The Strategy of Continuous Professional Development Program for Elementary School Teachers on Pedagogical Competencies

Hikmawati Risa *

* Magister of Basic Education, Postgraduate Program, State University of Jakarta

hikmawati.risa@gmail.com

Nurjannah **

** Magister of Basic Education, Postgraduate Program, State University of Jakarta

Jannah2005@gmail.com

Faisal Madani ***

*** Magister of Basic Education, Postgraduate Program, State University of Jakarta

faisalmadani@unj.ac.id

ABSTRACT

Professional teachers participate in creating a fun and meaningful learning process that fosters a love of learning in students. Continuous professional development provides space for students to grow and develop in learning through achieving pedagogical competence. However, the problem found is that the quality of interaction that supports students in learning has not been created by constructing knowledge as well as planning and implementing continuous professional development based on teacher needs, so teacher involvement in working groups is relatively small. Therefore, this research aims to analyze the strategy of the continuous professional development program and the program's contribution to the pedagogical competence of SDIT Al Kawaakib teachers. The research method used is qualitative with a descriptive case study approach. The informants in this research were the principals and teachers at SDIT Al Kawaakib. Data collection was carried out through interviews, observation, and documentation. Data analysis uses the Miles and Huberman model. The conclusion from the research results is that continuous professional development strategies contribute to teachers' pedagogical competence through learning communities with collaborative and participatory work approaches that can stimulate teachers' reflective abilities. The next recommendation that can be made is related to strengthening the learning community with a productive discussion atmosphere in creating an atmosphere for sharing best practice.

Keywords: *Strategy; Continuous Professional Development; Pedagogical Competence; Elementary school teachers*

ABSTRAK

Guru yang profesional turut serta menciptakan proses pembelajaran yang menyenangkan dan bermakna dalam menumbuhkan kecintaan belajar pada peserta didik. Pengembangan keprofesian berkelanjutan memberikan ruang kepada peserta didik untuk tumbuh dan berkembang dalam pembelajaran melalui pencapaian kompetensi pedagogik. Namun, ditemukan permasalahan yaitu belum terciptanya kualitas interaksi yang mendukung peserta didik dalam belajar dengan mengkonstruksi pengetahuan serta perencanaan dan pelaksanaan pengembangan keprofesian berkelanjutan yang didasarkan pada kebutuhan guru, sehingga keterlibatan guru

dalam kelompok kerja relatif kecil. Oleh karena itu, penelitian ini bertujuan untuk menganalisis strategi program pengembangan keprofesian berkelanjutan dan kontribusi program terhadap kompetensi pedagogik guru SDIT Al Kawaakib. Metode penelitian yang digunakan adalah kualitatif dengan pendekatan studi kasus deskriptif. Informan dalam penelitian ini adalah Kepala Sekolah dan guru di SDIT Al Kawaakib. Pengumpulan data dilakukan melalui wawancara, observasi, dan dokumentasi. Informan dalam penelitian ini adalah kepala sekolah dan guru. Analisis data menggunakan model Miles dan Huberman. Kesimpulan dari hasil penelitian adalah strategi pengembangan keprofesian berkelanjutan berkontribusi terhadap kompetensi pedagogik guru melalui komunitas belajar dengan pendekatan kerja kolaboratif dan pertisipatif yang dapat menstimulasi kemampuan reflektif guru. Rekomendasi yang dapat dilakukan selanjutnya adalah terkait penguatan komunitas belajar dengan suasana diskusi yang produktif dalam menciptakan suasana berbagi praktik baik.
Kata Kunci: *Strategi; Pengembangan Profesional Berkelanjutan; Kompetensi Pedagogik; Guru Sekolah Dasar*

INTRODUCTION

The ideal teacher can create a fun and meaningful learning process, thereby fostering a lifelong love of learning in himself and his students (Haug & Mork, 2021; Kinser-Traut & Marx, 2022; Madina, 2022). It is hoped that this teacher's example will be able to inspire students to create strong individuals with meaningful knowledge obtained through a fun learning process (Bahriadi et al., 2022; Srinivasacharlu, 2019; Susiani & Abadiah, 2021; Toshtemirovich, 2019). Professional teachers are teachers who have the ability or competence to carry out their duties as educators (Alsina & Mulà, 2019; Morris, 2023; Sulaiman & Ismail, 2020). Consistency of professional teachers in responding to future challenges and teacher professional development is very necessary, one of which is through continuous professional development. This sustainable professional development is learning that is carried out continuously by educators to bring about changes related to student success so that students know, skills and can understand the material more optimally (Wulandari & Supriyoko, 2022). Therefore, consistency in implementing continuous professional development is a challenge for educators and policymakers. It has an impact on student learning outcomes so that they have meaning in their lives. Based on the guidelines general of the continuous professional development program 2018 from the Ministry of Education and Culture, the development profession is the development of teacher competency carried out following needs, in fact, gradual and sustainable (Kemendikbud, 2018). This book also explains UKG results for 2015, 2016, and 2017 for each level of education that has been implemented through continuous professional development. The average UKG experienced an increase amounting to 24.04%. The impact is significant the in line with the objective development of the profession sustainable, that is develop potential educators to realize standard competence specifically competence pedagogy (Sari et al., 2020).

Competence pedagogy is a teacher's ability to understand students, design and implement learning, develop students, and evaluate results by studying students to actualize their potential (Fajarwati & Bakar, 2019). The role of competence pedagogy influences the learning process in the classroom which is visible in the teacher's background and experience in supporting abilities and knowledge about students. However, the problem is found misalignment between the needs profession with activity learning to fulfil development program needs professionalism sustainable, so it has not been running maximum (Molope & Oduaran, 2020). Planning and implementation development professionalism is not sustainable either based on teacher needs, so teacher involvement in group work with less activity

(Zainuddin et al., 2019). Even if the development of professionalism has happened, it has not impacted on improvement development of participating teachers themselves (Srichom, 2019). High participation in this program has not been compared directly with quality teaching (Rahman, 2021). The various activities in the development of professional teachers have not contributed in the term long, because teachers' motivation can be still classified as low (Ostinelli & Crescentini, 2021). Besides that, the teacher hasn't either done developed professionalism in a way comprehensive (Kastawi & Yovitha, 2019). Implementation of continuous professional development at elementary schools still has obstacles for internal teachers to carry out the development of professionalism sustainability. This obstacle was related to a lack of teacher motivation to develop their selves. The motivation and competence of the teacher will correlate with performance (Trio et al., 2023). If there was an activity from the government, it only be followed by the teacher inside amount limited, and after the teacher has participated in the program, they can not get support from colleagues (Herman et al., 2024).

On research, there are findings that the program is carried out in a way collaborative with involves teacher participation and integration in the work is effective in the sustainability of the program in terms long. The form of collaboration can generate appropriate program ideas for the needs of teachers who play a role active in program development (Bergmark, 2020). Findings regarding development program strategies profession sustainable in learning The teaching profession is also related to changing methods of thinking, acting, and relating with other people in teaching, research, and teacher collaboration. In the study this is the development process of professionalism done from the corner look bottom-up, so involve teacher empowerment in developing the potential it has. There are five characteristics of development professionalism and school reform, namely (1) presenting teachers as actors, (2) depicting dynamic relationships, (3) treating development professional as something contextual, (4) including content development professionalism and school reform, and (5) consider results as part from the continuous cycle (Liljenberg & Wrethander, 2020).

Learning strategies through dialogue, collaboration, and reflection can be done by community practice professionals. Community This creates a culture of each other studying together in continuous professional development (Imants & Wal, 2020). Culture each studying between teachers creates a community that can share experiences and practice good teaching with fellow teachers. The strategy for this program gives support to the development of competent pedagogy in creating comfortable and enjoyable learning and become pleasant atmosphere in a practice class (Kurino, 2018).

Implementation of continuous professional development requires a strategy to deliver effective programs. Based on the study conducted by Supovitz, Mayer, & Kahle (2000), the strategies carried out are 1) Alignment with the needs of individuals; 2) tasks; 3) Learning collaboration; 4) Training and workshops; 5) Usage of technology; 6) Evaluation periodically; 7) Approach holistic; and 8) Engagement active in organization profession. According to Mizell (2010), activities development of professionalism help teachers to find the approach pedagogy best to increase the results study participants educate (Yonanda et al., 2023).

For that's what development is professionalism Continuous teacher focus is also on competency ongoing professionalism and refers throughout his life. Competence is what it always is to guard the quality and relevance of service professionals on quality personal

knowledge and skills required (Anggraeni & Rachmajanti, 2020). The idea of training professionals becomes part of adaptation in obtaining skills through the development of professionalism that delivers impact on growth sustainable professionalism-based school so that teachers can guard quality (Srinivasacharlu, 2019).

One of the school bases that will become the object study is Al Kawaakib Integrated Islamic Primary School. Based on visit The beginning of what was done, the researcher got information from the headmaster that the school has running development programs Professional development for his teachers. The program name "Continuous Professional Development" which has been executed since 2019. This program is done daily and is sustainable, so this program walks with the system that can develop internal teachers to increase capacity in bringing up innovative learning.

Based on the explanation above, the gap in research about the lack of specific strategies in continuous professional development, and the lack of empirical evidence about the contribution of pedagogical competence. Therefore, the researcher is interested in research with a focus on "The Strategy of Continuous Professional Development Program for elementary teachers on Pedagogy Competence." The novelty of this research references the approach of strategies in continuous professional development that can contribute to pedagogical competence. The purpose of this study is to analyze development program strategies for professionalism sustainability and be aware of development program's professionalism sustainability can contribute to competence pedagogy in teachers' Al Kawaakib. The researcher hopes findings will develop the strategy of continuous professional programs on competency pedagogy furthermore for holder policy education and educators.

METHODS
Type and Design

From the analysis of problems found that is necessary to analyze more carry-on related to the development of strategy of continuous professional development program elementary school teachers on pedagogy competence. Therefore, The design of the study used is qualitative with an approach descriptive with the type of single case (Yin, 2018). Focus study is a continuous professional development program on competence pedagogy.

The procedure in this research is to determine the problem appropriate with a case study; identify the case, and then the finding is a program with a single case; collect data; analyze data; and interpret by reports of the meaning of the case (Creswell & Creswell, 2018).

Data sources and collection technique

Research has visited the field for a preliminary study of Islamic Elementary Integrated Al Kawaakib, Kedoya South, West Jakarta. The purpose it is to know and get the first information that correlates with the substance of the problem by collecting data relevant to the objective study through observation, in-depth interviews, and documentation. The researcher followed observation for three months with direct activity learning from arrival until the teacher went home in the evening. Research techniques of interview are purposive and snowball sampling until data saturation with sufficient information that is relevant to the focus study. Search document learning started from book curriculum unit education school started from the continuous professional development program in a run since in 2019.

Data analysis

This research uses three elements. These are places, informants, and activities. Informants in this research is headmasters and teachers representing the curriculum team and learning in each phase of the class. Procedure data analysis using the Miles Huberman model with data reduction, data display, and data verification (Safrizal et al., 2022). Observation and document analysis started by organizing observation notes and data with reading and understanding, identifying theme and pattern, analyzing theme, triangulation of observation data, interpreting, constructing data, and reflection researcher. In-depth interview analysis by writing, reading, understanding transcript, coding data, classifying and grouping themes, analyzing, and interpreting data to find validation (Creswell & Creswell, 2018.

Validity and reliability study based on credibility with members checking and triangulation from various data sources; confirmability with triangulation through different methods and sources, as well reflection to findings make notes field; dependability with make audit trail for inspect all over documents; and transferability with create detailed data to know relatedness with contextual becoming focus observation (Wulandari & Supriyoko, 2022).

RESULTS AND DISCUSSION

Results from the focus study on the strategy of continuous professional development program on competence pedagogy based on search observations, interviews, and documents as follows,

Table 1. Matrix Study.

Research Activities	Focus		Program Strategy Findings			
	Continous Professional Development (CPD)	Pedagogical Competence	School Learning Community (Kawaakib Learning Centre)	Approach		
				Colaborative	Paticipative	Reflective
Document						
School Curiculum	√	√	KOSP book document	√	√	√
Learning dosument	√	√	Documents on g drive, GCR, telegram link	√	√	√
Interview						
Teachers	√	√	CPD program with pedagogical competence	√	√	√
Curriculum team	√	√	CPD program with pedagogical competence	√	√	√
Headmaster	√	√	History of CPD and its development	√	√	√
Observation						
Curriculum team activities	√	√	Curriculum team coaching activity process	√	√	√
Learning planning	√	√	Teacher CPD activities	√	√	√
Making teaching modules	√	√	Planning on pedagogical competence	√	√	√
Teacher training program	√	√	Teacher CPD activities	√	√	√
Weekly meeting	√	√	Discussion of student development stages	√	√	√
Briefing and teacher evaluation	√	√	Teacher CPD activities	√	√	√
Implementation of pedagogical competence	√	√	Implementation of CPD in learning	√	√	√

Based on the table above, then found that the activities of CPD program from document, interview, and observation include by focus on CPD and pedagogical competence. The

strategy of the Continuous professional development program has been done through a community study named *Kawaakib Learning Center* (KLC) with approach strategy collaborative, participative, and reflective.

The Strategy of Continuous Professional Development Program on Pedagogical Competence

The ongoing professional development program for SDIT Al Kawaakib teachers has been implemented since 2019 until now. From the findings, it is known that this program strategy is carried out routinely and tentatively according to school needs. The needs of this school are synergized with teacher professional development. The following is a table of continuous professional development activities based on time,

Table 2. SDIT Al Kawaakib Sustainable Professional Development Activities based on time.

Time	Activity
Daily	• Teachers collaborate with teams in their divisions in the Learning Community (Kawaakib Learning Center) to create anecdotal records and formative assessments. • Teachers take part in self-development programs found on GCR, gdrive link, telegram. • Teachers and their division teams participate in reviewing documents, reflecting, and providing constructive feedback.
Tri Wulan	• Teachers, students, and parents reflect together and provide constructive feedback. • Teachers collaborate and participate in their divisions to create individual evaluation webbings to be followed up in the design and implementation of further learning.
Annual	• Annual work meeting • Teachers collaborate with teams to carry out planning projects for one year
Tentative	Teachers take part in activities according to their learning needs and personal development which are designed and adapted to the learning context at school, such as training carried out by regional teachers, education offices, JSIT Indonesia, and other institutions.

In the table above activity-based school based on time implementation, there is a process of making teachers independent learning in the community. This is in line with the statement headmaster at the time interview, as follows,

> "The emphasis is on making teachers have independent learning skills so that learning becomes a skill that they must have without waiting for stimulation or programs outside themselves. So, strengthening or growth strengthens skill motivation intrinsic to learning, concepts Initially, the teacher should not stop learning, because if he stops learning, then he will not be able to provide lifelong learning skills to his students, even though the teacher's job is to make them For Keep going Study in the sense of learning throughout life."

Development program professionalism sustainable for SDIT Al Kawaakib teachers expected to have the ability to study independently and growing motivation intrinsic order always connected with studying in the process of life. This is expected to contribute to students' independent learning abilities. Based on the definition of professional development in

theoretical studies, it is a meaningful learning process that stimulates teachers to learn throughout life to increase competence (Alfath et al., 2022). This matter was also stated by the headmaster and teachers, regarding the aim of the continuous professional development program, which is to provide opportunities for the school community to always be connected to learning. Document findings also support this ability deep teacher-learner project designed can stimulate the teacher to reflect in a way collaborative and participative work per division through the journal and follow up with modules planned daily for the next day the day in a way reflective and constructive feedback. This is supported by the theory of self-regulated learning that shows teacher competence can influent the effectiveness of learning for strategies of the program that can impact their ability (Lensi Hariyani et al., 2024).

This sustainable professional development is known as the Continuous Professional Development model which is a process that can be carried out formally or informally so that it can meet competency needs according to challenges that will be faced (Popova et al., 2022). This continuous professional development is known as the CPD (*Continuous Professional Development*) program at SDIT Al Kawaakib. This CPD carries out practice adjusted formally and informally with need. Activities in this CPD program are carried out with maintenance systematic in development quality personnel for implementation task professionals. This is in line with Lutovac (2020) who pays attention to competence in this program pedagogy. Based on the goal of continuous professional development in creating better teaching and learning situations. SDIT Al Kawaakib created a situation inside the named room capacity unique to give comfort in the learning process of teachers in divisions and between divisions so that a culture of mutual learning emerges between teachers for discussion and the process of *reviewing*. The function of continuous professional development in this maintenance orientation is also found in documents that show teacher and student education reports in improving pedagogical competence. Likewise, the implementation of educational innovation is found in the teaching modules that are created, evaluation and feedback are carried out every day when returning from school with a reflective culture and *constructive feedback*. Continuous professional development programs are managed by the School's Learning Community (Yonanda et al., 2021).

As for the characteristics of sustainable professional development according to Ucan (2016), to adjust the relationship between objectives and functions in identifying programs, it was found that the continuous professional development program with the name CPD at SDIT Al Kawaakib was integrated with government policies based on the Educational Unit Operational Curriculum Book regarding professional development, that document referring to government documents. In its implementation, this program is sustainable, flexible, varied activities, collaborative work, oriented towards improving performance, evidence-based, lifelong learning, and a reflective approach. In the continuous professional development component according to Yulmasita and Suking (2020), it was found that the continuous professional development program at SDIT Al Kawaakib included self-development in the form of education and training to increase competence. Based on the results of research and analysis related to the implementation of the continuous professional development program, the program has been running according to its objectives, functions, and strategies. What is of concern to be developed is the continuous professional development component related to

scientific publications which is still in the transition process for implementing the next strategy, so that it can be used as the teacher's best work in finding effective teaching practices.

The learning strategies used in implementing sustainable professional development programs with the alignment of individual needs, task-based, collaborative, training and workshops, use of technology, regular evaluation, holistic approach, and active involvement were found in interviews with school principals and teachers, the results of researcher observations, as well as learning documents designed by a team of teachers (Zhang et al., 2021).

Based on the characteristics of teacher professional development by Fischer et al (2018). indicators and their components (Bates & Morgan, 2018), as follows (1) content program topics are relevant to student learning with solution problem through approach reflective; (2) learning participant education designed and implemented by teachers with active involvement of students based on observations and results work classroom learning; (3) learning active and teacher inquiry is carried out by involving teacher participation and reflection; (4) learning community with collaborative work in each division and between divisions on the results carried out every day in the morning and after returning home teachers gather with their divisions to carry out planning and evaluation learning; (5) based This school is contextually appropriate to what is done to form a learning culture in the school and is reflected in character participant educate; and (6) continuous learning carried out every day. Continuous professional development activities can contribute to improving teacher competency with school-based sustainable professional development programs through activities carried out formally and informally that are aligned with the self-development needs of teachers and schools. In the continuous professional development component, there are 3 activities, namely the development of self, work innovative, and publication scientific (Nahdi et al., 2021). Self-development activities and innovative work take place in the professional development program, while scientific publications are a transition process for the program that is being prepared. The following is a model of strategy approach to learning communities in the SDIT Al Kawaakib sustainable professional program which was found based on the results of the analysis synthesized from the explanation above.
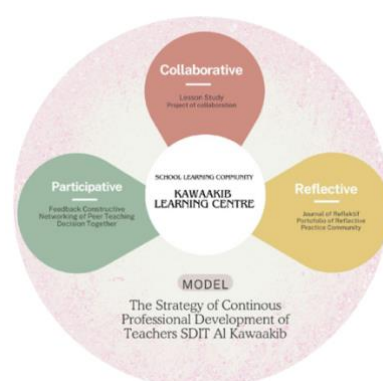

Figure 1. Strategy Continous Professional Development of Teachers SDIT Al Kawaakib Model

The Contribution of Continuous Professional Development Program on Pedagogical Competence

Teacher competency is part of the ability of a teacher (Rohman, 2020). Teacher competency consists of competency personality, pedagogical, professional, and social

(Hindriana et al., 2021). The discussion of the findings of this research focuses on CPD which contributes to pedagogical competence. Branch and Stefaniak (2019) state that learning design is a complex process that encourages creativity in development and produces effective and interesting teaching. for participant education (Sabri & Rahim, 2020).

Pedagogy is a theory for the practice of learning and education for participants based on its characteristics (Susanto, Rozali, et al., 2020). This pedagogy is one part of the competencies that teachers need to master in managing students based on the stage of student development through the process of planning, implementing, and evaluating which has an impact on change. behavior becomes better (Ibragimov, 2021).

This pedagogical competency aims to provide knowledge and methods of proper learning to participants (Rahayuningsih & Muhtar, 2022). This matter was carried out by SDIT teacher Al Kawaakib to give footing to every individual student who differs from one another, to obtain program accuracy in learning. Learning interactions based on a learning atmosphere that provides opportunities for mutual interaction giving ideas, and opinions are also created in class. Condition class dynamic with discussion productive class in accordance theme and purpose learning to be achieved. The benefit of this pedagogical competency is to make students overall healthy in the humanizing aspect so that learning becomes an enjoyable process in their life journey. This can be seen from observations during the learning process, the teacher providing assistance chance participants educate actively look for knowledge and construct it in the form of innovative representation knowledge in the form of portfolio, products, etc performance in a *based learning project*.

Therefore an instructional model is needed in discussion competence pedagogy. The findings of this research use the relevant Dick and Carey (2005) model with components of the learning process (Ed Forest, 2015). Following results analysis Contribution of continuous professional development programs to pedagogical competence.

Table 3. Analysis of the contribution of continuous professional development programs to the pedagogical competence of SDIT Al Kawaakib teachers

Component Dick and Carey Model	Pedagogical Competence
Identify needs and determine goals	The teacher team reviews the government's nationally standardized learning outcomes to determine learning objectives.
Early learning analysis	The teacher team reviews learning achievements and classifies standard competencies.
Analysis of student behavior	The teacher team analyzed the findings of student behavior as initial information in designing content on learning strategies towards learning objectives.
Determine learning objectives	The teacher team collaborates to determine learning objectives by creating a flow of learning objectives.
Develop assessments with basic references	The teacher team develops assessments based on learning objectives
Determine learning strategies	The teacher team creates learning strategies contained in the module project as representative *project-based learning*.
Select and develop learning materials	The teacher team created TFP *(Terminology, Fact, and Principle)* based on the themes and learning content of the learning objectives.

Design and implement evaluation formative	The teacher team designs formative evaluations with modules and carries them out every day authentically to be followed up on the following day.
Design and implement evaluation formative	The teacher team designed a summative evaluation in the form of learning activities, namely *Student Led Conference, Entrepreneurship Expo, Student Collaboration Conference*.
Revision	The team of teachers identified a cycle of learning models based on educational report cards.

Based on Table 2 above, the continuous professional development program contributes to pedagogical competence according to the Dick and Carey learning model (Sabri & Rahim, 2020). The analysis is required to support the accuracy of the continuous professional development program progressively according to the current challenges that will be faced in the future in improving teachers' pedagogical competence (Muyunda, 2022).

The supporting findings from the results of the analysis above on the characteristics of pedagogical competence carried out by SDIT Al Kawaakib teachers are as follows (1) Identifying learning characteristics with diagnostic assessments for participants who have just joined the school to determine the overall condition cognitively and psychologically of students and every three months for students who are already in school (Nasution, 2022); (2) The teacher gives students the opportunity to convey opinions, ideas, and even stimulates students to reflect after learning and assessment between friends, so that active participation can provide developments in learning progress that are realized by the students themselves with the teacher as facilitator (Anil & Solutions, 2024); (3) Organizing classes by creating the unique potential of each student to create a growing perspective with teachers able to provide assistance and treatment that is appropriate to the diversity that exists in each class or between classes, so that children feel appreciated for their potential and develop according to their stage of development (McChesney & Cross, 2023); (4) The teacher provides observations by observing psychological conditions and behavior that arise in interactions in the classroom so that they can be anticipated or known early (Chadha, 2024); (5) The growth perspective built on teachers supports the development of positive potential by accepting students for their existing shortcomings to be developed into positive and meaningful individuals in the learning process designed by the teacher (Nghi et al., 2024); and (6) Teachers humanize students by providing a positive environment in the classroom and school culture so that they are treated as complete human beings with diversity who are celebrated as the potential that is developed and can grow in an environment that provides positive support for their growth and development (Susanto, Sofyan, et al., 2020).

Based on findings during field observations, teachers can create a varied learning atmosphere and experience for students by allowing students to find problems contextually, then carry out project planning, division of tasks, and a *timeline* for 1 month, and pour it out. in proposal form (Montiel & Gomez-Zermeño, 2021). This matter is in line with the statement Deassy & Endang (2018) state that this pedagogical ability can create a pleasant learning atmosphere with meaningful learning experiences. Planning, implementing, and evaluating learning reflects that teachers can understand the characteristics of students by appreciating each of their differences based on their stage of development (Kerkhoff, 2024).

Conclusion

Based on the discussion of research findings which are linked to relevant theoretical justifications, the following conclusions are obtained, (1) The strategy of a continuous professional development program was carried out for SDIT Al Kawaakib teachers through a learning community with a collaborative, participatory, and reflective approach; (2) The continuous professional development program contributes to the pedagogical competence of SDIT Al Kawaakib teachers.

The strategy of a continuous professional development program can be strengthened by a productive discussion with improvement literacy on pedagogical competence to support the dynamic of the learning community. The real action can be cultured in the learning community by sharing best practices between teachers to get the new learning design suitable for differentiated learning on pedagogical competence. It will be kept collaborative, participatory, and reflective approach consistently.

Related follow-up actions that can be taken in the activity component of the continuous professional development program are scientific publications, which are currently in the process of being designed to become a continuous professional development program supported by the school system. Scientific publications will support the development and improving the pedagogical competence of SDIT Al Kawaakib teachers to achieve learning effectiveness based on facts and data from the results of scientific publications.

References

Alfath, A., Azizah, F. N., & Setiabudi, D. I. (2022). Pengembangan Kompetensi Guru Dalam. *Jurnal SOSHUMDIK*, *1*(2), 42–50.

Alsina, Á., & Mulà, I. (2019). Advancing towards a transformational professional competence model through reflective learning and sustainability: The case of mathematics teacher education. *Sustainability (Switzerland)*, *11*(15). https://doi.org/10.3390/su11154039

Anggraeni, A. A. F., & Rachmajanti, S. (2020). *The Needs of Continuous Professional Development Perceived by Novice and Experienced Teachers*. 1664–1670.

Anil, G. R., & Solutions, N. D. (2024). Learner-Centric Education in Heterogeneous Learning Environments : Key Insights for Optimal Learning. *International Journal of Teacher Education and Professional Development*, *14*(1), 1–13. https://doi.org/10.4018/IJOPCD.335950

Bahriadi, B., Suriansyah, A., & Sulaiman, S. (2022). Continuous Professional Development Model to Improve Teacher Professional Competence. *International Journal of Social Science And Human Research*, *05*(12), 6010–6017. https://doi.org/10.47191/ijsshr/v5-i12-89

Bates, C. C., & Morgan, D. N. (2018). Seven Elements of Effective Professional Development. In *Reading Teacher* (Vol. 71, Issue 5, pp. 623–626). https://doi.org/10.1002/trtr.1674

Bergmark, U. (2020). Professional Development in Education Teachers ' professional learning when building a research-based education : context-specific , collaborative and teacher-driven professional development professional development ARTICLE HISTORY. *Professional Development in Education*, *00*(00), 1–15. https://doi.org/10.1080/19415257.2020.1827011

Chadha, A. (2024). Scaffolding Deliberations : *International Journal of Teacher Education and Professional Development*, *14*(1), 1–13. https://doi.org/10.4018/IJOPCD.356407

Creswell, J. W., & Creswell, J. D. (2018). *research design qualitative, quantitative, mix methods approaches*.

Ed Forest. (2015). Dick and Carey Instructional Model. In *Frameworks and Theories* (pp. 17–25).

Fajarwati, D., & Bakar, A. (2019). Rencana Pengembangan Keprofesian Berkelanjutan (Mppks - Pkb). *Kemendikbud*.

Haug, B. S., & Mork, S. M. (2021). Taking 21st century skills from vision to classroom : What teachers highlight as supportive professional development in the light of new demands from educational reforms. *Teaching and Teacher Education*, *100*, 103286. https://doi.org/10.1016/j.tate.2021.103286

Herman, T., Akbar, A., Farokhah, L., Febriandi, R., & … (2024). *Kecakapan Abad 21: Literasi Matematis, Berpikir Matematis, dan Berpikir Komputasi*. books.google.com. https://books.google.com/books?hl=en&lr=&id=-i7vEAAAQBAJ&oi=fnd&pg=PA115&dq=%22yeni+dwi+kurino%22&ots=WbPQA_DKcE&sig=Hbp464bvlTGzfgXadGLb1Kz9hSY

Hindriana, A. F., Setiawati, I., Solihin, N., & Sholikah, M. (2021). Pengembangan Kompetensi Guru dalam Menghadapi Program Merdeka Belajar. *Jurnal Pengapdian Masyarakat*, *04*, 254–260.

Ibragimov, A. . (2021). Developing the Professional Competence of Teachers As a Pedagogical Problem. *5th Global Congress on Contemporary Sciences & Advancements*, *May*, 333–338.

Imants, J., & Wal, M. M. Van Der. (2020). A model of teacher agency in professional development and school reform. *Journal of Curriculum Studies*, *52*(1), 1–14. https://doi.org/10.1080/00220272.2019.1604809

Kastawi, N. S., & Yovitha, Y. (2019). Pengembangan Keprofesian Berkelanjutan Guru untuk Meningkatkan Mutu Pendidikan. *Kelola Jurnal Manajemen Pendidikan*, *100*(2), 157–168.

Kemendikbud, D. J. G. dan T. K. (2018). *Pedoman Umum Prorgam Pengembangan Keprofesian Berkelanjutan*.

Kerkhoff, S. N. (2024). Internationalizing Teacher Education in the U . S . Results of the 2022 American Association of Colleges of Teacher Education Survey. *International Journal of Teacher Education and Professional Development*, *7*(1), 1–18. https://doi.org/10.4018/IJTEPD.356386

Kinser-Traut, J. Y., & Marx, R. W. (2022). Designing a Regional Teacher Professional Development Enterprise. *Frontiers in Education*, *7*(April). https://doi.org/10.3389/feduc.2022.862373

Kurino, Y. D. (2018). Problem Solving Dapat Meningkatkan Hasil Belajar Siswa Pada Materi Operasi Penjumlahan Dan Pengurangan Bilangan Bulat Di Kelas V Sekolah Dasar. *Jurnal Cakrawala Pendas*, *4*(1). https://doi.org/10.31949/jcp.v4i1.706

Lensi Hariyani, Yurniwati Yurniwati, & Ade Dwi Utami. (2024). The Effect Of Discovery Learning In Mathematics Learning On Computational Thinking In Terms Of Self-Regulated Learning (Srl) In Student. *Jurnal Elementaria Edukasia*, *7*(2), 2801–2814. https://doi.org/10.31949/jee.v7i2.9551

Liljenberg, M., & Wrethander, M. (2020). Professional Development in Education Leadership

for school improvement – linking learning to leading over time. *Professional Development in Education*, *00*(00), 1–15. https://doi.org/10.1080/19415257.2020.1752288

Madina, et. al. (2022). Self-development as a factor of professional growth of future teachers. *Cypriot Journal of Educational Sciences*, *17*(3), 903–919. https://doi.org/10.18844/cjes.v17i3.6984

McChesney, K., & Cross, J. (2023). How school culture affects teachers' classroom implementation of learning from professional development. *Learning Environments Research*. https://doi.org/10.1007/s10984-023-09454-0

Molope, M., & Oduaran, A. (2020). Evaluation of the community development practitioners' professional development programme: CIPP model application. *Development in Practice*, *30*(2), 194–206. https://doi.org/10.1080/09614524.2019.1650894

Montiel, H., & Gomez-Zermeño, M. G. (2021). Educational challenges for computational thinking in k–12 education: A systematic literature review of "scratch" as an innovative programming tool. *Computers*, *10*(6). https://doi.org/10.3390/computers10060069

Morris, T. H. (2023). Self-directed learning : A fundamental competence in a rapidly changing world Author (s): Thomas Howard Morris Source : International Review of Education / Internationale Zeitschrift für Published by : Springer Stable URL : https://www.jstor.org/stable/. *International Review of Education*, *65*(4), 633–653.

Muyunda, G. (2022). Continuous professional development: Perceptions of secondary school teachers in Zambia. *Electronic Journal of Education, Social Economics and Technology*, *3*(1), 1–7. https://doi.org/10.33122/ejeset.v3i1.47

Nahdi, K., Atiaturrahmaniah, A., Sururuddin, M., Yunitasari, D., Suhartiwi, S., & Wijaya, H. (2021). Pengembangan Keprofesian Berkelanjutan Guru SD Berdasarkan Kesulitan Analitis Belajar Bahasa Indonesia Menurut CPD Framework. *Research and Development Journal of Education*, *7*(2), 330. https://doi.org/10.30998/rdje.v7i2.9705

Nasution, S. W. (2022). Assesment Kurikulum Merdeka Belajar Di Sekolah Dasar. *Prosiding Pendidikan Dasar*, *1*, 135–142. https://doi.org/10.34007/ppd.v1i1.181

Nghi, T. T., Thi, L., & Anh, Q. (2024). Promoting Student-Centered Learning Strategies via AI Chatbot Feedback and Support : A Case Study at a Public University in Vietnam. *International Journal of Teacher Education and Professional Development*, *7*(1), 1–25. https://doi.org/10.4018/IJTEPD.356403

Ostinelli, G., & Crescentini, A. (2021). Policy , culture and practice in teacher professional development in five European countries . A comparative analysis. *Professional Development in Education*, *00*(00), 1–17. https://doi.org/10.1080/19415257.2021.1883719

Popova, A., Evans, D. K., Breeding, M. E., & Arancibia, V. (2022). Teacher Professional Development around the World: The Gap between Evidence and Practice. *World Bank Research Observer*, *37*(1), 107–136. https://doi.org/10.1093/wbro/lkab006

Rahayuningsih, Y. S., & Muhtar, T. (2022). Pedagogik Digital Sebagai Upaya untuk Meningkatkan Kompetensi Guru Abad 21. *Jurnal Basicedu*, *6*(4), 6960–6966. https://doi.org/10.31004/basicedu.v6i4.3433

Rahman, A. R. (2021). High Participation, Low Impact: The Challenge for Teacher Professional Development in Indonesia. *Indonesian Journal of Learning Education and Counseling*, *3*(2), 206–217. https://doi.org/10.31960/ijolec.v3i2.961

Rohman, H. (2020). Pengaruh Kompetensi Guru Terhadap Kinerja Guru. *Jurnal MADINASIKA*

Manajemen Dan Keguruan, *1*(2), 92–102.

Sabri, S., & Rahim, M. A. (2020). Integration of Dick and Carey design in string ensemble class instructional material design. *International Journal of Innovation, Creaivity and Change*, *14*(11), 359–388.

Safrizal, S., Nurhafizah, N., Yulia, R., & Husnani, H. (2022). Analysis of Guru Penggerak Programs as Sustainable Professional Development for Teachers. *AL-ISHLAH: Jurnal Pendidikan*, *14*(2), 2135–2142. https://doi.org/10.35445/alishlah.v14i2.829

Sari, K. P., Marsidin, S., & Sabandi, A. (2020). Kebijakan Pengembangan Keprofesian Berkelanjutan (PKB) Guru. *Edukatif : Jurnal Ilmu Pendidikan*, *2*(2), 113–120. https://doi.org/10.31004/edukatif.v2i2.110

Srichom, S. (2019). Framework to Measure Effectiveness of Teacher Professional Development. *Journal of Education and Practice*, *10*(36), 38–45.

Srinivasacharlu, A. (2019). Continuing Professional Development (CPD) of Teacher Educators in 21st Century. *Shanlax International Journal of Education*, *7*(4), 29–33. https://doi.org/10.34293/education.v7i4.624

Sulaiman, J., & Ismail, S. N. (2020). Teacher competence and 21st century skills in transformation schools 2025 (TS25). *Universal Journal of Educational Research*, *8*(8), 3536–3544. https://doi.org/10.13189/ujer.2020.080829

Susanto, R., Rozali, Y. A., & Agustina, N. (2020). *Pedagogic Competence Development Model: Pedagogic Knowledge and Reflective Ability*. 422(Icope 2019), 19–23. https://doi.org/10.2991/assehr.k.200323.082

Susanto, R., Sofyan, H., Rozali, Y. A., Nisa, M. A., Umri, C. A., Nurlinda, B. D., Oktafiani, O., & Lestari, T. H. (2020). Pemberdayaan Kompetensi Pedagogik Berbasis Kemampuan Reflektif Untuk Peningkatan Kualitas Interaksi Pembelajaran di SDN Duri Kepa 03. *International Journal of Community Service Learning*, *4*(2), 125–138. https://doi.org/10.23887/ijcsl.v4i2.25657

Susiani, I. R., & Abadiah, N. D. (2021). Teacher Quality in Improving the Quality of Education in Indonesia. *Modeling: Jurnal Program Studi PGMI*, *8*(2), 292–298.

Toshtemirovich, R. Z. (2019). Development of Professional Competence of Educator. *European Journal of Research and Reflection in Educational Sciences*, *7*(10), 99–106.

Trio, D., Udin Syaefudin Sa'ud, Mubiar Agustin, & Johar Permana. (2023). Pengaruh Motıvası Kerja Dan Kedısıplınan Terhadap Kınerja Guru Sekolah Dasar Negerı dı Kabupaten Lebak. *Jurnal Elementaria Edukasia*, *6*(2), 997–1005. https://doi.org/10.31949/jee.v6i2.5231

Wulandari, S., & Supriyoko, S. (2022). Implementasi Pelaksanaan Program Pengembangan Keprofesian Berkelanjutan (PKB) Guru Sekolah Dasar. *Media Manajemen Pendidikan*, *5*(1), 1–12. https://doi.org/10.30738/mmp.v5i1.11593

Yin, R. K. (2018). *Case study research and aplicatioms*.

Yonanda, D. A., Haryanti, Y. D., Kurino, Y. D., Rosidah, A., & Sofiasyari, I. (2023). Local Wisdom-Based Pictorial Teaching Materials: A Strategy for Boosting Ecoliteracy in Elementary School Students. *Profesi Pendidikan Dasar*, 98–113. https://doi.org/10.23917/ppd.v10i2.4752

Yonanda, D. A., Yuliati, Y., Febriyanto, B., Saputra, D. S., & Nahdi, D. S. (2021). Pengaruh Model Ecoliteracy Terhadap Sikap Ilmiah Di Sekolah Dasar. *Jurnal Cakrawala Pendas*, *7*(1).

https://doi.org/10.31949/jcp.v7i1.2430

Zainuddin, Z., Suryadi, S., & Fuad, N. (2019). Program Evaluation of Continuing Professional Development at Teacher Working Group. *International Journal for Educational and Vocational Studies*, *1*(2), 130–137. https://doi.org/10.29103/ijevs.v1i2.1524

Zhang, X., Admiraal, W., & Saab, N. (2021). Teachers' motivation to participate in continuous professional development: relationship with factors at the personal and school level. *Journal of Education for Teaching*, *47*(5), 714–731. https://doi.org/10.1080/02607476.2021.1942804