

Continuing Professional Development (CPD) Model for Vocational High School Teachers in Indonesia

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Abstract: The demand for higher-quality teaching and learning has become an important necessity in recent years. In line with this, several countries are focusing on Continuing Professional Development (CPD) to improve teacher competence as a strategy that can facilitate the acquisition of new types of knowledge and skills. The aim is to meet the contemporary needs of one of the existing education systems. However, the effective CPD model is still a matter of debate. Therefore, this study aims to develop a CPD model for Vocational High School (VHS) teachers. This study uses Research and Development (R&D) to develop a CPD model for VHS teachers. The results of the study indicate that the CPD model for VHS teachers has four model components consisting of (a) components of the teacher study group; (b) the teacher performance evaluation component; (c) teacher learning component; and (d) the teacher professional portfolio component. The four components can be integrated and can be implemented independently according to the needs of the teacher. This study has implications for several vocational education practitioners in developing the CPD program in vocational high school. This model can be used to reflect teachers, both individually and collectively, to improve teacher competence and performance.

Keywords: vocational teachers, continuing professional development (CPD), vocational high schools (VHS), teacher professional development

1. Introduction

Until now, education is still recognized as a major factor in the growth and development of a nation's economy. Various programs aimed at improving the quality of education have been scheduled, including improving teaching and learning quality in the classroom. The quality of teaching and learning in the classroom depends on teachers' ability to transfer knowledge to students. This means that teachers play an important role in improving student learning outcomes through their quality. Teachers are the most important factor affecting the quality of education (Hattie, 2003) and are always considered a determining factor for educational change success (Kwok-wai, 2004). In this context, teacher professional development programs are considered to help improve their quality. In fact, some experts state that the professional development of teachers is significant to change teaching practices in the classroom, improve school quality, and improve student learning outcomes (Borko, 2004). Professional development is recognized as very important in maintaining and improving teaching and learning quality in schools (Steiner, 2004). Teacher continuing professional development (CPD) is considered one strategy for overcoming deep-rooted quality problems and promoting active learning, problem-solving, and student-centered teaching methods (Ministry of Education, 2003). Many experts have discussed the importance of CPD in education development (Gemedi et al., 2014; Huang, 2016; Kirsten, 2020; Postholm, 2018; Zuzovsky, 2001). This important point of CPD also applies to vocational education, which requires the development of teacher professionalism.

Professional development consists of conscious and planned learning experiences and activities intended to provide direct or indirect benefits to individuals, groups, or schools and contribute to the quality of education in the classroom (Day, 1999). In this context, professional development includes formal or informal activities, planned or unplanned, and carried out individually or collectively to increase teacher capacity and positively impact student learning and achievement. In other words, CPD helps teachers to succeed and enables students to learn by changing classroom practices. The second international Congress of Technical and Vocational Education (VET), organized by UNESCO in 1999, stated that human resource development is built through well-trained teachers. Teachers are agents of change in building a knowledgeable society, so innovation and quality improvement are needed in vocational teacher training to meet challenges in a knowledgeable society (Majumdar,

2011). Besides, teachers need to be evaluated for their performance in teacher performance assessment. They must participate in the Continuing Professional Development (CPD) program since becoming a teacher (Peraturan Menteri Pendayagunaan Aparatur Negara Dan Reformasi Birokrasi Nomor 16 Tentang Jabatan Fungsional Guru Dan Angka Kreditnya, 2009). In addition to learning activities and other additional assignments relevant to school functions that are given a credit score as a condition for teachers' promotion/functional position, CPD is recognized as one of the main elements in their career development.

However, the implementation of CPD for teachers in Indonesia faces four problems, namely: (1) the teaching load of teachers 24 hours per week is considered very heavy; (2) teachers are not prepared seriously to become researchers; (3) management of the teacher performance appraisal system that is not fair; and (4) policies on regional autonomy that drag teachers into the political sphere (Mawardi, 2012). Another problem that encourages good CPD implementation is the acquisition of teacher competency test scores on the professional and pedagogical aspects of teacher competence which shows unsatisfactory results (Kemendikbud, 2015). In particular, the competency test scores for vocational high school teachers still score below the Government's standards. This value indicates that there are still many Vocational School teachers who have not achieved the ideal score, so that their pedagogic competence and professionalism must be increased. This condition illustrates the weak participation of teachers in Indonesia to improve and develop their competence. Also, this condition indicates that teachers' professional development is still far from being targeted to improve teacher performance and competence. Therefore, efforts to increase teacher competence can be carried out by paying attention to teacher professional development planning following teachers' real needs in the field, context, and school characteristics.

Based on theoretical databases and previous studies, it can be concluded that the implementation of the CPD program in Indonesia needs to be improved. Many studies discuss CPD, but how to model CPD on vocational high school teachers in Indonesia is still limited. Studies on an effective CPD program model to improve teacher professionalism quality are still scarce and very much needed. Therefore, this study aims to develop a CPD model for vocational high school teachers. In particular, this study aims to reveal the level of Conformity and Gaps in the Implementation of CPD Aspects. Besides, this study aims to determine the Level of Importance of the Teacher's Main Duties and the Level of Teacher's CPD Needs. Finally, this study tries to develop the Vocational High School Teachers' CPD Model. This study's results are expected to serve as a reference for the implementation of the CPD program for them.

2. Literature review

The important role of teachers to improving student learning outcomes

Teachers have an important role to play in improving the quality of student learning outcomes. The teacher's ability to manage the classroom and transfer knowledge is the teaching duties' core skills. However, these teaching skills must always be upgraded along with the development of science and technology. Therefore, the involvement of teachers in professional development programs is a must. Professional development programs for teachers are supported by the epistemological role they play in ensuring an effective instructional approach and grounded content and knowledge of teacher pedagogical content (Luneta, 2011). The teacher, professional development program aims to improve student learning quality by improving teaching quality through constant review and assessment of teacher content knowledge, instructional approaches, and pedagogical content knowledge, identifying effective approaches and utilizing them to benefit students (Kucan, 2007). Therefore, the professional development program is intended not only to improve the quality of teaching but also the knowledge, skills, and attitudes of teachers to educate students more effectively (Blazer, 2005).

The teacher's role is not only in delivering material or teaching content. The most difficult thing is how the teacher transfers teaching content to understand what it is conveying. These skills are obtained from experience and insight during teaching. Excellent teachers also have knowledge and understanding of how students learn and theories related to effective learning, how content is represented and modeled, the scope and sequence of subject matter, and the level and suitability of the language of instruction. To be effective, teachers must have a foundation and a deep understanding of the content they teach (Hill et al., 2008). It is also necessary for researchers to say that in many countries, it has been realized how important the role of teachers is, and they have involved teachers in the CPD program as a teacher capacity-building strategy (Huang, 2016; Opfer & Pedder, 2010; Pedder & Opfer, 2010; Wabule, 2016).

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The CPD program is intended for teachers to improve job performance skills, both for themselves and groups (Cobb, 1999). Besides, this program is useful to become active learners who are involved in concrete tasks of teaching, assessing, observing, and reflecting (Bantwini, 2009; McLaughlin & Zarrow, 2001). CPD is also useful

for expanding a teacher's work performance into developing or promoting their career (Arends & Phurutse, 2009). According to Villegas-Reimers (2003). CPD is useful for developing a teacher's professional knowledge and understanding. Teachers are understood as reflective practitioners who enter the profession with knowledge but acquire new knowledge and experiences based on previous knowledge. The demands of teachers to perform excellence in teaching encourage them to learn from time to time, and professional development is considered a long-term process, so that a series of related experiences, rather than just once, is seen as more effective because it allows teachers to link previous knowledge with new experiences (Bantwini, 2009; Murray, 2010).

The CPD model proposes that a particular job can develop to a very high level of special characteristics or attributes. The teacher's CPD program is part of their professional culture. In the traditional understanding, teacher CPD is limited to short-term after-school courses and in-service development, largely preparing teachers for top-down reforms. This understanding no longer applies to describing the CPD program in today's era. CPD has a broad positive impact on the professional development of a teacher in his career. Teachers face certain tasks and organizational constraints, manage certain conflicts, want to have certainty and certainty, and want to develop and build their professional identity. This results in a specific culture of shared beliefs and practices that are influenced by the context. The relationships that teachers build with actors who offer teacher development knowledge are also part of this development culture. This perspective suggests that CPD includes not only education and training in the form of an organized program but also any self-determined and systematic development such as reading books and journals independently, attending university courses, programs, and conferences, as well as interactions with colleagues and school principals (Villegas-Reimers, 2003).

3. Method

This study uses the Research and Development method to produce a product in the form of a CPD Model for Vocational High School teachers. The development of this model refers to the design and development research in the Research model category (Richey & Klein, 2009) which consists of three stages, namely: (1) model development; (2) model validation; and (3) the use of the model (model use). This CPD model development study for Vocational High School teachers is limited to the second stage, which includes model development and model validation.

The data collection techniques of this study used a questionnaire, observation, and documentation. The questionnaire was used to analyze the Continuing Professional Development model's needs for vocational high school teachers. The questionnaire for the analysis of vocational high school teachers' professional development needs consists of three parts. The first part is the teacher's perception of the condition that should be (ideal) with the current state (actual) regarding the implementation of the CPD. The second part is teachers' perceptions of the level of importance of teachers' main duties and functions with the level of CPD needs of teachers regarding teacher competence and teacher CPD performance. Meanwhile, the third part is about the impact of CPD activities that teachers have carried out. The data analysis of this study used descriptive statistical analysis.

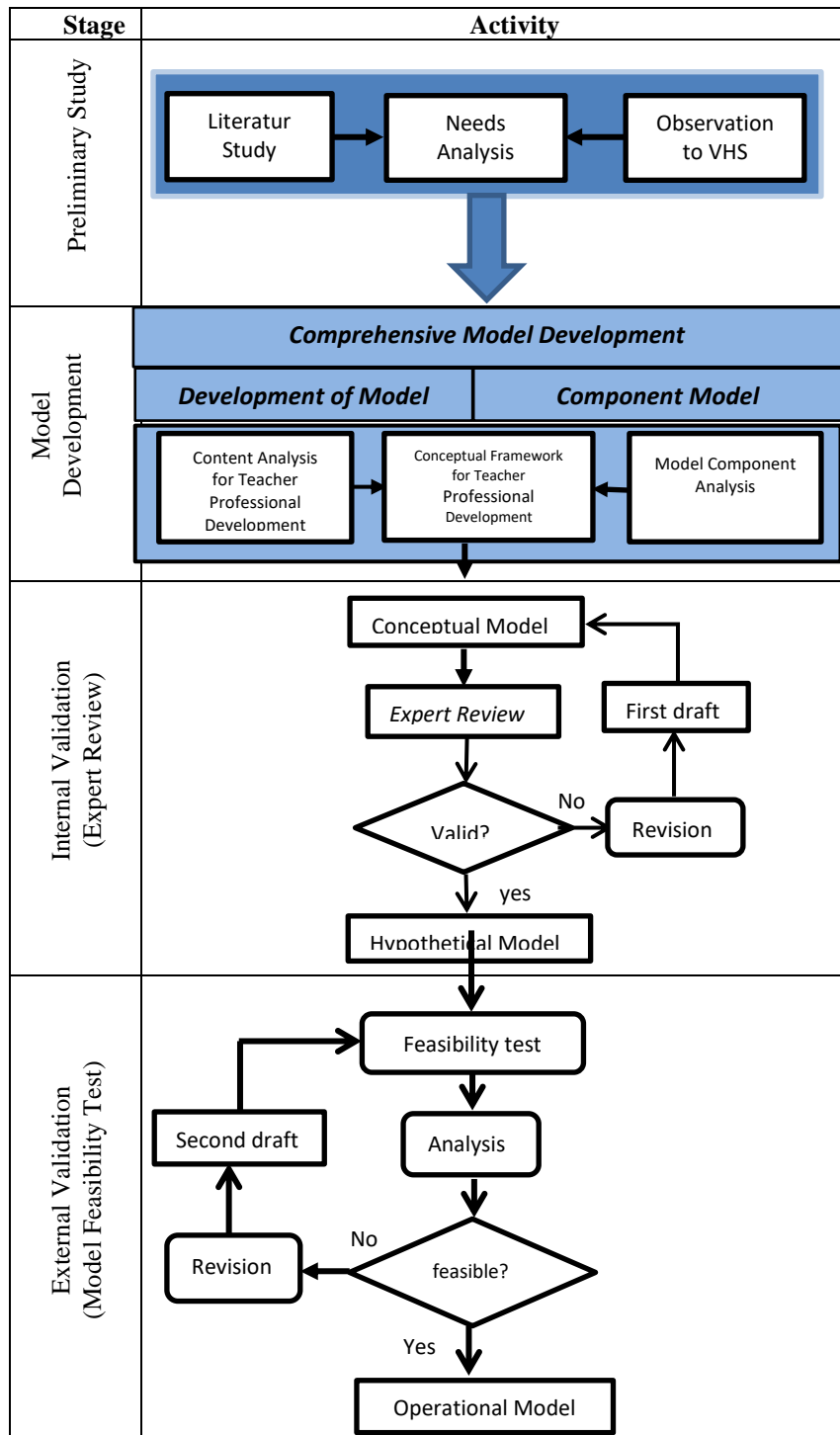


Figure 1. Development Research Stages

4. Result

Needs Analysis Results

The results of the needs analysis were obtained through distributing needs analysis questionnaires. In the needs analysis questionnaire, three parts are revealed to understand the professional development needs of vocational high school teachers. These parts are: (1) the level of disparity in the implementation of CPD program policies; (2) the level of importance of the main duties and functions of teachers with the level of CPD needs of teachers; and (3) the impact of CPD activities that teachers have carried out. The results of the analysis with these parts can be described as follows.

1) Level of Conformity and Gaps in the Implementation of CPD Aspects

The level of conformity and gaps in the implementation of CDP aspects consists of 7 aspects, namely: (a) the definition of CDP; (b) CPD objectives and benefits; (c) CPD patterns and activities; (d) CPD loads; (e) CPD support; (f) the impact of the CPD; and (g) teachers' CPD performance. The average result of the gap in the seven aspects is 0.75 points. Meanwhile, the value of conformity from seven aspects received a value of 80%. This indicates that there is still a gap of 20% in the implementation of CPD by vocational high school teachers. Meanwhile, the highest level of disparity in implementing CPD is with a value of 0.85 points or a conformity value achieved by 76.96%. Furthermore, based on the results of different tests, there are differences in the implementation of the CPD aspects of vocational high school vocational teachers; it can be concluded that there are actual differences with the ideal state of implementation on aspects of CPD carried out by vocational high school vocational teachers. This means that there are differences in teacher perceptions about the current implementation of CPD and the implementation of the CPD that should be.

2) The Level of Importance of the Teacher's Main Duties and the Level of Teacher's CPD Needs

The level of importance of the main tasks and functions and the level of CPD needs of teachers on teacher competence and CPD performance consists of seven aspects of knowledge and understanding, namely: (a) about students; (b) regarding the curriculum of Vocational High Schools; (c) the scope of the expertise program material; (d) learning environment in Vocational High Schools; (e) the learning process in Vocational High Schools; (f) evaluation and assessment in Vocational High Schools; and (g) professionalism of vocational high school teachers. From the results of different tests, it can be concluded that there are differences in the level of importance of the main tasks and functions of teachers with the level of CPD needs. This difference is related to the knowledge and understanding of teacher competencies and teacher CPD performance. Meanwhile, there is no difference in the aspects of knowledge and understanding of teacher professionalism in the different test results. In this case, it can be concluded that teachers' professional aspect is important and needed, both for the main tasks and functions of teachers and the needs of teachers' CPD.

Aspects of knowledge and understanding of professionalism are aspects that are considered very important and very much needed. These aspects consist of: (a) the ability to carry out personal and professional development through updating of knowledge, skills, and expertise competencies related to main tasks and functions; (b) the ability to reflect and self-evaluate their performance and competence for improvement and development of main tasks and functions; (c) the ability to produce scientific work and make innovations through research to improve the quality of learning and student learning outcomes; (d) the ability to understand various foreign language literature relevant to the program and the competency of the skills being handled; (e) be involved in various scientific forum activities and professional development through the scientific community and professional associations; (f) the ability to work harmoniously with peers, school management, and parents and stakeholders; (g) having a commitment to improve the quality of vocational education and high expectations for the success of students; and (h) the ability to learn independently and collaboratively and understand the nature of lifelong learning.

3) Impact of CPD Activities for Teachers

The implementation of the CPD program by vocational teachers is realized through formal and informal training activities. The needs analysis survey results on the impact of CPD activities that teachers have attended can be seen in Table 1.

Table 1. Level of Impact of Teacher CPD Activities

No	Vocational school teacher CPD activities	Participation		Score	Score	
		Yes	No		PR (%)	IL (%)
1	Education and training in education or expertise organized by the education office or education and training center institution/body.	51	0	174	100	85
2	Qualifying programs (for example, further study undergraduate or specialist programs).	20	30	67	40	84

No	Vocational school teacher CDP activities	Participation		Score	Score	
		Yes	No		PR (%)	IL (%)
3	Competency improvement certification program in the field of teacher expertise competency.	49	2	175	96	89
4	Active participation in teacher community activities.	45	5	144	90	80
5	Active participation in scientific activities or seminars in the field of education or expertise.	25	25	82	50	82
6	Research independently or in groups in the field of education or expertise.	21	29	68	42	81
7	Presentation or publication of research results or innovative ideas in education or expertise in scientific forums / scientific journals.	19	31	56	38	74
8	Creating/modifying learning media or teaching aids/practicum.	43	7	148	86	86
9	Involved in the textbook writing team, modules/dictates in the field of education, or expertise.	25	25	82	50	82
10	Curriculum development, evaluation, and assessment activities.	38	12	130	76	86
Average					66	84

Note: PR: Participation Rate; IL: Impact Level

Based on Table 1, it is illustrated that of the 10 types of CPD activities that vocational high school vocational teachers have attended, the results can be seen based on the total score obtained compared to the criteria or ideal score as a whole. With this data, it can be stated that the impact of the 10 CPD activities on average has an impact level of 83% with very impact criteria. In more detail, these results can be explained as follows.

(a) Of the 57 vocational high school teachers who complete the questionnaire, about 50 to 51 teachers. This means that the participation of respondents who filled out the questionnaire from 10 activities attended by teachers was 88% to 89% of 57 teachers.

(b) Based on data on the average participation rate of teachers who answered "Yes," that is, participating in 10 activities, around 34 teachers (60%). The lowest participation was 19 teachers, and the highest was 51 teachers.

(c) Based on the data in the category of the top three activity groups with the highest level of participation, activity number 1 was 51 teachers (100%); activity number 3 as many as 49 teachers (96%); and activity number 4 as many as 45 teachers (88%).

(d) Based on the data in the category three lowest activity groups with the lowest level of participation were activity number 7 with 19 teachers (37%); activity number 2 as many as 20 teachers (39%); and activity number 6 as many as 21 teachers (41%).

(e) Based on the data in the top three groups of activities with the highest level of impact is activity number 3, namely 89%; activity number 8, namely 86%; and activity number 10, namely 86%.

(f) Based on the data in the category of the lowest three groups of activities with the lowest level of impact is activity number 7, namely 74%; activity number 4, namely 80%; and activity number 6, namely 81%.

(g) One activity in the category of activities with a high level of impact and participation is activity number 3, namely: "certification program for increasing competence in the field of teacher expertise competence" with criteria of 89%, with a participation rate of 49 teachers or 96%.

(h) One activity in the category of activities with a low level of participation and impact is activity number 7, namely: "the presentation or publication of research results or innovative ideas, both in the field of education

and expertise in scientific forums / scientific journals" only gets a criterion as large as 74% (quite impactful). And teacher participation rate of 19 teachers or 33%.

Figures 2 and 3 illustrate the level or ranking of CPD activities of vocational high school teachers based on the level of impact and level of participation.

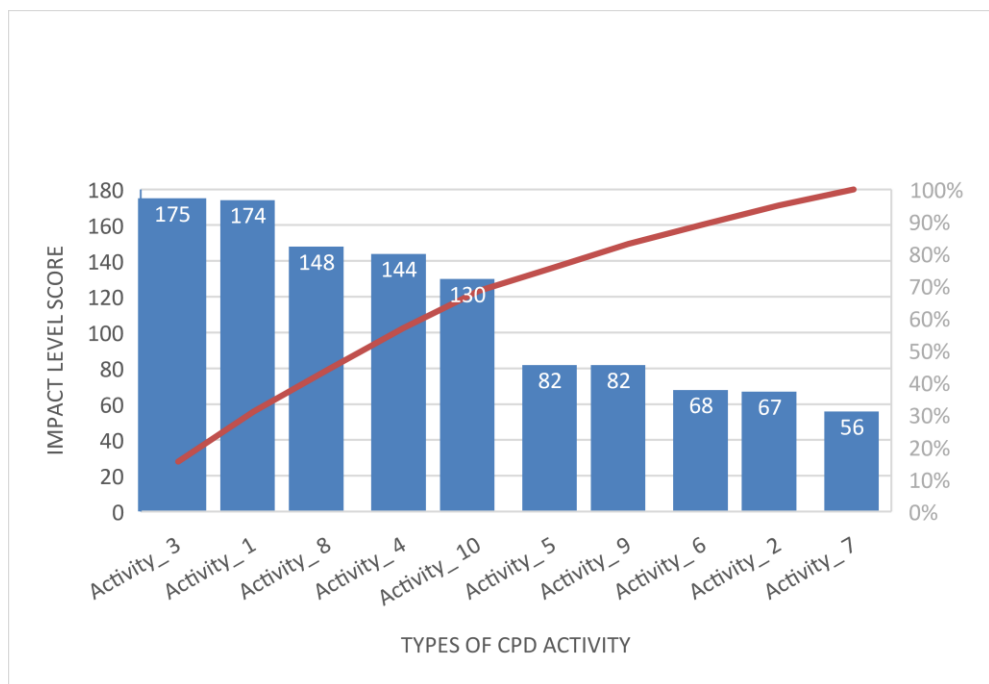


Figure 2. The Ranking of Impact Levels of Vocational High School Teachers' CPD Activities

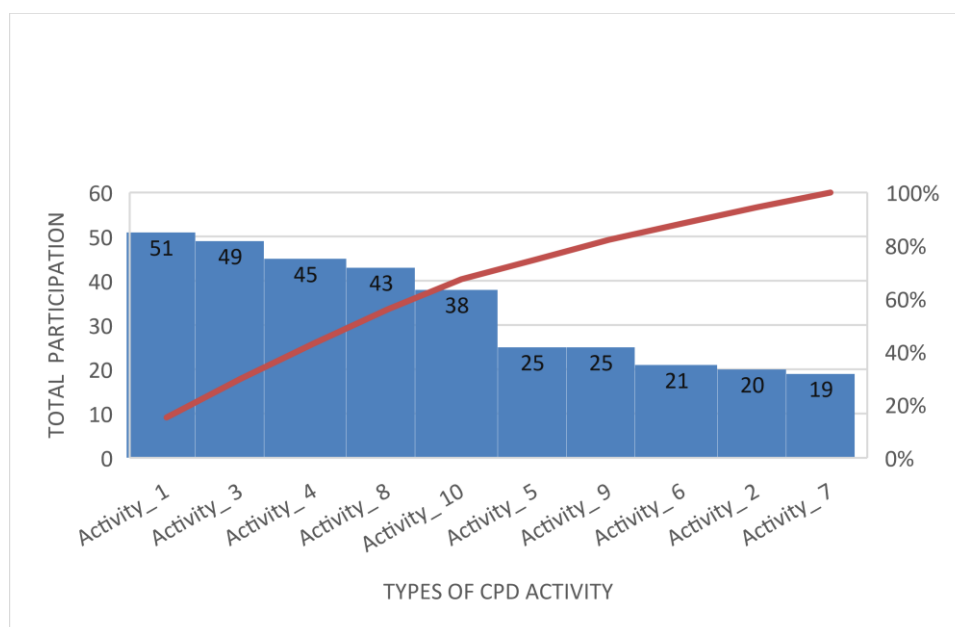


Figure 3. The Ranking of Participation Levels of Vocational High School Teacher CPD Activities

Vocational High School Teachers' CPD Model

Based on the data and information and the resume of the preliminary research results, it can be concluded that several aspects, dimensions, frameworks, and characteristics of teacher professional development. Furthermore, the preliminary research results are used to design and construct elements to complement the contents of the CPD Model components. Descriptions and descriptions of the development stage of the model to answer several

questions in this study are as follows: (1) What kind of vocational teacher professional development model is practical, comprehensive, and inherent in teacher duties and line with performance appraisal, career development, promotion, and position?; (2) What components and elements are needed to complete the resulting CPD model?

Based on the preliminary study stage's resume of data and information, the CPD conceptual model is obtained. The resulting conceptual model is shown in Figure 4 below.

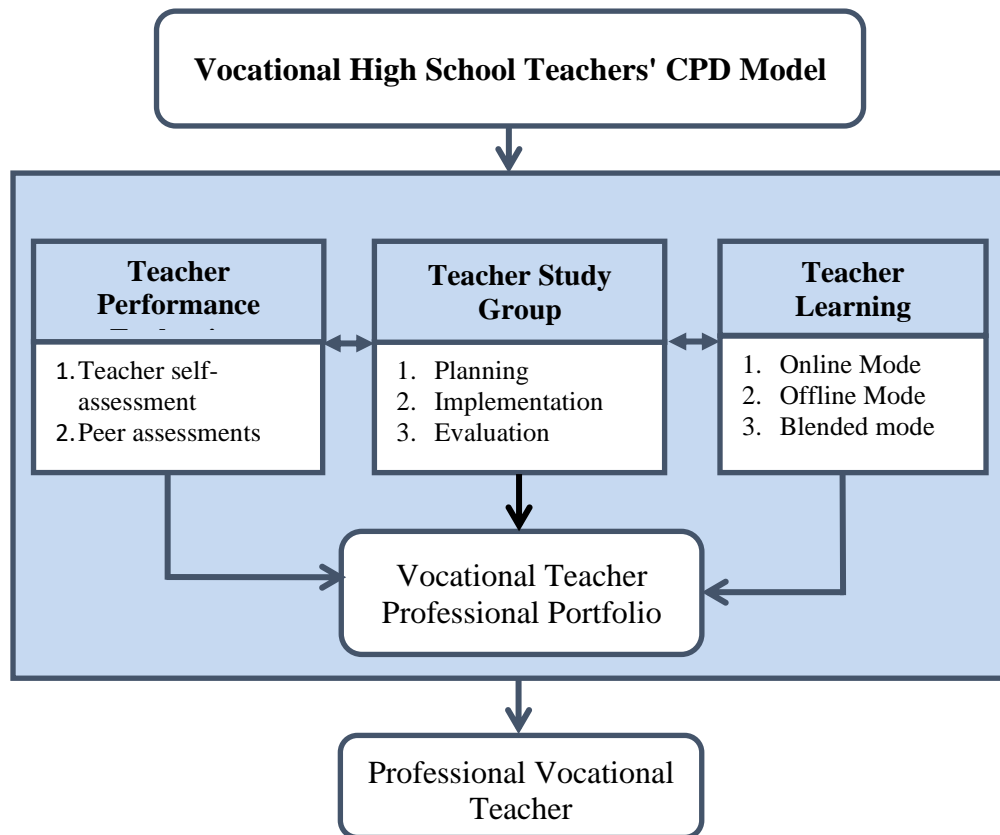


Figure 4. Conceptual CPD Model for Vocational Teachers

The resulting conceptual model consists of four model components consisting of: (1) Teacher Study Group; (2) Teacher Performance Evaluation; (3) Teacher Learning; and (4) Teacher Professional Portfolio. The Teacher Study Group is an effective strategy or structure for teacher professional development. The Teacher Study Group is also a forum or means of teacher learning through a collaborative culture with a collaborative approach. The Teacher Study Group can exchange ideas, learn, and share experiences, knowledge, and skills; to improve teacher performance and competence. The Teacher Study Group concept, namely from the teacher, by the teacher, and for the teacher. Teacher Performance Evaluation consists of instruments: (a) teacher self-assessment and (b) peer assessment. The ultimate goal of Teacher Performance Evaluation is to realize teachers' awareness of their performance and competence. Teachers use the Teacher Performance Evaluation instrument to assess performance and competency achievement through their own reflection and awareness. This reflection and awareness encourage teachers to always make improvements in carrying out their main tasks and functions. The Teacher Performance Evaluation results resume encourages teachers to reflect on their own performance and identify strengths and weaknesses. If the teacher's strengths and shortcomings are attached to him, it will generate motivation to make improvements in achieving the desired results. Besides, this identification is useful for determining priorities so that professional development activities are right on target and following needs.

Meanwhile, Teacher Learning is a teacher learning process in fulfilling and improving their performance and competence. The learning process can be carried out through various modes, either face-to-face learning, online learning, or combining the two (blended learning). The application of these three learning models helps teachers deepen and broaden their knowledge and improve their skills and competency for expertise. With the application of these three learning modes, teachers can reduce time and costs as well as flexibility in implementing training so that in addition to carrying out professional development, they can still carry out their main tasks (Job Embedded).

Teacher professional portfolios are documented evidence of the results of teacher participation activities in professional development program activities. Also, portfolios are a source of information to consider teachers' success in carrying out their main tasks and functions and achieving the required performance and competencies. The CPD portfolio model emphasizes evidence related to the elements of the CPD program, namely: (a) self-development, (b) carry out scientific publications, and (3) carry out innovative work. Mechanisms and procedures for each of these components. In full, it is presented separately in the CPD Model book.

5. Discussion

The final product of this study produces a CPD Model for Vocational High School teachers. This model was developed based on the analysis of the needs of vocational high school teachers. Based on the needs analysis and literature review and relevant research results, the CPD Model consists of four components, namely: (1) Teacher Study Group; (2) Teacher Performance Evaluation; (3) Teacher Learning; and (4) Teacher Professional Portfolio. This model is designed as an alternative for Vocational High School vocational teachers to implement the CPD program policy, a government policy and is mandatory in the professional development of vocational high school teachers. Also, the model is developed to accommodate the needs of teachers who require a framework for developing the professionalism of vocational teachers that contributes to the assessment of teacher performance in fulfilling teacher credit scores, career development, promotion, and teacher positions. Therefore, the use of this model can be used by teachers comprehensively and is attached to the main duties of the teacher according to school needs, teacher needs, and the development of competency skills and teacher performance.

The CPD model for vocational teachers has four model components that are interrelated and complementary. The four components of the model are integrated, systemic, contextual, and fulfill the principles and characteristics of effective and efficient teacher professional development. The model components contained in this model can describe the position of each of these components. Teacher Study Group Components. This component serves as a community forum for collegiality and collaboration between school teachers and inter-school teachers. Currently, the Teacher Study Group component can be realized by utilizing information technology-based platforms, one of which is the platform owned by Microsoft, namely "Microsoft Teams." This platform can be used by teachers to easily form a Teacher Study Group in the context of collaboration in a community and collegiality. This is in line with the research results conducted by Kelly and Cherkowski (2015), which states that building a culture of collaboration is very important at all levels of school. Therefore, a teacher community is needed in collaboration and collegiality in carrying out collective reflection as part of teacher professional development. Also, the legality community is an opportunity for teachers to increase belief and practice positive and effective learning because they feel supported, cared for, and respected as part of professional learning in a community where teachers share.

Teacher Performance Evaluation Component. This component serves as a medium for teachers to reflect. Reflection is carried out based on suggestions or assessments from the teacher's outside or inside perspective obtained from peer assessment of teachers and teacher self-assessment. According to Elliott (2015), effective teacher performance appraisal is to get the right balance between performance appraisal and professional development. In line with this opinion, Maya and Kaçar (2018) state that teacher performance evaluation has an important objective in contributing to teacher self-development and causing positive development as a result of objective evaluation. Therefore, the teacher performance assessment component in this model is very strategic in improving teacher professionalism. Teacher Learning Components. This component is a forum for teachers to enrich, improve and deepen their competence and performance. Currently, it allows teachers to learn, both individually and collectively. Learning can be done online or offline as well as formally or informally. Teacher learning can also be carried out in a planned or incidental manner according to the teachers' needs and interests themselves.

Professional Portfolio Component, this component is part of the teacher's reflection. A teacher professional portfolio is not just a collection and evidence of activities or professional activities the teacher has carried out. A portfolio is a track record that teachers can use to reflect on their abilities and improve teachers' abilities by learning from previous experiences. This understanding is in line with the research results conducted by Khan and Begum (2012), which states that portfolios are considered a good way to measure professional growth. In this situation, the teacher can report his progress and find out his weaknesses and look for alternatives to overcome these weaknesses. Portfolios are sources of reflection on current learning or experiences and tools to reflect teachers' professional beliefs and goals. In the process of developing a portfolio, teachers view their professional and academic careers as learning processes. It shows what they learn at different levels and helps them make their teaching and learning process comprehensive (Khan & Begum, 2012). Meanwhile, the results of other studies

suggest that portfolios can serve as a potentially effective method of encouraging teachers to evaluate their own abilities and improve their skills. A significant advantage for teachers is the opportunity to describe the teaching process from their own perspective (Gelfer et al., 2015).

6. Conclusion

The professional development of vocational high school vocational teachers is carried out by implementing the Sustainable Professional Development program policy. The teacher's implementation so far only participates in and participates in education and training organized by training institutions. Participation is based on an offer so that the teacher cannot implement it independently based on the teacher's reflection needs. The obstacles that were found in the field in carrying out professional development included: (1) the limitations of the participants for each training offer that came along, and the timing was not right; (2) funding partly borne by participants; (3) material that is sometimes less relevant to the needs of teachers. These things occur because, at the planning level of vocational high school teacher professional development activities, there is no planning either at the individual teacher level or at the school level. This study offers a CPD model for vocational high school teachers, which has four model components consisting of (a) Teacher Study Group components; (b) teacher performance evaluation component; (c) teacher learning components; and (d) Teacher's professional portfolio component. The four components can be integrated or can be implemented independently according to the teacher's needs. This study has implications for several vocational education practitioners in developing CPD programs in vocational secondary schools. This model can be used as a forum for reflection, both individually and collectively, to improve teacher competence and performance.

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