

Competency Analysis of PPG Alumni for Continuous Professional Development Planning

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ABSTRACT

This study aims to analyze the initial proficiency of Widya Dharma University's PPG (Pre-Service Teacher Education) alumni as a basis for planning Continuous Professional Development (CPD). The method used is quantitative descriptive analysis supported by qualitative data collected through an online questionnaire administered to the alumni. The results indicate that the levels of pedagogical, professional, social, and personal competencies fall into the moderate category; however, gaps exist in certain indicators. Major weaknesses were identified in higher-order thinking skills (HOTS)-based learning abilities, reflection through action research (PTK), and scientific practices such as publications and presentations at broader forums. Qualitative data revealed that alumni have a greater need for practice-based PKB activities, such as workshops and learning communities. These findings underscore the importance of designing PKB that is contextual, collaborative, and oriented toward the real needs of novice teachers.

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1. INTRODUCTION

Teaching is recognized as a professional occupation that requires academic qualifications, teaching certification, professional ethics, and mastery of essential competencies to achieve national education goals [1]–[4]. In Indonesia, teacher professionalism is formally developed through the Pendidikan Profesi Guru (PPG) program, which is designed to prepare prospective teachers with four core competencies: pedagogical, professional, personal, and social competencies [5]. These competencies are considered fundamental standards for effective teaching and educational quality improvement.

Pedagogical competence is closely related to teachers' abilities to design, implement, and evaluate learning processes while understanding students' characteristics and developmental needs [6]–[10]. Professional competence emphasizes mastery of subject

matter, curriculum integration, and instructional strategies [11]–[13]. Social competence concerns teachers' ability to communicate and collaborate effectively within the school environment [14]–[16], while personal competence reflects integrity, responsibility, and role-model characteristics that support positive learning environments [17]–[20]. Previous studies confirm that these competencies are interconnected and collectively influence teacher professionalism and student learning outcomes [21]–[28].

Despite the strategic role of PPG in teacher preparation, several studies indicate that teachers still experience difficulties in applying competencies in real classroom contexts. Problems such as limited mastery of instructional media, weak reflective practice, inadequate higher-order thinking skills (HOTS)-based instruction, and ineffective professional collaboration remain evident among teachers [24]–[30]. These conditions demonstrate that competency achievement during teacher education does not automatically guarantee sustainable professional competence in early teaching practice.

The transition from teacher education programs into professional teaching practice is particularly challenging for novice and early-career teachers. International literature highlights that beginning teachers often face workload pressure, emotional stress, classroom management difficulties, and limited professional support during the induction phase [47]–[49]. Studies on early-career teacher development also emphasize that competencies acquired during teacher education may decline without continuous reinforcement through mentoring, induction programs, and professional learning communities [50]–[54]. Therefore, competency sustainability after graduation has become an important issue in teacher professional development.

Continuous Professional Development (CPD), or Peningkatan Keprofesian Berkelanjutan (PKB), is considered an important strategy for strengthening teacher competence and professionalism [29]–[32]. Effective CPD programs are expected to provide contextual, collaborative, and practice-oriented learning opportunities that help teachers continuously improve instructional quality [31], [32]. However, the effectiveness of CPD largely depends on accurate identification of teachers' actual competency needs, especially during the early stages of their careers.

Although many previous studies have examined teacher competencies and professionalism [21]–[32], most studies focus on in-service teachers, competency theory, or the general influence of competencies on performance. Limited studies specifically map the initial proficiency of PPG alumni as early-career teachers after completing professional teacher education. In addition, previous research rarely examines competency gaps across all four competencies simultaneously as a basis for designing need-based CPD programs. Consequently, information regarding how novice teachers sustain and apply competencies in real educational contexts remains insufficient.

This study addresses these limitations by analyzing the initial proficiency of PPG pre-service teacher alumni at Universitas Widya Dharma across pedagogical, professional, personal, and social competencies. The study aims to: (a) identify competency strengths and gaps among PPG alumni; (b) provide empirical data for designing contextual and needs-based CPD programs; and (c) provide feedback for evaluating and improving teacher education curricula. The findings are expected to contribute theoretically to discussions on

competency sustainability among early-career teachers and practically to the development of more responsive and collaborative CPD programs for novice teachers.

2. METHOD

This study employed a descriptive quantitative approach supported by qualitative data to analyze the initial proficiency of PPG pre-service teacher alumni across four core teacher competencies: pedagogical, professional, personal, and social competencies. The study aimed to identify competency gaps and provide empirical data for designing need-based Continuous Professional Development (CPD/PKB) programs. The competency framework and instrument indicators were developed based on the Indonesian Minister of National Education Regulation No. 16 of 2007 and supported by previous empirical studies concerning teacher competency measurement and teacher readiness [35]–[37].

The population of this study consisted of alumni of the PPG pre-service teacher program at Universitas Widya Dharma. The research subjects involved 98 alumni from several study programs, including Primary School Education (PGSD), Mathematics Education, Indonesian Language Education, and Civic Education (PPKn). The participants were selected using purposive sampling techniques with the following criteria: (a) alumni who had completed the PPG pre-service teacher program, (b) alumni who had entered teaching practice or educational work environments, and (c) alumni willing to participate voluntarily in the study. Purposive sampling was used because the study specifically focused on early-career teachers who had recently completed professional teacher education and were considered relevant for evaluating initial professional proficiency.

Data were collected through an online questionnaire distributed using Google Forms. The questionnaire consisted of two sections: quantitative closed-ended items and qualitative open-ended questions. The quantitative section contained 40 items distributed across four competency dimensions: pedagogical competence (10 items), professional competence (10 items), personal competence (10 items), and social competence (10 items). Each item used a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Higher scores indicated higher levels of perceived competency proficiency.

The questionnaire indicators covered several dimensions, including instructional planning, assessment utilization, classroom management, HOTS-based learning, subject-matter mastery, communication skills, reflective practice, scientific publication readiness, and professional collaboration. The instrument was adapted from teacher competency indicators established in national teacher standards and previous studies on teacher professionalism and competency evaluation [35]–[37]. Before implementation, the instrument underwent expert validation to ensure content relevance, construct validity, language clarity, readability, and instrument feasibility. The results of the instrument validity test are presented in Table 1.

Table 1. Instrument Validity Test Results

Assessment Indicators	Validator 1 (DBPS)	Validator 2 (IR)
Content relevance, construct validity, language clarity and readability, and instrument feasibility	98.75	100
Average Validation Score	99.4	
Validator Conclusion	Valid without revision	Valid without revision
Validator Recommendation	Instrument is feasible for use	Significant alignment between research theme and instrument

The reliability test yielded a Cronbach's alpha coefficient of 0.927, indicating very high reliability, calculated using SPSS version 27. These results demonstrate that the instrument was sufficiently reliable for measuring the competency proficiency of PPG alumni.

In addition to quantitative data, qualitative data were collected through open-ended questions embedded in the online questionnaire. The qualitative section explored respondents' perceptions regarding: (a) difficulties experienced during early teaching practice, (b) professional development needs, (c) preferred forms of CPD activities, and (d) barriers to participation in professional development programs. Qualitative responses were analyzed using thematic analysis procedures consisting of data reduction, coding, categorization, theme identification, and interpretation. Initial coding was conducted by grouping similar responses into recurring concepts, followed by the identification of dominant themes related to competency challenges and CPD needs. The qualitative findings were used to strengthen and contextualize the quantitative results.

Ethical considerations were carefully implemented throughout the research process. All participants were informed about the purpose of the study before completing the questionnaire. Participation was voluntary, and respondents had the right to withdraw at any stage without consequences. Informed consent was obtained electronically prior to data collection. Respondents' identities and personal information were kept confidential and used solely for academic research purposes. The study also received institutional approval from the relevant faculty and research authorities at Universitas Widya Dharma. The collected data were analyzed through six systematic stages, as illustrated in Figure 1.



Figure 1. Data Analysis Stages

The stages of data analysis are described as follows: (a) calculating the actual

questionnaire scores and the mean score for each subvariable for each respondent; (b) computing the percentage of each competency subvariable; (c) determining the ideal score of teacher competence based on the maximum Likert scale value of 5.0; (d) calculating the competency gap, defined as the difference between actual competency achievement and the ideal score; (e) interpreting the gap into categorical levels; and (f) integrating qualitative findings to strengthen interpretation of the results.

The gap interpretation categories were developed based on the distance between actual mean scores and the ideal competency score on a five-point Likert scale. The categorization was intended to identify the urgency of competency reinforcement in CPD planning. Smaller gaps indicate competencies closer to ideal conditions, while larger gaps indicate priority areas requiring intervention and professional development support. The categorization system is presented in Table 2.

Table 2. Gap Interpretation Categories

Gap Category	Interval	Description
Low	0.00 – 0.50	Competence is close to ideal and can serve as a major strength
Moderate	0.51 – 1.00	Requires reinforcement
High	≥ 1.01	Priority area for improvement in Continuous Professional Development (PKB)

3. RESULTS AND DISCUSSION

3.1. Results

The descriptive analysis in this study is presented in the form of frequency distribution, as shown in Table 3.

Table 3. Statistical Summary of Data Analysis

Variable	Pedagogical	Professional	Personal	Social
N	98	98	98	98
Min	66.32	62.50	72.50	60.00
Max	100	100	100	100
Range	33.68	37.50	27.50	40.00
Mean	84.54	82.45	87.42	82.54
Std. Deviation	7.35	9.05	7.99	9.36
Variance	54.09	81.83	63.98	87.56

Source: Processed primary data (2026)

As presented in Table 3, a total of 98 PPG alumni participated in this study. The scores shown in the table are percentage-based competency scores converted from the five-point Likert scale. To facilitate interpretation, the percentage scores were reconverted into mean Likert-scale values by dividing the percentage scores by 20. Accordingly, the mean competency scores are interpreted as follows: pedagogical competence (4.23), professional competence (4.12), personal competence (4.37), and social competence (4.13). The ideal score in this study was based on the maximum Likert scale value of 5.00, which served as the benchmark for determining competency gaps.

The gap values and their interpretations are presented in Table 4.

Table 4. Competency Gap and Interpretation

Gap	Pedagogical	Professional	Personal	Social
Interval	0.77	0.88	0.63	0.87
Category	Moderate	Moderate	Moderate	Moderate
Description	Needs reinforcement	Needs reinforcement	Needs reinforcement	Needs reinforcement

Source: Processed primary data (2026)

The results in Table 4 indicate that all competency gaps fall within the interval of 0.51–1.00, categorized as moderate. Although the overall competency achievement appears relatively adequate, the findings suggest that PPG alumni still require reinforcement to meet ideal professional teacher standards. To identify more specific weaknesses, further analysis was conducted at the indicator level. The ten lowest-scoring indicators are presented in Table 5.

Table 5. Ten Lowest-Scoring Indicators

Statement Item	Score	Gap	Category
Difficulty in designing learning activities aligned with student development	3.83	1.17	High
Mastery of educational theories and principles for instructional application	4.07	0.93	Moderate
Utilization of assessment results to improve learning quality	4.06	0.94	Moderate
Understanding of Classroom Action Research (CAR)	4.03	0.97	Moderate
Mastery of subject matter without misconceptions	3.82	1.18	High
Selection of operational verbs promoting higher-order thinking skills (HOTS)	3.62	1.38	High
Use of scientific references and learning resources	4.00	1.00	Moderate
Readiness to participate in CPD programs	3.98	1.02	High
Presentation of instructional innovations in forums or seminars	3.35	1.65	High
Motivation to write scientific works based on teaching experience	3.94	1.06	High

Source: Processed primary data (2026)

The findings reveal that competency weaknesses are primarily located in practical implementation rather than conceptual understanding. In pedagogical competence, the largest gap appears in designing learning activities appropriate to student development (1.17), indicating difficulties in translating theoretical knowledge into contextual instructional practice. Similarly, in professional competence, alumni experience difficulties in implementing HOTS-based instruction (1.38) and maintaining deep mastery of subject matter (1.18).

The qualitative findings further support these results. Several respondents reported difficulties in adapting instructional theories to real classroom conditions. One respondent stated:

“During PPG, we learned many instructional models theoretically, but when entering real classrooms, it was difficult to adjust them to students’ actual abilities and classroom situations.”

Another respondent emphasized the challenge of reflective practice:

“I still feel confused about conducting Classroom Action Research because I have limited guidance and experience after graduation.”

In the social and academic dimensions, the highest gaps were found in presenting instructional innovations (1.65) and scientific writing motivation (1.06). These findings

indicate that academic dissemination culture among alumni remains relatively weak. One respondent explained:

“Scientific publication feels difficult because we lack mentoring, time, and confidence to write academic papers.”

Another respondent noted:

“Most beginner teachers focus on classroom survival and administrative work, so presenting research or innovations is not yet a priority.”

Analysis of open-ended responses indicates that 73.47% of respondents prioritize training activities and collective teacher forums as their primary CPD needs, while 22.45% prefer innovative work development and only 4.08% prioritize scientific publication. These findings suggest that early-career teachers tend to prioritize practical and immediately applicable professional development activities over academic dissemination.

Regarding preferred learning formats, 38.78% of respondents favored learning communities and 35.71% preferred workshops, compared to mentoring (17.35%) and online training (8.16%). The preference for collaborative formats reflects the needs of novice teachers for peer interaction, practical support, and shared professional experiences. From the perspective of adult learning theory, collaborative learning environments allow participants to connect professional learning with authentic workplace problems and experiential reflection. Learning communities and workshops also provide opportunities for collegial discussion, emotional support, and collaborative problem-solving, which are essential during the transition into professional teaching careers.

Several barriers to CPD participation were also identified, including limited access to information, financial constraints, workload, and time limitations. Participation frequency varied considerably among respondents, indicating disparities in professional development opportunities. Suggested CPD programs included workshops, mentoring programs, learning communities, SIMPKB training, innovative work development, career guidance, and competency certification.

3.2. Discussion

The findings demonstrate that competency weaknesses among PPG alumni are distributed across all four competency domains rather than concentrated in a single aspect. However, the most important contribution of this study lies in the finding that competency gaps are primarily implementation-based rather than conceptual. Alumni generally demonstrate adequate theoretical understanding of teacher competencies, but they experience difficulties in applying these competencies consistently in real educational contexts. This finding strengthens previous studies emphasizing that teacher professionalism depends not only on conceptual mastery but also on contextualized professional practice and reflective capability [38].

In the pedagogical domain, the high gap in designing developmentally appropriate learning activities indicates difficulties in implementing differentiated instruction and adaptive teaching strategies [39]. Similarly, weaknesses in utilizing assessment results and conducting Classroom Action Research (CAR) suggest that reflective practice culture among novice teachers remains underdeveloped. These findings are consistent with previous

studies reporting gaps between pedagogical theory acquired during teacher education and classroom implementation realities [40].

The professional competency findings further confirm that early-career teachers often struggle to integrate subject mastery with higher-order thinking skills (HOTS)-based learning. This challenge is particularly important in 21st-century education, which requires teachers to facilitate critical thinking, problem-solving, and student-centered learning [41]. The limited use of scientific references and instructional resources also indicates weaknesses in academic literacy and independent professional learning.

The preference for workshops and learning communities demonstrates that novice teachers require collaborative and practice-oriented learning environments. This preference aligns with adult learning theory, which emphasizes experiential learning, contextual relevance, and peer interaction in professional development processes. Collaborative CPD activities provide opportunities for reflection, discussion, and shared problem-solving, which are highly relevant for teachers experiencing transition shock during the early stages of their careers.

From the perspective of teacher identity formation, the findings indicate that many alumni are still in the adaptation phase of becoming professional teachers. Early-career teachers often experience “reality shock” when transitioning from teacher education programs into actual school environments. They must simultaneously adapt to instructional demands, administrative responsibilities, emotional pressures, and institutional expectations. Such conditions may affect self-confidence, professional identity development, and long-term career sustainability [47]–[49]. Therefore, competency reinforcement should not only focus on technical teaching skills but also address emotional resilience, reflective capacity, and professional identity development.

In the personal domain, low readiness for CPD participation suggests that continuous professional development has not yet become an intrinsic professional culture among early-career teachers. Participation in CPD tends to depend on perceived practical benefits and institutional encouragement [42], [43]. This finding implies the importance of creating supportive professional ecosystems that encourage lifelong learning habits among novice teachers.

The findings regarding scientific publication, presentation activities, and research dissemination are particularly significant. The low interest in scientific publication and innovation dissemination indicates that academic culture among alumni remains weak. Several factors may contribute to this condition, including workload pressure, limited mentoring, publication anxiety, lack of confidence, limited institutional support, and restricted access to academic forums. Early-career teachers often prioritize classroom adaptation and administrative survival over research productivity. Consequently, academic engagement activities such as scientific writing and conference participation are perceived as secondary responsibilities.

These findings reinforce the importance of institutional mentoring programs and sustainable professional support systems. Mentoring for scientific writing, collaborative research communities, and publication assistance programs may help reduce anxiety and improve teachers’ confidence in academic dissemination activities. Strengthening reflective

and academic culture is essential because research engagement contributes significantly to teacher professionalism and long-term competency sustainability [44], [45].

Overall, this study confirms that pedagogical, professional, personal, and social competencies collectively influence teacher professionalism [46]. However, the study contributes new insights by demonstrating that the central challenge for PPG alumni is not merely competency acquisition, but competency sustainability and implementation during the transition into professional teaching careers.

From an international perspective, teacher competence in the 21st century requires reflective, collaborative, adaptive, and innovative capabilities [47]. Effective CPD systems should therefore be continuous, context-based, collaborative, and responsive to teachers' real professional needs [50]–[54]. Accordingly, the findings imply that teacher education institutions and schools should strengthen the integration of theory and practice while providing continuous mentoring for novice teachers.

Based on these findings, CPD programs should prioritize: (a) alumni-based learning communities; (b) workshops on differentiated instruction and HOTS-based learning; (c) mentoring for scientific writing and Classroom Action Research; (d) continuous induction and mentoring programs for early-career teachers; and (e) collaborative professional learning ecosystems. Such approaches are expected to strengthen competency sustainability, reflective practice, professional identity formation, and academic culture among novice teachers.

4. CONCLUSION

This study demonstrates that the initial proficiency of PPG pre-service teacher alumni remains at a moderate level across pedagogical, professional, personal, and social competencies. The main contribution of this study lies in revealing that competency gaps among early-career teachers are primarily implementation-based rather than conceptual. Although alumni generally possess adequate theoretical understanding, difficulties remain in applying competencies within authentic classroom contexts, particularly in HOTS-based instruction, reflective practice, assessment utilization, scientific publication, and dissemination of instructional innovation.

These findings imply that teacher professionalism should not be viewed solely as the outcome of teacher education programs, but as a continuous developmental process requiring sustainable support after graduation. Therefore, universities and PPG providers should strengthen the integration between theoretical preparation and contextual teaching practice while fostering reflective and academic cultures during teacher education. For policymakers and curriculum developers, the findings highlight the importance of designing CPD programs that are collaborative, practice-oriented, and responsive to the real needs of novice teachers through mentoring systems, learning communities, and sustainable induction programs.

This study has several limitations. First, the study was conducted within a single university context, which may limit the generalizability of the findings. Second, the study relied primarily on self-reported questionnaire data that may contain subjective bias. Third, the cross-sectional design only captured competency conditions at one point in time and

could not examine competency development longitudinally. Finally, the qualitative component was limited to short open-ended responses, resulting in limited depth of exploration regarding participants' professional experiences.

Future studies are recommended to conduct longitudinal research examining competency sustainability and professional identity development among early-career teachers over time. Further research may also explore intervention-based CPD models, mentoring effectiveness, and comparative studies across teacher education institutions to identify more effective strategies for strengthening teacher competency sustainability. The findings of this study are expected to contribute to the improvement of teacher education systems, CPD policies, and professional support programs that better prepare novice teachers for the challenges of contemporary education.

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