

Evaluation of the professional development stake model for geography teachers in Jambi city

Mega Nurhidayanti^{1*}; Muhammad Nursa'ban¹; Nor Kalsum Mohd Isa²

¹Universitas Negeri Yogyakarta, Indonesia

²Universiti Pendidikan Sultan Idris, Malaysia

*Corresponding Author. E-mail: meganurhidayanti.2021@student.uny.ac.id

ARTICLE INFO

ABSTRACT

Article History

Submitted:

15 January 2024

Revised:

01 June 2024

Accepted:

04 June 2024

Keywords

Geography teacher performance; innovative work; stake countenance model; continuous professional development; scientific publications

The research aims to assess the Continuous Professional Development (CPD) of geography teachers, addressing: 1) the CPD profile at each level of the stake evaluation model and 2) recommendations based on the Minister of State Regulation Utilization of State Apparatus and Bureaucratic Reform Number 16 of 2009, regarding the Teacher's Functional Department and Credit Score Article 11, which mandates teachers to engage in self-development activities, scientific publications, and innovative works over the past 10 years (2012-2022). The research employs a quantitative descriptive approach utilizing the Stake Model Evaluation, covering the antecedent (planning), transaction (process), and outcomes (results) levels. Primary data collection involves questionnaires supplemented by observations, interviews, and documentation as needed. Data analysis utilizes a percentage approach at each level. Research respondents, selected through disproportionate Random Sampling, include 19 schools in Jambi City, comprising a total of 32 Geography Teachers. Data presentation follows a quantitative descriptive approach. The research findings indicate that: 1) the CPD profile of geography teachers at the antecedent (planning) level is in the good category (79%), the transaction (process) level is also in the good category (84%), while the outcomes (results) level is in the less category (13%). 2) Recommendations at the antecedent level include engaging in enrichment activities. Transaction-level recommendations suggest improving digital skills and supplementing infrastructure facilities with CPD-related books. Outcome-level recommendations propose that the Education Department implement continuous teacher construction. Schools are encouraged to manage teacher's academic qualifications. Geography teachers are urged to contribute to educational works.

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To cite this article (in APA style):

Nurhidayanti, M., Nursa'ban, M., & Mohd Isa, N. K. (2024). Evaluation of the professional development stake model for geography teachers in Jambi city. *Jurnal Penelitian dan Evaluasi Pendidikan*, 28(1), 61-78 doi: <https://doi.org/10.21831/pep.v28i1.70724>

INTRODUCTION

According to Law of the Republic of Indonesia Number 14 of 2005, teachers are professional educators with the main task of educating, teaching, guiding, directing, training, assessing and evaluating students in early childhood education through formal, primary, and secondary education. Therefore, it is necessary to assess teacher performance to ensure a quality learning process at all levels of education (Dermawati, 2013). The main focus of this assessment is to create a professional environment for teachers, in line with the provisions explained in the Regulation of the Minister of State for the Empowerment of State Apparatus and Bureaucratic Reform Number 16 of 2009. This regulation not only functions as a guideline for listening to teacher performance but also as a basis for sustainable professional development in the school environment. In this context, performance assessment is not an additional burden for teachers but is a proactive step to increase teacher competence. In addition, this can improve the quality

of the education system overall, providing a solid foundation for continuous improvement in the world of education. Regulation of the Minister of State for Empowerment of State Apparatus and Bureaucratic Reform Number 16 of 2009 concerning Teacher Functional Positions and Credit Scores. Article 11 mandates that teachers must carry out Continuous Professional Development (CPD) activities, which also apply to geography teachers. CPD is teacher competency development, which is carried out according to needs, gradually and continuously, to improve professionalism. Judging from the situation in the field that the researcher obtained from interviews with the Chair of the High School Geography Subject Teachers' Conference (STC) in Jambi City, where (1) the majority of Geography Teachers in Jambi City (more than 50%) have not been involved in CPD activities; (2) There are teachers who teach geography who do not have a geographic background because there is no geography department at universities in Jambi City; (3) Teachers are so preoccupied with the teaching and learning process that they do not have time to export themselves to CPD activities. The information obtained from the evaluation not only functions as a reflection on the achievement of objectives but also as a basis for selecting the most appropriate decision alternative to improve and increase the effectiveness of the program in the future. An evaluation is needed regarding the implementation of CPD to find out the performance results of Geography Teachers in Jambi City, which can be used as a basis for consideration for future program implementation. Taking into account the problems above, researchers conducted research to obtain the CPD profile of geography teachers in Jambi City in the last ten years (2012-2022) and recommendations to the education department, schools and geography teachers.

The term evaluation comes from the English language, which means assessment. In general, evaluation is a systemic process that determines the level of success of a program (Ngalimun, 2018). Program evaluation is carried out so that education administrators know how far the program targets have been achieved in accordance with the objectives determined at the beginning of program planning. There are four possible policies that can be implemented based on the results of implementing a program, namely (1) Stopping the program because it cannot be implemented as expected, (2) Revise the program because there are parts that do not meet expectations, (3) Continuing the program because the implementation of the program shows that it is running according to expectations, and (4) Disseminate the program because the program was successful so it would be perfect if it was implemented again in another place and time (Arikunto & Jabar, 2014).

Teacher performance is the ability demonstrated by teachers in carrying out their duties or work. Performance is said to be good and satisfactory if the results achieved are in accordance with established standards (Abdullah, 2013). Teacher performance is the factor that determines the quality of learning most (Suprihatiningrum, 2016). This confirms that educational staff, including teachers, need to have performance standards that are visible when they carry out their duties (Pianda, 2018). Knowledge in teacher education is an insight into developing teacher values as professionals (Mead, 2019). Students are the main reason why the status and professional development journey of teachers is so important. The educated had the right to be taught by teachers of high status (Clarke & Menter, 2016). Teacher educators' professional development is shaped by individual interests and skills (Vanderlinde et al., 2021).

Based on the Regulation of the Minister of State for Empowerment of State Apparatus and Bureaucratic Reform Number 16 of 2009, in order to create good teacher performance, there need to be elements of CPD activities, namely scientific publications, innovative work, and self-development by teachers. Self-development is an effort to increase one's professionalism so that one has competencies that are in accordance with national education policies, as well as developments in science, technology or the arts (Dermawati, 2013). Self-development is a person's activity in mastering pedagogical knowledge and improving professional abilities and important professional qualities (Mirzagitova & Akhmetov, 2015). Self-development activities

in CPD are carried out through functional education and training (training) and/or through collective teacher activities (Wijaya et al., 2023). Teacher self-development is very necessary to provide high-quality teaching (Doghonadze, 2016). A teacher's professional self-development is linked to the concept of lifelong education (Smolinska & Dzyubynska, 2020). Scientific publications are scientific papers that have been published as a form of teacher contribution to the development of the world of education in general (Dermawati, 2013). Scientific publications to disseminate new research findings (Setiyo, 2017). Scientific publications consist of (1) presentations at scientific forums, (2) research results or scientific ideas in the field of formal education and (3) publications of textbooks, enrichment books and/or teacher guides (Wijaya et al., 2023). Currently, most teacher research comes from developed countries such as America, Turkey, Australia, England and Spain. Developing countries such as China, Brazil, South Africa, and Thailand have quite good rankings (Ye et al., 2019). The training teachers need skills in compiling modules and writing scientific articles from classroom action research (Rahyasih et al., 2020). The activities can be done individually or collaboratively (Richards, 2017). By implementing CPD, teachers can explore their abilities and report the results with the aim of increasing their pedagogical competence and professionalism (Indrawati & Octoria, 2016). Innovative work, namely: (1) Finding appropriate technology; (2) Finding/creating works of art; (3) Create/modify learning/display/practicum tools; (4) Following the development of standards, guidelines, questions, and the like (Dermawati, 2013). Teachers are a professional group that requires the development of innovation for its successful implementation (Gkontelos et al., 2023).

The ability of geography teachers to manage learning will determine the level of success and the learning outcomes of their students (Nursa'ban & Abe, 2019). Subject matter expertise for teachers is a professional compass that guides teachers (Brooks, 2016). Building and supporting innovative work behaviour with leadership and coworkers has a high impact on educators (Karavasilis, 2019). The combination of the principal's leadership behaviour and fair actions towards teachers has an influence on teachers' innovative work behaviour (Khaola & Oni, 2020). A teacher who has a high sense of innovation will be more confident in expressing ideas that can improve his performance (Asiyah et al., 2021)-holding courses to encourage creativity and innovation in the educational environment (Johari et al., 2021).

Teachers who are loyal to their work will try to improve their professional abilities. The efforts made by teachers can be seen in the activities they participate in (Rusman, 2011). To carry out their duties professionally, an educator must meet ability or competency requirements. Teacher competency is the teacher's ability to carry out their duties and obligations appropriately and responsibly (Febriana, 2019). Competency is demonstrated by accountable performance (Sanjaya, 2006). Based on Republic of Indonesia Law Number 14 of 2005 concerning Teachers and Lecturers, article 10 paragraph (1) states that "Teacher competence includes pedagogical competence, personality competence, social competence and professional competence".

There are several previous studies that are relevant to this research, which can be used as reference and comparison material. The first is with the research title Evaluation of the Program for Increasing the Professionalism of High School Geography Teachers through Subject Teacher Deliberations (Nursetianti et al., 2022). The second is with the research title Evaluation of the High School Physics Teachers' Deliberation Program in Pangkep Regency (Arafah et al., 2020). The third is with the research title Performance Analysis of High School Geography Teachers in South Solok Regency (Dilla, 2022). There are differences in the research carried out, namely: (1) The variables studied regarding the performance of Geography Teachers include self-development, scientific publications and innovative work; (2) The location of the research is in Jambi City; (3) Using the Stake Countenance model evaluation approach, (4) The sample used was Geography Teachers at Public and Private High Schools in Jambi City.

The research variable, namely the Geography Teacher's performance, consists of self-development, scientific publications, and the teacher's innovative work. Based on the Regulation of the Minister of State for Empowerment of State Apparatus & Bureaucratic Reform Number 16 of 2009 Article 11, self-development includes functional education and training activities, collective activities of teachers as resource persons/speakers/instructors, as well as workshop or seminar activities as participants. Scientific publications include scientific publications on research results or innovative ideas in the field of formal education, popular scientific articles, and publications in the form of textbooks, enrichment books, and teacher guides. Innovative work includes finding appropriate technology in education or learning, creating works of art, making or modifying teaching/demonstration/practicum tools as well as following the development of standards, guidelines, questions and the like.

RESEARCH METHOD

This research is located in Jambi City and carried out in February 2023. According to the District Central Bureau of Statistics, Jambi City to the north, west, south and east borders the Muaro Jambi (BPS, 2022)-a type of descriptive evaluation research with quantitative methods. The evaluation method used is the Countenance Evaluation Model by Stake. There are two primary activities, namely, description related to the expected goals and judgment related to the reality in the field. There are three stages, namely: (1) antecedent (planning) refers to basic information related to conditions that existed before program implementation; (2) transaction (process) to see whether the program being implemented is in accordance with the program plan; (3) outcomes (results) relate to what is achieved with the program (Kusuma, 2016). Stake says that the evaluator will assess an educational program, making a relative comparison between one program and another or an absolute comparison (one program with a standard) (Sukardi, 2008). Evaluation of the Countenance Stake model, which measures the implementation of teacher performance that occurs in the field with the standards of the Minister of State for the Empowerment of State Apparatus and Bureaucratic Reform Regulation Number 16 of 2009, concerning Teacher Functional Positions and Credit Scores. Article 11 mandates that teachers must carry out CPD activities, which should be the criteria for determining success. So, this program has legality or a clear legal basis. The population in this study consisted of high school geography teachers, totalling 46 high schools, consisting of 14 public high schools and 32 private high schools in Jambi City. In sampling theory, it is said that the smallest sample that can represent a normal distribution is 30 (Tika, 2005). Sampling was carried out using Disproportional Random Sampling. This method produces the same number of samples for each population subgroup (Azwar, 2013). Information on the schools used as research locations is presented in Table 1. The samples in this study were differentiated based on the level of school accreditation, namely public and private high schools with representatives of school accreditation A, B, and C. Of the 46 high schools in Jambi City, the sample taken was 19 schools consisting of 8 public high schools and 11 private high schools with a total of respondent 32 Geography Teachers.

The validity of the instrument was consulted with three lecturers (expert judgment) from the Geography Education Department, Masters Program, Yogyakarta State University. The instrument testing is carried out by means of product-moment correlation tests (Sugiyono, 2007), and to measure the reliability of the instrument, the Cronbach's Alpha technique was used (Sugiyono, 2007). Guilford reliability correlation coefficient categories, namely: $0.80 < r_{11} \leq 1.00$: very high reliability, $0.60 < r_{11} \leq 0.80$: high reliability, $0.40 < r_{11} \leq 0.60$: moderate reliability, $0.20 < r_{11} \leq 0.40$: low reliability, $0.00 < r_{11} \leq 0.20$: very low reliability (Riyani et al., 2017).

Table 1. School used as research location

No.	School Accreditation	School Name	Number of Geography Teachers
1	PUBLIC SENIOR HIGH SCHOOL – A	SMAN 1	2
		SMAN 2	3
		SMAN 3	2
		SMAN 6	3
		SMAN 8	5
2	PUBLIC SENIOR HIGH SCHOOL – B	SMAN 7	2
3	PUBLIC SENIOR HIGH SCHOOL – C	SMAN 12	2
		SMAN 13	4
4	PRIVATE HIGH SCHOOL – A	SMAIT Al- Azhar	1
		SMAS Purnama 2	1
		SMAS Al Falah	1
		SMAS Ferdy Ferry	1
		SMAS Xaverius 1	1
5	PRIVATE HIGH SCHOOL – B	SMAS Dharma Bhakti 4	1
		SMAS Jambi IX Lurah	1
		SMAS PGRI 2	1
6	PRIVATE HIGH SCHOOL – C	SMAS Dua Mei	1
		SMAS Muhammadiyah	0 (There is only a science major)
		SMAS Insan Madani	0 (There is only a science major)
Total			32

Based on the results of the validity and reliability analysis of the instrument that was carried out, the results of the instrument are declared valid, and based on the instrument reliability test, Cronbach's Alpha value of 0.843 is in the very high category. Data collection techniques include observation, interviews, questionnaires, documentation and literature study. Observations were carried out to collect data on the number of public and private high schools in Jambi City, which was obtained at Badan Akreditasi Nasional Sekolah/ Madrasah (BANSM, 2023). Interviews were conducted with the Chair of the High School Geography STC in Jambi City to collect initial data regarding the performance of geography teachers. Questionnaires are used to obtain teacher profiles and performance data documentation in the form of photographs from the results of questionnaire data collection. Literature studies sourced from libraries include textbooks, journals and previous research results. The data analysis technique is descriptive quantitative by means of percentage analysis of the antecedent, transaction and outcomes processes and then concluded based on the criteria of each evaluation stage. Data calculation uses a Likert Scale; the ranking value for each answer or response is added up to get a total value (Soehartono, 2008). Each answer choice has a different weight, and all respondents' answers are added up based on their weight to produce a single score regarding a particular topic (Morissan, 2012). The formula used in analyzing the Geography Teacher's performance instrument is a descriptive analysis of the Arikunto percentage (Arikunto S., 2010).

FINDINGS AND DISCUSSION

Respondent characteristics are teacher profiles which include teacher name code, age, gender, school name. Data analysis tabulation is presented in Table 2. In analyzing research studies, data analysis is carried out in a congruent manner (analyzing laterally) on antecedents, transactions and outcomes, and after that, a contingency analysis is carried out (analyzing downwards).

Table 2. Biodata of Geography Teachers in Jambi City

No.	Teacher Code Name	Age	Gender	School
1	teacher_1	42	Woman	SMAN 1
2	teacher_2	53	Man	SMAN 1
3	teacher_3	23	Woman	SMAN 2
4	teacher_4	45	Woman	SMAN 2
5	teacher_5	41	Woman	SMAN 2
6	teacher_6	58	Man	SMAN 3
7	teacher_7	27	Man	SMAN 3
8	teacher_8	53	Woman	SMAN 6
9	teacher_9	56	Woman	SMAN 6
10	teacher_10	31	Woman	SMAN 6
11	teacher_11	29	Woman	SMAN 7
12	teacher_12	38	Woman	SMAN 7
13	teacher_13	31	Man	SMAN 8
14	teacher_14	40	Woman	SMAN 8
15	teacher_15	25	Woman	SMAN 8
16	teacher_16	24	Woman	SMAN 8
17	teacher_17	55	Man	SMAN 8
18	teacher_18	30	Woman	SMAN 12
19	teacher_19	43	Woman	SMAN 12
20	teacher_20	30	Woman	SMAN 13
21	teacher_21	30	Man	SMAN 13
22	teacher_22	29	Woman	SMAN 13
23	teacher_23	28	Woman	SMAN 13
24	teacher_24	26	Woman	SMAIT Al-Azhar
25	teacher_25	38	Woman	SMAS Purnama 2
26	teacher_26	35	Woman	SMAS Al Falah
27	teacher_27	30	Woman	SMAS Ferdy Ferry Putra
28	teacher_28	33	Woman	SMAS Xaverius 1
29	teacher_29	52	Woman	SMAS Dharma Bhakti 4
30	teacher_30	31	Woman	SMAS Jambi IX Lurah
31	teacher_31	29	Man	SMAS PGRI 2
32	teacher_32	26	Man	SMAS Dua Mei

The implementation of CPD can be used as a basis for considering whether the planning or preparation of CPD, the process of implementing CPD, and the targeted results have been implemented well in order to facilitate teachers in achieving the CPD program.

Table 3. Recapitulation Evaluation Results of the Three Research Focus Components

Expected Conditions (<i>Intended</i>)		Actual Situation (<i>Observation</i>)	
<i>Antecedent/Planning</i>	76-90 %	Suitability	79% (Good)
Understanding of the CPD program	(Good)	↔	
Gap			Gap
<i>Transaction/Process</i>	76-90 %	Suitability	84% (Good)
Supporting the success of the CPD program	(Good)	↔	
Gap			Gap
<i>Outcomes/Results</i>	76-90 %	Suitability	13%
Evaluation of the implementation of the CPD program	(Good)	↔	(Not enough)
Average			58% (Currently)

Based on the results of the analysis presented in Table 3 that the success rate of program implementation is in the medium category, with an overall percentage of 58%. Evaluation is

said to be good if it is in the very good, good and sufficient categories. Meanwhile, assessment items that are in the moderate and poor categories need to be revised.

The aspect evaluated in the antecedent stage is the geography teacher's understanding of the CPD program in the form of concepts, objectives, functions and benefits of the program. Based on [Table 3](#), the antecedent stage achieved a percentage result of 79% in the good category. This figure shows that the antecedent stage regarding the geography teacher's understanding of the CPD program is in accordance with the standard criteria and has been fulfilled.

The aspects evaluated in the transaction stage are those supporting the success of the CPD program in the form of teacher ability and readiness, infrastructure and support for program implementation. Based on [Table 3](#), the transaction stage based on the average percentage achieved a percentage result of 84% in the good category. This figure shows that the transaction stage regarding supporting the success of the program is by the standard criteria and has been fulfilled.

The aspect evaluated in the outcomes stage is the evaluation of the implementation of the CPD program in the form of self-development, scientific publications and innovative work. Based on [Table 3](#), the outcomes stage based on the average percentage reaches a percentage result of 13% in the poor category. This figure shows that the outcomes stage regarding the evaluation of the implementation of the CPD program is not in accordance with standard criteria and must be given consideration. The number of geography teachers who have carried out self-development based on post-certification education is four teachers (12%). In comparison, the number of teachers who have not done so is 28 teachers (88%). Geography teachers who have carried out self-development based on functional education and training (training) are eight teachers (25%), while teachers who have not done so are 24 teachers (75%). Geography teachers who have carried out self-development based on activities as resource persons/speakers/instructors are three teachers (9%), while teachers who have not done so are 29 teachers (91%). Geography teachers who have carried out self-development based on Workshop/Seminar activities as participants are seven teachers (22%), while teachers who have not done so are 25 teachers (78%). There are two teachers (6%) of geography teachers who have carried out self-development based on community service activities as committee members, members of community organizations, and speakers/trainers/resources for community activities, while there are 30 teachers (94%) who have not done so. There are ten geography teachers who have made scientific publications based on research results in the field of education, while there are 22 teachers (69%) who have not made them. The number of geography teachers who have made scientific publications based on presentations on popular scientific forums is two teachers (6%), while the number of teachers who have not made them is 30 (94%). Two teachers (6%) of geography teachers have made scientific publications based on publications on textbooks, enrichment books and teacher guides, while 30 teachers (94%) have yet to make them. The number of geography teachers who already have innovative work is three teachers (9%), while the number of teachers who do not have innovative work is 29 teachers (91%).

Discussion

Based on [Figure 1](#), there is an increase between the antecedent stage and the transaction stage. This increase occurred because teachers' understanding and support for success were carried out well. Even though at the transaction stage, the aspects required for implementation were available at 84%, outcomes were not yet achieved in accordance with the program objectives and did not meet the criteria in accordance with the policies issued by regulatory standards.

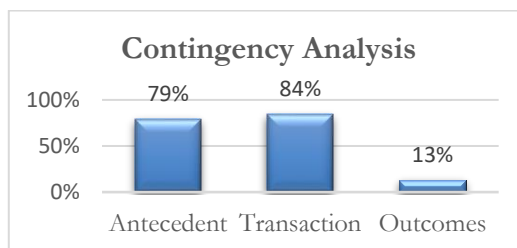


Figure 1. Follow-up of Evaluation Results based on Contingency Analysis

This means that 13% of teachers have participated in the CPD program activities held, and the remaining 87% have not participated. This data confirms the results of an initial interview with the Chair of the High School Geography STC in Jambi City, who said that more than 50% of geography teachers do not carry out CPD activities.

Table 4. CPD Program Evaluation Results Data

Stage	Aspect	Description Matrix		Judgement Matrix	
		Intens	Observations	Standards	Judgement
Antecedent (Planning)	Understanding of the CPD program design	CPD concept, objectives, functions and benefits	79 % (Good)	76-90 % (Good)	Already appropriate
Transaction (Process)	Supporting the success of the CPD program	Teacher Ability and Readiness	93% (Very good)	76-90 % (Good)	Already appropriate
		Infrastructure	84% (Good)	76-90 % (Good)	Already appropriate
		Supporting Program Implementation	75% (Enough)	76-90 % (Good)	Already appropriate
Outcomes (Results)	Evaluation of the implementation of the CPD program	Self-Development	15% (Not enough)	76-90 % (Good)	Not yet appropriate, consideration given
		Scientific Publications	14% (Not enough)	76-90 % (Good)	Not yet appropriate, consideration given
		Innovative Work	9% (Not enough)	76-90 % (Good)	Not yet appropriate, consideration given

It can be seen in Table 4 that the observation matrix describes antecedents (understanding of the CPD program), transactions (supporting the success of the CPD program), and outcomes (evaluation of the implementation of the CPD program). The results of the contingency and congruence analysis provide findings regarding the performance of high school Geography Teachers in Jambi City regarding the implementation of the CPD program. When program planning runs optimally, and program success supporters carry out their duties in accordance with standards, the final results of program implementation show that it cannot run optimally. This means there are obstacles to its implementation. This happened because there was a discrepancy between the implementation of the CPD in the field and the expected regulatory standards.

The results of the analysis at the antecedent stage include aspects of understanding the design of the CPD program, namely understanding geography teachers, in this case, the concept, objectives, functions and benefits of the program regarding the Regulation of the Minister of State for the Empowerment of State Apparatus and Bureaucratic Reform Number 16 of 2009,

concerning Functional Positions of Teachers and Numbers The credit is that Article 11 mandates that teachers must carry out CPD activities. Based on Table 4, the antecedent stage of teacher understanding is classified as good, with a percentage of 79%. So, it can be concluded that the teacher's understanding of the CPD program has met the standard criteria. The recommendation at the antecedent stage is to carry out enrichment activities to increase the depth and expansion of material related to CPD so that teachers gain more detailed and comprehensive knowledge. Enrichment activities can be carried out through group study in the form of discussions and individual independent study.

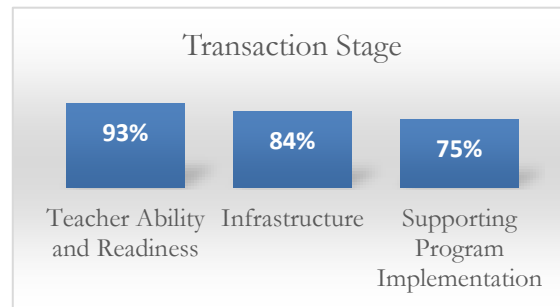


Figure 2. Transaction (process) Stage

The results of the analysis at the transaction stage (see Figure 2) include aspects supporting the success of the CPD program, namely teacher ability and readiness, infrastructure and support for program implementation. The sub-indicator of teacher ability and readiness consists of 6 statement items in the very good category (93%), infrastructure consists of 5 statement items in the very good category (84%), and program implementation support consists of 7 statement items in the good category (75%). So, the average percentage of the three sub-indicators at the transaction stage to support program success is 84% in the very good category.

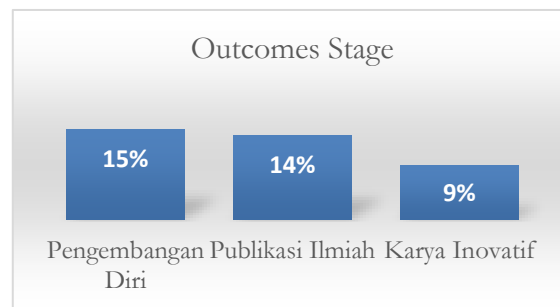


Figure 3. Outcomes (results) Stage

The transaction stage in supporting the success of CPD program activities has been fulfilled and is running well. Recommendations at the transaction stage are based on (1) Teacher ability and readiness. Teachers must be able to master technology to improve their digital skills so that they have creative and innovative learning abilities to produce many new innovations. (2) Regarding facilities and infrastructure, there is still a shortage of books on self-development, scientific publications, and innovative work. (3) Supporting implementation, the STC organization is still not optimal. These findings are supported by the results of an interview by the Chair of the High School Geography STC in Jambi City to researchers that "STC activities do not function optimally in disseminating written work so that no one motivates how important these activities are", scheduling training and outreach activities regarding the CPD

program, supervision by certain parties, as supporters, controllers and mediators in efforts to improve teacher performance.

The [Figure 3](#) shows the results of the analysis at the outcomes stage which includes aspects of evaluating programme implementation, namely self-development, scientific publications and innovative work. Based on [Table 3](#), the outcomes stage regarding the implementation of the CPD program activities for geography teachers in Jambi City from 2012-2022 is classified as poor with a percentage of 13%. The percentage results are obtained from the overall score, which is then averaged to obtain conclusions. The implementation of the program has not yet achieved the desired target value, so it is still necessary to consider suggestions for improvement in order to produce better outcomes. So, it can be concluded that the implementation of the CPD program has not met the standard criteria.

Table 5. Teachers Who Take Post-Teacher Professional Education Program

No	Accreditation	School Name	Teacher Name	Information
1	A	SMAN 1	teacher_1	S2
2	A	SMAN 1	teacher_2	S2
3	A	SMAN 2	teacher_4	S2
4	A	SMAN 6	teacher_8	S1

Based on the research results, 4 Geography Teachers (see [Table 5](#)) who have carried out self-development based on post-Teacher Professional Education Program are teacher_1, teacher_2, teacher_4, and teacher_8.

Table 6. Teachers Who Take Part in Functional Education and Training

No	Accreditation	School Name	Teacher Name	Year
1	A	SMAN 1	teacher_2	2013, 2015
2	A	SMAN 2	teacher_4	2015, 2016, 2017, 2018, 2019
3	A	SMAN 2	teacher_5	2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022
4	A	SMAN 6	teacher_8	2009, 2014, 2015, 2017
5	B	SMAN 7	teacher_12	2019, 2021, 2022
6	C	SMAN 13	teacher_20	2017, 2018
7	A	SMAS Xaverius 1	teacher_28	2017
8	B	SMAS PGRI 2	teacher_31	2020

Based on the research results on [Table 6](#), the 8 Geography Teachers who have carried out self-development based on the functional education and training (training) that they have attended are mostly of a general nature that can be followed by teachers of subjects other than geography. Functional Education and Training specifically for geography subjects was attended by 3 teachers, namely teacher_4 in the form of Learning Competency Improvement Program Training for High School Geo Teachers, teacher_5 in the form of STC Development for High School Level Geography Subjects in Jambi Province and National Science Competition (NSC) Teacher Training in the Field of Geography throughout Indonesia, and teacher_12 in the form of STC Guidance at High School Level for Geography Subjects throughout Jambi Province in the Mutendik Program, Guidance and assistance activities for writing National High School Standardized School Examination questions for Geography Subjects throughout Jambi Province in the High School Education Program, Training for National Science Competition Geography Teachers throughout Indonesia, and teacher_28, namely Competency Training High School Level Teachers for Geography Subjects in Jambi Province in the Quality Improvement Program for Educators and Education Personnel.

Table 7. Teachers Who Take Part in Activities as Resource Persons/Speakers/Instructors

No	Accreditation	School Name	Teacher Name	Name of Activity	Year
1	A	SMAN 1	teacher_2	STC Geography	until now
		SMAN 1	teacher_2	NSC Socialization	2017
		SMAN 1	teacher_2	Anti Corruption	2022
2	B	SMAN 7	teacher_12	Learning Committee	2019
		SMAN 7	teacher_12	Bullying	2020
3	A	SMAS Xaverius 1	teacher_28	IHT Independent Cur.	2020

Table 7 shows that 3 Geography Teachers who have carried out self-development based on activities as Resource Persons/Speakers/Instructors are mostly general in nature and can be followed by teachers of subjects other than geography. Activities as a resource person/speaker/instructor specifically for geography subjects were only attended by one teacher, namely teacher_2. Teacher_2 is the head of the Geography STC in Jambi City.

Table 8. Teachers Who Take Part in Workshop/Seminar Activities as Participants

No	Accreditation	School Name	Teacher Name	Year
1	A	SMAN 2	teacher_4	2018,2019
2	A	SMAN 2	teacher_5	2022
3	A	SMAN 3	teacher_7	2020
4	A	SMAN 6	teacher_8	2009, 2014, 2015
5	A	SMAN 8	teacher_13	2020, 2021
6	B	SMAN 7	teacher_12	2019, 2020, 2021, 2022
7	A	SMAS Al-Falah	teacher_26	2019

A total of 7 Geography teachers (see Table 8) who have participated in self-development activities based on workshops/seminars are shown, with most of these activities being general in nature and open to teachers of subjects other than geography. Workshop/Seminar activities as special participants for geography subjects were only attended by 1 teacher, namely teacher_7, in the form of a geospatial webinar series and the role of geography education in disasters.

Table 9. Teachers who Take Part in Community Service Activities

No	Accreditation	School Name	Teacher Name	Name of Activity	Year
1	A	SMAN 1	teacher_1	Anti-drug education	2022
2	B	SMAS DB 4	teacher_29	Scout	2018

Based on the research results, 2 Geography Teachers who have carried out self-development based on community service activities as committee members, members of community organizations, and speakers/trainers/resources for community activities by teacher_1, namely anti-drug counseling, and teacher_29 (see Table 9), namely scouts.

Table 10. Number of Teachers in Personal Development Activities

No	Types of Self-Development	Amount	Percentage	Category
1	Post Teacher Professional Education Program	4	12%	Not enough
2	Education and training	8	25%	Not enough
3	Activities as resource person/speaker/instructor	3	9%	Not enough
4	Workshop/Seminar Activities as a Participant	7	22%	Not enough
5	Community Service Activities	2	6%	Not enough
	Average	24	15%	Not enough

So, it can be concluded that the performance of high school Geography Teachers in Jambi City in terms of self-development (see [Table 10](#)) is classified as poor (<50%) because most teachers have not participated in self-development activities in the last ten years (2012-2022).

Recommendations from the results of self-development research to the Education Department (Beneficiaries/Stakeholders) to carry out 1) Continuous development program by means of monitoring and evaluation, teacher training must take place on an ongoing basis which is held once a year during the new school year. 2) Education and Training: the training implementation time can be five working days or a week. To the School (Beneficiaries/Stakeholders) to carry out (1) Teacher academic qualifications, in the Minister of National Education Regulation Number 16 of 2007 concerning Academic Qualification Standards and Teacher Competencies, states the academic qualifications that must be possessed by teachers with a minimum of four diplomas (D-IV) or undergraduate (S1) study program in accordance with the subject taught. Based on the research results, the linear study program, namely Geography Education, numbered 14 teachers (44%), while the non-linear study program numbered 18 teachers (56%). So, it can be concluded that more than 50% of teachers do not have a geography major. (2) Academic supervision, one of the dimensions of principal competence in accordance with Minister of National Education Regulation Number 13 of 2007 concerning School/Madrasah Principal Standards, is the competence dimension of academic supervision. The principal supervises classroom teaching at least once a semester. Teachers are learners who need to develop their knowledge and beliefs in order to adopt the change proposals of 'others' (Pieters et al., 2019, p. 51). For Geography Teachers (Users/Users) to continue their education at a higher level, it is regulated in the Minister of National Education Regulation Number 16 of 2007 concerning Academic Qualification Standards and Teacher Competencies that teachers must have a minimum educational qualification of four diplomas (D-IV) or a bachelor's degree (S1).

[Table 11](#). Teachers Who Follow Research Results

No	Accreditation	School Name	Teacher Name	Types of Research	Year
1	A	SMAN 1	teacher_1	Classroom action	2019
2	A	SMAN 2		research	
3	A		teacher_3	Sarjana's thesis	2021
4	A	SMAN 2	teacher_4	Classroom action	2018
5	A			research	
6	A	SMAN 3	teacher_7	Scientific journals	2022
		SMAN 8	teacher_13	Sarjana's thesis	2022
		SMAN 8	teacher_16	Sarjana's thesis	2020
7	B	SMAN 7	teacher_12	Classroom action	2019
8	C			research	
9	C	SMAN 12	teacher_18	Thesis	2019
		SMAN 12	teacher_19	Classroom action	2022
				research	
10	A	SMAS Ferdy Ferry	teacher_27	Thesis	2019

Based on the research results in [Table 11](#), 10 Geography Teachers who have carried out scientific publications based on research results in the field of education are mostly related to geography subjects.

[Table 12](#). Teachers Who Participate in Presentations at Popular Scientific Forums

No	Accreditation	School Name	Teacher Name	Year
1	A	SMAN 2	teacher_3	2019
2	A	SMAN 8	teacher_13	2022

Table 12 shows that 2 Geography Teachers who have carried out scientific publications based on presentations on popular scientific forums are teacher_3 related to geography subjects, and teacher_13 related to English subjects.

Table 13. Teachers Who Participate in Book Publications

No	Accreditation	School Name	Teacher Name	Year
1	A	SMAN 2	teacher_3	2019
2	A	SMAN 2	teacher_4	2021
		SMAN 2	teacher_4	2021

There are 2 Geography Teachers (see Table 13) who have carried out scientific publications based on the publication of textbooks, enrichment books and teacher guidelines, namely teacher_3 related to general subjects that teachers of subjects other than geography can follow, while teacher_4 is specifically for geography subjects, namely Books /Class XII Geography Learning Module for personal use.

Table 14. Number of Teachers in Scientific Publication Activities

No	Types of Scientific Publications	Amount	Percentage	Category
1	Research result	10	31%	Not enough
2	Presentations at Popular Scientific Forums	2	6%	Not enough
3	Presentations at Popular Scientific Forums	2	6%	Not enough
	Average	14	14%	Not enough

So, it can be concluded that the performance of high school geography teachers in Jambi City in terms of scientific publications is classified as poor (<50%) (see Table 14) because most teachers have not participated in scientific publication activities in the last ten years (2012-2022). According to Subadi, the number of teacher publications is still very small compared to the number of existing teachers. The problem with the low number of publications by teachers is that teachers' writing skills are still low (Subadi, 2015). Based on the Regulation of the Minister for Empowerment of State Apparatus & Bureaucratic Reform, teachers at any level are required to carry out scientific publications. However, the facts in the field are that teachers' ability and willingness to write are still low and weak (Krisyanto, 2016).

Recommendations from research results from scientific publications to the Education Department (Beneficiaries/Stakeholders) to conduct ICT workshops, which can be held once a month with the aim of increasing teachers' abilities, interest, motivation and creativity in using ICT as a medium. To the School (Beneficiaries/Stakeholders) to manage facilities and infrastructure, such as providing facilities needed by teachers in the learning process, such as computers and internet services. To Geography Teachers (Users) take part in training, new abilities will continue to develop when they always follow the training carried out.

Table 15. Teachers Who Follow Innovative Work

No	Accreditation	School Name	Teacher Name	Year
1	A	SMAN 1	teacher_1	2022
2	A	SMAN 2	teacher_4	2020 until now
3	A	SMAN 2	teacher_5	2021

Based on the results on Table 15, 3 Geography Teachers who already have innovative work are all specifically for geography subjects, namely in the form of geography learning videos uploaded on YouTube.

Table 16. Number of Teachers in Innovative Work Activities

No	Types of Innovative Work	Amount	Percentage	Category
1	Development of Media, Arts and Learning Methods	3	9%	Not enough

According to the Ministry of Education and Culture of the Republic of Indonesia in the 2019 Guidebook for Selecting Outstanding and Dedicated Teachers for Secondary Education and Special Education, it is explained that an Outstanding High School Teacher is a high school teacher who performance above the national standards for educators including pedagogical, personal, social and professional competencies, producing creative work or innovative, can be in the form of appropriate technology, works of art, literary works, innovations in learning, writing books/essays in the field of education, and sports achievements that are recognized at regional, national and/or international levels, and have an impact on increasing student achievement and can be a role model for other teachers (Kemdikbud, 2019).

Recommendations for innovative work research results (see Table 16) to the Education Service (Beneficiaries/Stakeholders) to provide promotions and awards according to competency (Work Achievement), in Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System Article 40 states that Educators and education staff have the right to receive rewards in accordance with tasks and work performance. In Law of the Republic of Indonesia, Number 14 of 2005 concerning Teachers and Lecturers, Article 37 states that awards to teachers can be given in the form of service marks, special promotions, financial, charters, and/or other forms of awards to teachers who excel with several criteria. Namely, having creative and innovative work, competence, and performance exceeding predetermined targets. In countries with good teacher education systems, the image of the profession is strong and respected. This is where the profession of 'teacher' is generated, not only in terms of education but also in terms of public affirmation and recognition (Kowalczyk-Waledziak et al., 2019). To the School (Beneficiaries/Stakeholders) to give teachers the freedom to choose the right method. For geography Teachers (Users/Users) to create a learning organizational culture, teachers can actively join teacher communities such as STC and take part in the Reading Teacher Movement (G2M) Program; books are a learning resource not only for students but also for teachers.

CPD activities can run well if they receive internal and external support. Internal support is from the teachers themselves, while external support is resource support to support the implementation of CPD activities from the Education Office and the School. By coordinating between all parties, the implementation of the CPD will be more optimal. It is hoped that the role of the education department and schools is that Geography Teachers in Jambi City will be active in carrying out self-development activities, scientific publications and innovative work with the aim of improving the quality of education in the future to be better in line with current developments so that teachers are aware of the importance of carrying out appropriate CPD. not only useful for self-development but also useful for advancing the world of education so that it is able to produce the nation's next generation who can realize the ideals of a nation.

CONCLUSION

The teacher profile at the antecedent (planning) stage is in a good category (79%). The recommendation is to carry out enrichment activities in the form of independent or group learning to improve teachers' abilities, skills and understanding of the material. The teacher profile at the transaction (process) stage is in a good category (84%). The recommendation is that, based on indicators of ability and readiness, teachers must be able to master technology.

Infrastructure indicators can be supplemented with books on CPD. The supporting indicators for implementation are carried out by optimizing the STC organization, supervision by certain parties, and funding sources. The teacher profile at the outcomes (results) stage is in the poor category (13%). Recommendations to the Education Department to carry out a sustainable teacher development program by means of monitoring and evaluation, providing promotions and awards according to teacher competency. Recommendations to the School to carry out teacher academic qualifications, academic supervision, and management of facilities and infrastructure. Recommendations to Geography Teachers to take part in training, produce work on education, and create a learning organizational culture.

Conflict of interests

There are no known conflicts of interest associated with this publication.

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