. The correlation coefficients, ranked from highest to lowest, are as follows: (1) accuracy of materials, (2) quality of the instructors, (3) availability of the modules, (4) quality of the evaluations, (5) completeness of the training facilities, and (6) quality of the inputs. The regression analysis is conducted to find the simultaneous and partial correlation coefficient. The summary of the results of simultaneous regression analysis models is presented in Table 7.

According to the data presented in Table 7, it can be noted that there is a significant and simultaneous positive correlation between the exogenous variables (the accuracy of the materials, quality of the

| No | Variables                        | Mean | SD  | Criteria    |
|----|----------------------------------|------|-----|-------------|
| 1  | Quality of the instructors       | 3.23 | 0.38| Good        |
| 2  | Completeness of the facilities  | 3.18 | 0.38| Good        |
| 3  | Availability of the modules     | 3.17 | 0.41| Good        |
| 4  | Quality of the evaluation       | 3.10 | 0.39| Good        |
| 5  | Accuracy of the materials       | 3.29 | 0.57| Very good   |
| 6  | Quality of the inputs           | 1.4  | 0.68| Poor        |
| 7  | Results of the training         | 3.54 | 0.35| Very good   |
training instructors, availability of the modules, quality of the evaluations, completeness of facilities, and quality of the inputs) and the training results (the teaching quality of the trainees). Moreover, R value was 0.520, the value of p was <0.01, and the determinant value obtained was 0.270. Subsequently, it can be concluded that there is a significant positive correlation between the exogenous and endogenous variables. The most influential variable can be found by controlling the other variables. It is necessary to see the results of the partial correlation of each variable, presented in Table 8.

Based on Table 8, it can be concluded that there are three variables displaying a significant positive correlation, namely the quality of the instructors, accuracy of materials, and quality of the training inputs. From the perspective of the partial correlation coefficient, 10.1% of the training results were determined by the quality of the instructors, 34.0% was determined by the accuracy of the materials, and 18.7% depended on the quality of the input. Consequently, the main variable that determines the success of early childhood education teacher training is the accuracy of materials. In addition, the materials provided in the training have to be relevant to its implementation in schools. The inputs also determine the results of the training. High quality and well-prepared inputs will determine the results of the training. The third variable is the quality of the instructors and training process, which needs to be supported by experienced instructors. Therefore, to learn which component shows significant influences, the results of the correlation analysis of the elements contained in each variable need to be analysed.

### 4.2. Components of instructor quality on the results of gradual training of early childhood education teachers

Generally, there are seven factors that indicate the quality of the instructors—the ability to deliver the materials, use various training methods, evaluate, provide feedback, monitor tasks, communication skills, and the ability to use communication and information technology. The training results, indicated by the quality of participants’ teaching methods, relate to the endogenous variables. The obtained R value of the result of the multiple correlation analysis was 0.350, with p < 0.05. It can be concluded that there is a significant correlation between the variables of the quality of instructors and the results of the training, as presented in Figure 1.

Based on Figure 1, it is clear that, correspondingly, the elements showing the highest to lowest positive correlation are communication skills and the ability to use a variety of teaching methods, deliver materials, evaluate, monitor tasks, provide feedback, and use information technology.

Zero-order correlation is only to reveal the relationship between the two variables; it has not shown its predictive power. To see the predictive power, partial correlation and beta values need to be present in the regression analysis results. A closer look into the results of the partial correlation analysis reveals that, of the seven elements, only two components show a significant positive
Table 7. Summary of the results of the regression analysis

| Model | Sum of Squares | Df | Mean Square | R Square Change | F Change | df1 | df2 |
|-------|----------------|----|-------------|----------------|----------|-----|-----|
| Regression | 86618.753 | 6 | 14436.459 | 0.270 | 25.352 | 6 | 411 |
| Residual | 234038.634 | 411 | 569.437 | | | | |
| Total | 320657.388 | 417 | | | | | |

Change Statistics

| R | R Square | Adjusted R Square | Standard Error of Estimate | R Square Change | F Change | df1 | df2 |
|---|----------|-------------------|---------------------------|----------------|----------|-----|-----|
| 0.520 | 0.270 | 0.259 | 23.863 | 0.270 | 25.352 | 6 | 411 |
correlation—communication skills and the ability to use a variety of teaching methods. Therefore, these are the main elements influencing the results of the training.

4.3. Components of material accuracy on the results of gradual training of early childhood education teachers

In general, there are eleven factors influencing the accuracy of the materials of the early childhood education implemented in schools: 1) concept, 2) planning, 3) development, 4) evaluation, 5) children with special needs, 6) ethics and characters of young learners, 7) teaching methods, 8) young learners’ communication and guidance, 9) young learners’ health and nutrition, 10) peer teaching, and 11) independent assignments, which are associated with an endogenous variable—namely, the results of the training. It is indicated by the quality of trainees’ teaching quality. Based on the results of the analysis, the R value of 0.451 with a value of p < 0.01 was obtained. Thus, it can be concluded that there is a significant positive correlation between the eleven elements of the accuracy of training materials and the endogenous variables. The results of the zero-order correlation analysis also show a significant positive correlation between the elements concerning the accuracy of the materials variable and the results of the training, which can be indicated by the trainees’ teaching quality. The zero-order correlation coefficient is presented in Figure 2.

Table 8. Results of the analysis of partial correlation and beta coefficient between exogenous and endogenous variables

| Exogenous variables       | Endogenous variable                      | r (Partial) | Beta | P    |
|--------------------------|------------------------------------------|-------------|------|------|
| Quality of the instructors| Training Result (Trainees’ Teaching Quality) | 0.101       | 0.117| 0.041*|
| Completeness of the facilities |                                           | 0.025       | 0.027| 0.617|
| Availability of the modules |                                           | 0.074       | 0.089| 0.132|
| Quality of the evaluation |                                           | 0.066       | 0.078| 0.181|
| Accuracy of the materials |                                           | 0.340       | 0.326| 0.000*|
| Quality of the inputs    |                                           | 0.187       | 0.164| 0.000*|

*p = < 0.05

Figure 1. Coefficient correlation between the quality of instructor elements and training results.
Based on Figure 2, it can be concluded that all elements influencing the accuracy of the materials have positive correlations with the training results. According to the results of the correlation analysis, materials obtaining the highest to lowest coefficient are the teaching methods, characters, and ethics of young learners, young learners’ health and nutrition, planning, young learners’ communication, as well as guidance, development, evaluation, independent assignments, peer teaching, and children with special needs. In contrast, based on the results of the partial correlation value, the teaching methods of early childhood education have a significantly positive correlation. Consequently, the materials for early childhood education should be focused on during training.

4.4. Influence of the input quality on training results of early childhood education teachers

For the quality of the input apparent from the initial ability of tiered training participants, some teachers were already equipped with basic skills, indicated by their certificates; others still lacked the basic ability to teach well and did not have a certificate. The study results showed that the participants’ input affected the training results. Teachers with certificates displayed better teaching skills compared to those without certifications. Furthermore, there is a positive correlation and predictive power to the quality of the participants’ input on the training results. The better the input, the higher the training results achieved. The results of the variance analysis also showed significant differences, as presented in Tables 9 and 10.

Table 9 presents the average score of non-certified teachers, which was 278.49, while the certified teachers were 291.11. Therefore, the certified teachers obtained a higher result than the non-certified teachers, with a score difference of 12.22. The results of the variance analysis presented in Table 10 also show an F value of 20.745, with p < 0.000. Thus, it can be concluded that the quality of the input significantly influences the training results. Participants with basic skills display better results and teaching capabilities. In sum, the input factors determine the results of gradual training.

5. Discussion

According to the results of the study, it is clear that gradual training sessions to improve the competency of early childhood education teachers were implemented quite well, based on the
instructor, completeness of the facilities, training modules, and quality of the evaluations. Although the training showed excellent results, there was a disadvantage—especially with input. Participants had various basic competency levels, and most of them were not experienced. The results of this study align with Ganji, Ketabi, and Shahnazari (2018) study. They compared the English teacher of the training course and certificate in teaching English to adults, in which the quality of training is observed from several different aspects, namely the objectives, candidate selection, trainers, syllabus, the participants’ involvement, feedback, and evaluation. Based on the input aspect, the English teacher for the training course is less carefully selected, which also affects the results.

Moreover, the results of the data analysis show that there is a significantly positive correlation between the involvement of early childhood education teachers participating in basic level training and the quality of their teaching. Teachers who have participated in the training show better teaching skills. In other words, the basic level of this training gives positive effects on the quality of the teachers. The more they participate in the training, the higher the quality of teaching they achieve.

Of all the training aspects, there is a simultaneously positive correlation among the quality of the instructors, completeness of the facilities, availability of the modules, quality of the evaluations, accuracy of the materials, and quality of training inputs, as indicated by the quality of their teaching. In other words, there is a significantly positive correlation between six exogenous and endogenous variables, specifically the quality of teaching. Moreover, those six variables contribute to the training results. The better the instructors, facilities, modules, evaluations, materials, and inputs, the higher the results of the training will be.

The results of this research support the previous study by Abdullah et al. (2009), which showed that teacher training influences teachers’ productivity. It is also in line with the results of the research performed by Wiyono and Triwiyanto (2018), which presented that there is a positive correlation between activities and teachers’ working group meetings with the professionalism of teachers in carrying out assignments. Some activities in the teachers’ working group meetings include workshops, training activities (through conveying the materials), discussions, and teaching demonstrations. Moreover, the results of this study are also in accordance with the results of Odalen et al.’s study (2018), which revealed that there have been significant effects of pedagogical training at six Swedish universities on teachers’ centring, confidence, satisfaction, and pedagogical skills, especially on teachers who have had 1 to 3 years of teaching experience. Another research

### Table 9. Average score of the training results of certified and non-certified teachers

| Number | Teachers          | N  | Mean   | Standard deviation |
|--------|-------------------|----|--------|--------------------|
|        |                   |    | Raw score | Scale 1–4 | Raw score | Scale 1–4 |
| 1      | Non-certified Teachers | 270 | 278.49 | 3.48 | 27.889 | 0.349 |
| 2      | Certified Teachers  | 148 | 291.11 | 3.64 | 25.582 | 0.319 |

### Table 10. Analysis result of the differences in teacher training results of certified and non-certified teachers

| Variance          | Sum of squares | Df  | Mean square | F       | Sig. |
|-------------------|----------------|-----|-------------|---------|------|
| Between Groups    | 15,230.855     | 1   | 15,230.855  | 20.745  | 0.000|
| Within Groups     | 305,426.532    | 416 | 734,198     |         |      |
| Total             | 320,657.388    | 417 |             |         |      |

Rasyad et al., Cogent Education (2019), 6: 1702840
https://doi.org/10.1080/2331186X.2019.1702840
that supported this study was by Beardsworth and Lee (2004), who showed that the teachers involved in the training program have become more reflective of their performance and attitude. Furthermore, the training program has influenced the skills and personalities of the teachers, prompting them to be more innovative and creative in conducting new teaching methods. Hence, the results of this study support the results of the previous research.

Of six variables tested, three provide a significant influence on the results of the training, namely the accuracy of the materials, quality of the instructors, and quality of the input. The significance of the materials presented in the training with the requirements needed in schools is the main variable that influences the training results. The more appropriate the training materials, the higher the contribution they give to improving teaching quality.

The results of this research are in line with several other studies. The results of El Hajjar and Alkhanaizl’s research (2018) also showed that the content of the training is the main factor determining the effectiveness of the training. The results of Askers and Kocar’s study (2015) showed that pedagogical training programs are needed for lecturers, especially for those who have low educational qualifications, i.e., those who lack a master’s degree. The research by Hoekstra and Newton (2017) also presented that the main material domain needing to be emphasized in teacher professional development is pedagogy related to the objectives, scopes, and sequence of the students’ learning materials. This is followed by pedagogy related to teaching practice, new knowledge, and finally their participation in bigger organizations. Furthermore, the accuracy of the materials according to the participants’ needs is necessary for successful training programs (Uzun, 2016). On the other hand, the results of Harris, Busher, & Wise (2001) research showed that effective training for a school leader needs to emphasize activities, which are integrated with the school programs, and support the pedagogy as well as the quality of teaching and learning. Therefore, the results of training, especially the quality of teachers, are determined by the accuracy of the materials.

The second variable that shows a significant effect on training results is the quality of the instructors. The more experienced the instructors who train the teachers are, the better the results. The results of this study are in accordance with Kumlukaite and Ciarniene’s research, which shows that training programs primarily consist of face-to-face training or development courses. Some training programs are based on information and communication technology, and while they are efficient, results show they have been less effective. Unfortunately, most teachers do not apply the new knowledge they have obtained during the training into their instruction. Although teachers have a positive response to the information and communication technology during the training, few of them have actually implemented it in the classroom (Bose, 2004; Sulaimani, Sarhandi, & Buledi, 2017). On the other hand, Bostanci and cavusoglu (2018) revealed that writing skills are improved using a blended learning approach over a genre process approach, but it must be integrated into the meetings. Thus, the quality of the instructors is greatly needed to achieve maximum results.

The third variable that significantly influences the results of the training is the quality of the input. The better competency the trainees have, the higher the training results. The results of this research support the theory and results of the research on learning, stating that students are the main component in the teaching and learning process. The findings of this study are also in accordance with the research results of Ngure and Juma (2018), which shows that one of the variables with a strong influence on training outcomes is the characteristics of trainees. In addition, other studies have shown that students’ potential and learning motivation are the main factors that determine students’ achievement (Martens, Gulikers, & Bastiaens, 2004; Rehman & Haider, 2014; Tella, 2007). Consequently, the results of this study support the theory and results of the previous studies that presented input factors as the main components determining the output or learning outcomes.
6. Conclusions
The results of this research showed that the gradual training for early childhood education teachers influences the quality of teaching. Thus, the higher the teachers’ participation is, the better the quality of teaching they will have. Simultaneously, six variables were also found to affect the results of the training, namely the quality of the instructors, the completeness of the facilities, the availability of the modules, the quality of the evaluation, and the accuracy of the materials. Improving the quality of these exogenous variables increases the results of the training, as measured by the quality of their teaching.

The results of the inferential statistical analysis show that, of the six exogenous variables, only three significantly influence the training results, specifically the accuracy of the materials, quality of the instructors, and quality of training inputs. Hence, to be able to achieve effective results, it is necessary to prepare those three components well. Of the training components discussed in this research, results show that the accuracy of the materials, quality of the instructors, and quality of training input are the main factors that determine the success of the training results. Therefore, an effective training program has to be reinforced by qualified instructors, suitable materials supporting the participants’ needs, and the participants’ input, showing good competency and motivation.

In a more thorough analysis, each variable consists of various elements. For example, the most dominant element in the quality of the instructors is the ability to use a variety of teaching methods and communication skills. Regarding material relevance, the most dominant element is the method of early childhood education teaching, input concerns the participants’ basic abilities prior to and their preparedness to take part in the training. The implication is that those elements are the main aspects needing consideration when choosing the instructors, materials, and trainees. Consequently, the training objectives and results will be achieved effectively.

Overall, the results of this study will be useful for researchers wishing to study further, especially for developing the learning theory in the in-service education program for teachers. The findings can also be followed up on to obtain a comprehensive conclusion. Then, the problems studied need to be more thoroughly analysed based on context, process, output, and outcome using mixed models and mixed-methods approaches. Thus, further study may support these findings to better develop general and fundamental theories.

Acknowledgements
Authors would like to acknowledge the support of the Directorate for Early Childhood Education and Community Education Teachers and Education Personnel Development, and Faculty of Education Universitas Negeri Malang.

Disclosure statement
There is no potential conflict of interest in this research.

Citation information
Cite this article as: The determinant factors that influence results of gradual training of early childhood education teachers based on the program evaluation in Indonesia, Ach. Rasyad, Bambang Budi Wiyono, Zulkarnain & Sucipto, Cogent Education (2019), 6: 1702840.

References
Abdullah, A. G. B., Samupwa, A. M., & Alzaidiyeen, N. J. (2009). The effects of teacher training programme on teachers’ productivity in Caprivi Region, Namibia. International Journal of African Studies, 2(1), 14–21. Retrieved from https://www.yumpu.com/en/document/view/3892044/the-effects-of-teacher-training-programme-on-eurojournals

Asker, K., & Kocar, S. (2015). Teaching and Pedagogical Training of University teaching staff-practice and opinions under Slovenian higher education legislation. Education Inquiry, 6(2), 159–175. doi:10.3402/ediui.v6.25591
Azar, A. (2010). In-service and pre-service secondary science teachers’ self-efficacy beliefs about science teaching. Educational Research and Reviews, 5(4), 175–188. https://eric.ed.gov/?id=EJ887336

Beardsworth, R., & Lee, M. (2004). Developing training schools: An evaluation of the initiative. Journal of In-Service Education, 30(3), 361–369. doi:10.1080/1367480400200331

Bose, K. (2004). Computer training programme for primary school teachers in teacher training institutions of the Southern Region of Botswana. Research in Post-Compulsory Education, 9(3), 401–415. doi:10.1080/13596740400200186

Bostanci, H. B., & Cavusoglu, C. (2018). Pen-and paper or online? An academic writing course to teacher-trainees. Cogent Education, 5, 21. https://www.tandfonline.com/doi/full/10.1080/2331186X.2018.1482606

El Hajjar, S. T., & Alkhanaizi, M. S. (2018, April-June). Exploring the factors that affect employee training effectiveness: A case study in Bahrain. Sage Open, 1–12. doi:10.1177/2158244018873033

Ganj, M., Ketabi, S., & Shahnazari, M. (2018). Comparing local and international English teacher training courses: Lessons learned. Cogent Education, 5, 1–16. https://www.tandfonline.com/doi/abs/10.1080/2331186X.2018.1507174

General Inspectorate of the Ministry of Education and Culture. (2019). Itjen Kemendikbud. Jakarta: Ministry of Education and Culture. https://itjen.kemdikbud.go.id/public/home

Harris, A., Busher, H., & Wise, C. (2001). Effective training for subject leaders. Journal of In-Service Education, 27(1), 83–94. doi:10.1080/13674804000200139

Hoekstra, A., Kuntz, J., & Newton, P. (2017). Professional learning of instructors in vocational and professional education. Professional Development in Education, 44(2), 237–253. doi:10.1080/19415257.2017.1280523

Institut, L., Darling- Hammond, L., Hyler, M., & Gardner, M. (2017). Effective teacher professional development (pp. 76). Palo Alto, CA: Learning Policy Institute. https://learningpolicyinstitute.org/product/teacher-prof-dev

Johnson, B., & Christensen, L. (2014). Educational research, quantitative, qualitative, and mixed approach. Thousand Oaks, California: Sage Publication, Inc. https://itsmisalunny.files.wordpress.com/2017/07/educational-research_quantitativeresearch_r-burke-johnson.pdf

Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). Evaluating training programs: The four levels. San Francisco: Berrett-Koehler Publisher, Inc. https://www.bkconnection.com/static/Evaluating_Training_Programs_EXPERPT.pdf

Martens, R. L., Gulikers, J., & Bastiaens, T. (2004). The impact of intrinsic interest on learning in authentic computer task. Journal of Computer Assisted Learning, 20, 1–9. doi:10.1111/j.1365-2729.2004.00096.x

McMeeking, L. B. S., Orsi, R., & Cobb, R. B. (2012). Effects of a teacher professional development program on the mathematics achievement of middle school students. Journal for Research in Mathematics Education, 43(2), 159–182. doi:10.5951/jresmathedu.43.2.0159

Mertens, D. M. (2010). Research and evaluation in education and psychology: integrating diversity with quantitative, qualitative, and mixed methods. Los Angeles: Sage Publications. https://searchworks.stanford.edu/view/8300552

Ministry of Education and Culture. (2014). Regulation of the Minister of education and culture of Indonesia number 137 of 2014 about National standard of early childhood education. Jakarta: Author. https://luk.staff.ugm.ac.id/atu(bsnp/Permendikbud137-2014StondarNasionalPAUD.pdf

Niel, R. (1986). Current models and approaches to in-service teacher education. British Journal of In-Service Education, 12(2), 58–67. doi:10.1080/0305763860120202

Nghen, H. M., & Juma, D. (2018). Factors influencing management training effectiveness in commercial banks in Kenya: A case of co-operative Bank of Kenya, Nairobi County. The Strategic Journal of Business & Change Management, 5(2), 1387–1414. https://pdfs.semanticscholar.org/a82e/b31a34e5422cad828342e75a77990db7a232.pdf

Odalen, J., Brommeson, D., Erlingsson, G. O., Schaffer, J. K., & Fogelgren, M. (2016). Teaching University Teachers to become better teachers: The effects of pedagogical training courses at six Swedish Universities. Higher Education Research & Development, 38(2), 339–353. doi:10.1080/07294360.2018.1512955

Rehman, A., & Haider, K. (2014). The impact of motivation on learning of secondary school students in Karachi, An analytical study. Educational Research International, 2(1), 139–147. http://paper.researchbib.com/view/paper/11039

Sabri, K. S. (2006). In-service teacher training programmes: The case of Palestine. British Journal of In-Service Education, 23(1), 113–118. doi:10.1080/1367480400200006

Sahbaz, U. (2011). The effectiveness of in-service training for school counselors on the inclusion of student with disabilities. Educational Research and Reviews, 6(8), 580–585. https://academicjournals.org/journal/ERR/article-abstract/68564c6381

Sherman, J., Rasmussen, C., & Boydala, L. (2008). The impact of teacher factors on achievement and behavioural outcomes of children with attention deficit/hyperactivity disorder (ADHD): A review of the literature. Educational Research, 50(4), 347–360. doi:10.1080/00131880802499803

Sulaimani, A. O., Sarhandi, P. S. A., & Buledi, M. H. (2017). The effectiveness of in-house professional development training on teachers’ pedagogy: An evaluative study. Cogent Education, 4, 1–22. doi:10.1080/2331186X.2017.1355646

Tella, A. (2007). The impact of motivation on student’s academic achievement and learning outcomes in mathematics among secondary school students in Nigeria. Eurasia Journal of Mathematical, Science & Technology Education, 3(2), 149–156. doi:10.12973/ejmste/75390

Thornton, M. (2007). Mean, pre-service training and the implications for continuing professional development. Journal of In-Service Education, 27(3), 477–490. doi:10.1080/13674804002001892

Trulft, D. L. (2011). The effect of training and development on employee attitude as it relates to training and work proficiency. Sage Open, 1, 1–3. doi:10.1177/21582411433338

Uzun, L. (2016). Evaluation of the latest English language teacher training programme in Turkey: Teacher trainees’ perspective. Cogent Education, 3, 1–16. doi:10.1080/2331186X.2016.1167115

Wyino, B. B. (2014). Improvement of principals’ transformational leadership competency through implementation of action learning based training model. Education International Seminar, 413–419. http://repository.unp.ac.id/11610/1/changing%20character%20through%20a.pdf

Wyino, B. B. (2018). The effect of self-evaluation on the principals’ transformational leadership, teachers’ work motivation, teamwork effectiveness, and school
improvement. *International Journal of Leadership in Education*, 21(6), 705–725. doi:10.1080/13603124.2017.1318960

Wiyono, B. B., Kusmintardjo, & Imron, A. (2015). Effect of Humanistic Principles-Based Active-Collaborative Supervision on Teachers’ Competence. *Acta Scientiae Et Intellectus*, 1(3), 19–26. http://www.actaint.com/issue.php?go=october-2015

Wiyono, B. B., Kusmintardjo, & Sucipto. (2017). The effective supervision techniques that influence teacher’s performance. *Man in India*, 97(24), 25–33. http://serialsjournals.com/abstract/33975_3.pdf

Wiyono, B. B., & Triwiyanto, T. (2018). The effective development techniques in teacher working group meeting to improve teacher professionalism. *International Journal of Engineering and Technology*, 7(3.25), 295–298. https://www.sciencepubco.com/index.php/ijet/article/view/17585

Yaqoot, E. S. I., Noor, W. S. W. M., & Isa, M. F. M. (2017). Factors influencing training effectiveness: Evidence from public sector in Bahrain. *Acta Universitatis Danubius. Economica*, 13(2), 31–44. http://journals.univ-danubius.ro/index.php/oeconomica/article/view/3991/3977