A Mentoring-Coaching to Improve Teacher Pedagogic Competence: An Action Research

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Abstract. The purpose of this research is to boost teacher pedagogic competence using a mentoring-coaching approach. Three SMPK Immanuel Pontianak teachers participated in the two cycles of action research conducted in the year academic of 2014-2015. This recent research inspects the impact of principal's approaches on teacher pedagogic competence changes and its hindering factors. The principal's approaches toward teachers were decided using a Glickman's diagram, and teacher performance was measured using a rubric to measure their teaching performance. The collected data were analyzed qualitatively and quantitatively. The findings indicated that teacher pedagogic was able to rise using this combined technique, although not all subjects were successful in being improved. The other significant findings were (1) the principal's consistency in applying chosen approach, (2) teachers' ability to identify their need for improvement. This recent study's limitations were the minimal number of participants, teacher motivation as the overlooked factor, and the supervisor's ability to consistently apply the chosen approaches.

Keywords**:** Mentoring; Coaching; Teacher; Pedagogic Competence.

I. Introduction

A learning process in a classroom is positively affected by the teachers' competence (Lonergan et al., 2012). During a single teaching process, teachers must consider several factors, such as student emotional well-being, the taught curriculum, the information intake, and its assessments. To achieve the learning objectives in a meeting, teachers must internalize specific competencies (Lisnawati, 2018), specifically pedagogic. Thorough consideration will weigh teacher justification in assessing student learning in the classroom. Like teachers, students also get exhausted with the daunting tasks, distractions, technology, and abundant information from social media that overwhelms them in preparing for their future lives (Scott, 2015). Thus, teachers must own a variety of teaching techniques to ensure students get engaged in every lesson.

Overcoming educational challenges occurred will not be an easy task for teachers. Principal support and school policy will allow teachers to focus on their teaching while assuring the learning process runs in a well-developed design. Focusing on student progress demands teachers with high pedagogic competence, so they will not only focus on content delivery (Leonard, 2016). School leaders play a huge role in designing teacher professional development programs to expose them to the 21st century teaching methods, as they are the critical factor of schools (Drysdale & Gurr, 2011).

One method to support teachers is mentoring and coaching (MC), which facilitates a partnership culture between principals and teachers; and is believed to lead a school to have a higher level of teacher performance (Parsloe & Leedham, 2009). The process of MC will involve multi-perspective views in observing the learning process in detail, identifying any misfit conception, and correcting them. Therefore, the learning process could continuously be upgraded and serve students better.

Theoretical Framework

Separately, each mentoring and coaching serve a similar purpose to an individual's growth by having a close relationship (Klages et al., 2019; Tonna et al., 2017). Mentoring is a process of building a long-term relationship between a professional mentor, who has experience in the area of expertise, and the mentee (Chu, 2014). Mentor and mentee involved speculated that mentoring and goal setting in higher education is crucially important (Carmel & Paul, 2015). Coaching is a process of upgrading professionalism quality (Ali et al., 2018), although the coach has no expertise in the coachee area. Coaching focuses more on goal setting and short-term achievements rather than approaches for professional improvement. Based on these reviews, combining both techniques will suffice the teacher professional development program.

Mentoring-coaching (MC) was chosen because it improves teacher performance and confidence, values them

as an educator, and unleashed their potential by encouraging them (Smith & Lynch, 2014; Hobson et al., 2015; Carmel & Paul, 2015). MC could also increase ones' self-efficacy (Rhodes, 2013) and the capability in making a decision (Duncan & Stock, 2010); it also supports teachers with a meaningful experience to connect theories and practice in their professional work (Gray, 2018); ensures trustworthy relationship and upgrade professionalism, either for beginner teacher or experienced teachers (Jones, 2015).
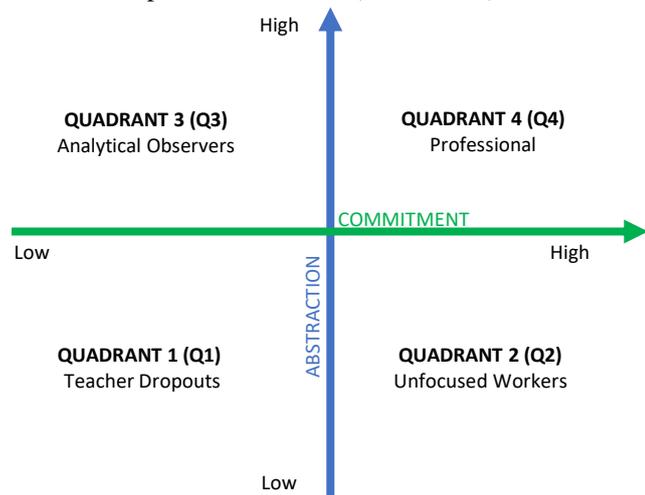

Fig. 1 The Quadrant of Developmental Level

TABLE I
APPROACHES AND EXPECTED OUTCOMES

Quad-rant	Interpersonal approach	Meeting Outcome
1	The directive-control	The supervisor sets success criteria for the teacher (standardizing) and asks teachers to figure out a method to acquire them in the classroom (reinforcing).
2	The directive-informational	Teachers will get a limited suggestion (directing) and the expected outcomes to achieve (standardizing).
3	Collaborative	Both supervisor and teacher design the mutual plan. The supervisor will contribute to acquiring ideas (presenting), list the possible solutions (problem-solving), and analyze the options (negotiating).
4	Non-directive	The teacher self-consciously plans the next actions. The supervisor will listen to her opinion and the options they proposed, then clarify and reflect on the consequences.

A combination of MC found in this recent research was taken from Glickman's theory (Glickman, 2002; Glickman et al., 2013). Figure 1 shows the four different quadrants, categorizing teachers based on their development levels:
1) Abstract; teachers' knowledge of content and its pre-requisites, lesson delivery and engagement (Table IV).
2) Commitment; represents teachers' knowledge about students, being flexible and responsive to the class (Table III).

Table I describes the interpersonal approaches used according to the specific quadrant to gain certain outcomes. These behaviors will help a supervisor open discussion, encourage them to express themselves, sharpen teachers' perspectives, and lead them to think about a plan to improve their competencies (Glickman, 2002).

Along with the approaches that available, Glickman defined the structure of clinical supervision as follows (Glickman et al., 2013) :
1) Pre-conference with teachers.
An instrument of observation and the plan of observation will be shared and discussed.
2) Observation of classroom instruction.
An observer will collect evidence during the learning process in the classroom. Observer assumptions must not interfere with the evidence collected because it will separate findings from assumptions.
3) Analyzing and interpreting the observation and determining conference approach.
In this stage, the collected findings will be analyzed and used to decide the teacher's position in the quadrant. Then, the supervisor selects a suitable interpersonal approach. If possible, teachers can have a copy of the result of the observations and ask them to interpret the findings.
4) Post-conference with teachers.
This meeting will be held after reflection with an improvement plan as its primary outcome. The discussion should be started by exposing interpretation from both sides. Using the appropriate behaviors, the supervisor and teacher develop a plan for future improvement. It could be mutually decided together or suggested by one of the sides, either supervisor or teacher. Consequently, the supervisor will assist teachers who need improvement in certain aspects, e.g., training/workshop, peer-teaching, reading assignments on related theories.
5) Critique of previous four steps.
The final stage reviews the four previous stages about the instruments or procedures used, valuable insights to note down, or any changes required for the next supervision. The session should be held a few days after the post-conference meeting, and it needs not be a formal session.
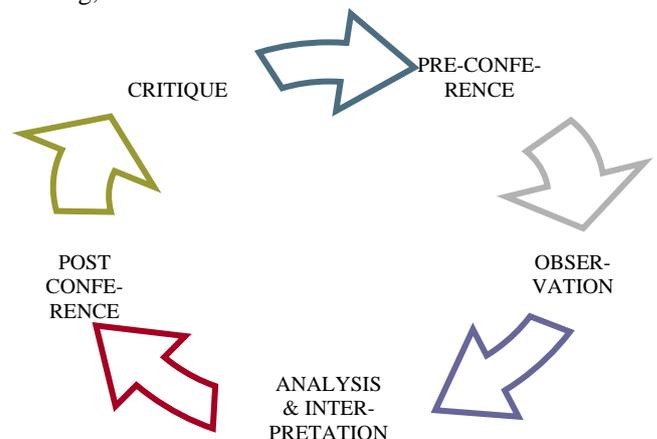

Fig. 2 The Clinical Supervision Cycle

This theoretical framework applied the approaches of Developmental Supervision into the 5-stage structure of Clinical Supervision as the mentoring and coaching technique in improving teacher pedagogic competence in SMPK Immanuel Pontianak. The following questions directed the study: (1) How will these chosen approaches improve the pedagogic competence? (2) What other factors affect the process of mentoring and coaching?

II. METHODS

This study was action research that aimed to investigate whether the use of approaches of developmental supervision in a 5-stage clinical supervision structure for teacher mentoring and coaching could improve their pedagogic competence in SMPK Immanuel Pontianak.

Mathematics, Science, and English were the most challenging subjects in SMPK Immanuel. Based on one of the monthly student surveys, Science was identified as the most challenging subject (Table II). Student achievement in the Science class in 2014-2015 was under the minimum requirement, which means less than 70% of the class passed Science. Thus, this research conducted an in-depth study of three science teachers: subject X, Y, and Z.

TABLE II
THE NUMBER OF STUDENTS CHOSE THEIR MOST CHALLENGING SUBJECT.

Subjects	Math	Science	English	Total Students
Grade 7	36	58	6	100
Grade 8	30	52	17	99
Grade 9	35	64	2	101

One of the causes of low student achievement is students' incapability to follow the curriculum demand (Al-zoubi & Younes, 2015). Another study revealed that student achievement and the instruction given were significantly affected by teacher quality, including working experience, education background, beliefs and motivations, content knowledge, pedagogical content knowledge, and general pedagogical knowledge (Sigrid Blömeke et al., 2016). Hattie's research buttress the previous statement that teacher ability in giving qualified feedback was one of the most influential on student achievement (Hattie, 2009). Teachers' ability to give impactful feedback indicates a robust pedagogic competence (Faidal et al., 2020). Therefore, this study was designed to answer whether the MC technique can upgrade teacher competence quality to provide better instruction for students.

The data collection was executed using the following instruments: (1) classroom observation rubrics, which consists of two categories (Abstraction and Commitment) with eight aspects for each category as shown in table III and IV; (2) in-depth interview sessions with three subjects; (3) supervisor's anecdotal record to record teachers' responses when certain behaviors were applied during the meeting session; and

The rubric used to assess teacher performance was developed by comparing and combining the common aspects from Regulation of the Minister of National Education (Permendiknas) No. 16/2007 and the Danielson Framework for Teaching (Danielson, 2013). The reason to combine these two evaluation instruments was to gain contextual success criteria for teaching. Danielson provides teacher assessment in the broader lens, while the Ministerial Regulation is currently used to assess Indonesian teacher performance. The score conversions were used to plot teachers' positions in the quadrant and measure their progress throughout the research. It is categorized as 'LOW' level if the score conversion is between 0.00-0.50, while the 'HIGH' level is from 0.51-1.00. Both categories will use this grading.

III. RESULT AND DISCUSSION

This supervision was held in 2 cycles of clinical supervision during this research. Each cycle spent six weeks to complete the whole five stages. Appropriate approaches were implemented according to the subjects' position in the quadrant.

A. Cycle 1

The first stage was Pre-Conference in which declared the purpose of this action. Both subjects must grasp the complete supervision process, which might need a long term. Another point to discuss was the assessing rubric for observation. An in-depth explanation about the observation instrument was conducted to assure both subjects understand the expectation.

The two next stages were classroom observation and analysis-interpretation. The objects to observe were success criteria in action, the quality of instruction, and teachers' content knowledge will be the primary objects. It was crucial to remove assumptions while writing down all the findings (descriptions and interpretation). These findings were analyzed and used to set the initial data.

The preliminary data (Table III and IV) were collected to define teachers' position in quadrant (Fig. 2) and their approaches during the interaction. The chosen approaches for each participant described as follow:
- Subject X: Collaborative approach
  high Abstract/Expertise and low Commitment.
- Subject Y: Directive-Informational
  low Abstract/Expertise and high Commitment.
- Subject Z: Directive-Control
  low in both development levels.

In the Post Conference stage, the supervisor shared the observation result, ask about their perspectives, interpretations, feeling, and self-reflection for the last observation. In every session, it is vital for building trust in every interaction. Dealing with subject X, the supervisor asked if there is any aspect to improve or possible solutions (Collaborative approach). On the other hand, Subject Y was given several options to be applied (Directive-Informational). Lastly, with Subject Z, the supervisor identified the cause of low performance and brought some solutions to try on.

At the end of the session, Subject X proposed focusing on the aspects of her Commitment, specifically the knowledge about students, and log in to her journal (self-reflection);

Subject X wrote her chosen reaction as her real action plan. As for Subject Y, three options were offered: designing effective lesson plans, questioning, and discussion skill, or assessment. Her low Abraction score produced those provided options to apply. Eventually, she chose to re-design lesson plans and practice them out by peer teaching. Subject Z had an equally low point in both development levels. Subject Z was found to have an issue with her content mastery. Consequently, she could not elaborate with more straightforward terms and failed to motivate her students. The solutions that she had to try were reading more sources related to the current topic, creating a presentation slide, and practicing teaching with a peer.

TABLE III
PRELIMINARY COMMITMENT SCORE

Aspect	X	Y	Z
Knowledge of Student (**K1**)	2	1	1
Classroom Management (**K2**)	2	2	1
Knowledge of Student Achievement (**K3**)	1	2	1
Effective Feedback (**K4**)	2	3	1
Flexible and Responsive (**K5**)	3	3	3
Handling Student Behavior (**K6**)	2	3	2
Student Motivation (**K7**)	2	2	2
Self-Reflection (**K8**)	1	1	1
Points Collected	**15**	**17**	**12**
Score Conversion	**0.47**	**0.53**	**0.38**

TABLE IV
PRELIMINARY ABSTRACTION/EXPERTISE SCORE

Aspect	X	Y	Z
Content & Pedagogical Knowledge (**A1**)	2	1	2
Lesson Plan Design (**A2**)	1	1	1
Learning Objective (**A3**)	1	1	1
Effective Instruction (**A4**)	2	1	1
Questioning and Discussion Skill (**A5**)	3	1	1
Model Learning (**A6**)	3	2	1
Conclusion and Confirmation (**A7**)	2	2	1
Assessment (**A8**)	3	1	3
Points Collected	**17**	**10**	**11**
Score Conversion	**0.53**	**0.31**	**0.34**

*The total point is 32.

These plans were implemented in the classroom until the end of March (4 weeks). Before this first cycle ended, there were five recorded scores for classroom observation to measure each subject's progress. This cycle was closed with a critique session.

B. Cycle 2

The pre-conference of this cycle was combined with a critique session in cycle 1. We reflected on our past cycle by analyzing the researcher's approach (collaborative, directive-informational, and directive-control), the effectiveness of the structure of clinical supervision, and the treatment given to help them improve their skills. All subjects claimed that they enjoyed the supervision, felt appreciated, and some of their issues, such as student motivation or formative assessment, were eliminated. They also affirmed that a leader presence brought massive support for them. Furthermore, the approaches were found useful for building a positive relationship and subjects' confidence. This discussion

exposed findings that the MC technique led to the increasing teacher pedagogic improvement (Table V). Therefore, in the second cycle, there was no alteration in approaches and structure. The focus of observation in this cycle was to maintain the progress they had made.

TABLE V
SUBJECTS' COMMITMENT RESULT

Subject	X		Y		Z	
Aspect	P	AC	P	AC	P	AC
K1	0.50	0.75	0.25	0.50	0.25	0.25
K2	0.50	0.50	0.50	0.50	0.25	0.25
K3	0.25	0.50	0.50	0.50	0.25	0.75
K4	0.50	0.50	0.75	0.75	0.25	0.25
K5	0.75	0.50	0.75	0.75	0.75	0.50
K6	0.50	0.50	0.75	0.50	0.50	0.50
K7	0.50	0.50	0.50	0.50	0.50	0.25
K8	0.25	0.50	0.25	0.50	0.25	0.25
AV	**0.47**	**0.53**	**0.53**	**0.56**	**0.38**	**0.38**

TABLE VI
SUBJECTS' ABSTRACTION/EXPERTISE RESULT

Subject	X		Y		Z	
Aspect	P	AC	P	AC	P	AC
A1	0.50	0.50	0.25	0.50	0.50	0.25
A2	0.25	0.50	0.25	0.50	0.25	0.25
A3	0.25	0.75	0.25	0.50	0.25	0.25
A4	0.50	0.50	0.25	0.50	0.25	0.25
A5	0.75	0.75	0.25	0.25	0.25	0.50
A6	0.75	0.75	0.50	0.25	0.25	0.50
A7	0.50	0.75	0.50	0.50	0.25	0.50
A8	0.75	0.50	0.25	0.50	0.75	0.50
AV	**0.53**	**0.63**	**0.31**	**0.44**	**0.34**	**0.38**

P: Preliminary score
AC: Score after two cycles

Minor corrections were discussed during the post-conference session. Subject X remained focused on improving students' motivation, triggered by warm interaction and active engagement. At the Abstraction level, Subject X's instructions remain difficult for students to understand. Subject Y still lingered on the abstract category. These were the actions that she chose to improve her Abstraction, e.g., continue the workshop session on lesson plan design and peer teaching. She also had to explore her questioning skill and the variety of learning models. These two aspects in her abstract had become our main concern. Lastly, for Subject Z, a self-reflection was needed for her to grow professionally. She tended to be idle and preferred waiting for instructions. She prevailed a positive attitude by doing the given solutions, although those were not the outstanding ones.

Finally, in the last session, we re-evaluated the whole process of cycle 2 and analyzed the approaches chosen from Developmental Supervision (collaborative, directive-informational, and directive-control), the structure of clinical supervision, and the given solutions. The increasing scores accentuated the focus of this cycle 2.
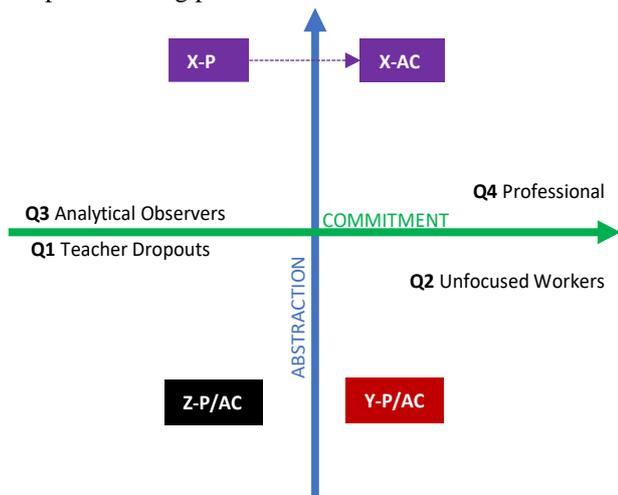
The final scores were plotted into the quadrant to obtain teachers' new position, if any. Subject X and Y raised their average scores in Commitment level, except Subject Z, who

showed little progress. In terms of quadrant-shifting, only Subject X moved from Q3 to Q4. While Subject Y showed score increment, she did not change her initial quadrant. Lastly, neither the score nor quadrant of Subject Z had changed.

Subject X initially ignored her students' progress following her explanation (K3) and barely went through any self-reflection session (K8). With a plan of her own choice, she managed to increase her habit of knowing her audience and deal with any misconceptions. She could focus more on her scenarios if there is any out-of-the-topic question. Her Abstraction also experienced increments in a few aspects, even though she did not target it.

Subject Y's plan to put her effort into planning teaching scenarios helped her, although she struggled with the content. However, after her effort, she gained some rising numbers, namely A1, A2, A3, A4, A6, and A8. A suggestion for her was to enrich her knowledge about the content, as she had less issue with her Commitment. It meant that she had a passion for helping her students and getting to know their difficulties.

Subject Z seemed reluctant to address herself as a teacher. Subject Z is an intelligent person, as her logic sequentially answered several irrelevant questions from this research. Unfortunately, she wants to pursue her chance of being a civil servant, and this current job was just a stepping-stone to her goal. No further suggestion for Subject Z's development unless a life motivation reminds her to be responsible for her recent decision. Her scores could not even be analyzed, as they were randomly earned. Her reaction toward the chosen plan, which demanded her to read more content and conduct peer teaching, was meaningless. Her lesson plan did not change much from the template; her presentations were mostly a copy and paste product, and she failed in almost all of the peer teaching practices.

In conclusion, referring to Subject X and Y, it could be claimed that this MC technique can surely improve teacher pedagogic competence. Although, some factors might affect the progress, such as personal motivation

IV. CONCLUSION

This study contributed to the existing findings of how MC successfully increases professional competence. This combination of Developmental (the approaches) and Clinical (the structure) supervision improved teacher pedagogic competence. The approaches helped teachers identify and interpret the issue in their classroom and then get possible solutions during the post-conference. The chosen behaviors abolished the distance between leaders and teachers, build confidence within themselves in finding solutions and admitting their mistakes, and raising the sense of belonging to the classroom. The structure allowed the supervisor to observe, analyzed, and discussed the issues with subjects. Providing treatments also seemed right on target. The training or workshop held in our school was only decided by the Human Resource, without considering the teachers' need. Various topics could be given and in a varied time frame.

Besides the effective supervision methods, this research's success was also affected by other factors—first, the leaders/supervisor's consistency in applying the chosen approaches/behaviors—secondly, the urge to change within the subjects. If the subject were reluctant to learn and upgrade themselves, this research would have been scattered at stage 1.

However, this study was conducted with a minimal number of subjects. To be able to mentor and coach a person required a lot of time and energy. Therefore, more researchers are needed to include more subjects. Further research is needed to validify these findings, and it should include more researchers and subjects. Another research could focus on how to grow inner motivation, which eventually will lead to Self-Regulated Learning.

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