

Developing an EPG-Standardized Problem-Based Learning Model to Enhance Pedagogical Competence among Pre-Service English Teachers: A Needs Analysis in Indonesian Higher Education

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ABSTRACT:

Pedagogical competence is a core requirement in English language teacher education because pre-service teachers must be able to transform disciplinary knowledge into teachable, assessable, and context-sensitive classroom practice. This study reports a needs analysis for developing a learning model that integrates the European Profiling Grid (EPG) and Problem-Based Learning (PBL) to strengthen pedagogical competence among pre-service English teachers in Indonesian higher education. A descriptive quantitative survey design was used. Data were collected from 8 lecturers from 4 English Education study programs and 91 students from 2 English Education study programs. The lecturer questionnaire consisted of 35 items across five dimensions: pedagogical competence needs, EPG-based competence mapping, PBL-based pedagogical learning, EPG-PBL integration, and implementation readiness. The student questionnaire consisted of 20 items across three dimensions: pedagogical competence needs, perceptions of EPG-standardized learning, and perceptions of PBL. Responses used a five-point Likert scale. The findings show strong perceived need from lecturers, with 95.71% of responses in the agree or strongly agree categories and an estimated weighted mean of 4.62. Students also reported high need, with 89.20% agreement and an estimated weighted mean of 4.33. The strongest lecturer support appeared in the integration of EPG and PBL, while students placed high value on structured learning environments, feedback, classroom management, lesson planning, and reflective problem-solving. The study concludes that an EPG-standardized PBL model is empirically justified as a competence-based, reflective, and practice-oriented design for English teacher education.

Keywords: pedagogical competence; European Profiling Grid; problem-based learning; pre-service English teachers; needs analysis; teacher education.

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A. Introduction

Teacher education programs face a persistent challenge: they must prepare pre-service teachers not only to understand educational theory but also to make defensible instructional decisions in real classrooms. In English as a Foreign Language (EFL) teacher education, this challenge becomes more complex because future teachers need to plan lessons, manage classroom interaction, select methods, assess learning, give feedback, use digital resources, and respond to learners' linguistic and cultural diversity. These abilities cannot be reduced to

general teaching knowledge. They require pedagogical competence that connects knowledge of English, knowledge of learners, teaching methodology, assessment literacy, classroom management, reflective judgment, and professional development.

The theoretical basis of this study is rooted in Shulman's concept of pedagogical content knowledge, which explains that teacher expertise depends on the integration of subject matter knowledge and pedagogy (Shulman, 1986, 1987). In this perspective, a teacher is not merely someone who knows English or someone who knows teaching techniques. A competent teacher understands how English can be represented, sequenced, explained, practiced, assessed, and adapted to learners' needs. This view remains relevant in contemporary teacher education because pedagogical competence now includes digital media, formative assessment, intercultural awareness, and reflective professional growth (Mishra & Koehler, 2006; Darling-Hammond et al., 2020).

However, teacher education often struggles to translate competence frameworks into actual learning experiences. Competence standards may exist at the curriculum level, but students may still experience fragmented learning if courses do not provide clear developmental benchmarks, authentic pedagogical problems, and guided opportunities for reflection. This gap is especially important in TEFL-related courses, where pre-service teachers must learn to design instruction, facilitate interaction, evaluate learning, and

connect theory with teaching practice. A model that combines a competence framework and a problem-solving pedagogy can address this gap more directly.

The European Profiling Grid (EPG) offers a relevant competence-based reference for language teacher development. The EPG describes language teacher competences across professional areas such as methodology, lesson and course planning, assessment, interaction management, intercultural competence, language awareness, digital media, and professionalism. Its value lies in mapping teacher competence development in a structured way rather than treating pedagogical competence as an abstract goal (North et al., 2013; Eaquls, 2019). When adapted for pre-service teacher education, the EPG can function as a diagnostic and developmental tool that helps lecturers and students identify current competence levels, target learning needs, and monitor progress.

Problem-Based Learning (PBL) complements this framework because it positions students as active problem-solvers who learn through authentic cases, collaborative inquiry, self-directed investigation, and reflection. PBL has been widely associated with higher-order thinking, self-regulated learning, and the ability to connect conceptual knowledge with applied practice (Barrows, 1986; Hmelo-Silver, 2004; Schmidt et al., 2011). For pre-service English teachers, PBL can be used to analyze classroom problems, design teaching solutions, justify methodological decisions, revise lesson plans, and evaluate assessment choices. Therefore, PBL can become the instructional process through which EPG-based competence indicators are practiced.

Despite the conceptual fit between EPG and PBL, model development should not begin from theory alone. It must be justified by empirical needs from the users who will implement and experience the model. This study therefore examines lecturer and student needs as the first step in developing an EPG-standardized PBL learning model for pedagogical competence in English Education programs. The study is guided

by the following research question: How do lecturers and students perceive the need for developing an EPG-standardized PBL learning model to enhance pedagogical competence among pre-service English teachers?

B. Literature Review

1. Pedagogical Competence in English Teacher Education

Pedagogical competence refers to the capacity to design, implement, monitor, evaluate, and improve teaching in ways that support learners' development. In English teacher education, this competence includes lesson planning, learning activity design, classroom management, assessment, feedback, digital resource use, language awareness, and intercultural communication. Shulman's (1986, 1987) work remains central because it rejects the separation between content and pedagogy. The quality of teaching depends on how teachers transform content into forms that learners can understand and use.

Grossman (1990) extended this view by showing that pedagogical content knowledge includes knowledge of purposes, curriculum, learners, instructional strategies, and assessment. This is consistent with contemporary approaches to teacher education that emphasize practice-based learning, reflective inquiry, and the alignment between intended outcomes, teaching activities, and assessment (Biggs & Tang, 2011; Darling-Hammond et al., 2020). Pedagogical competence therefore develops when pre-service teachers repeatedly make instructional decisions, receive feedback, reflect on evidence, and revise their practice.

2. European Profiling Grid as a Competence-based Framework

The European Profiling Grid is a language teacher competence framework developed to support teacher profiling, self-assessment, professional development, and institutional quality assurance (North et al., 2013; Eaqals, 2019). The EPG is relevant to English teacher education because it connects teaching

competence with developmental descriptors. It does not only ask whether a teacher is competent. It helps identify which competence area needs development and what progression may look like.

In this study, EPG is treated as a standardizing framework for pedagogical competence development. Its descriptors can guide the design of learning outcomes, teaching scenarios, rubrics, self-assessment sheets, peer feedback, and reflective tasks. This is important because pre-service teachers often need explicit criteria to understand what good lesson planning, classroom interaction, assessment design, and digital media use mean in actual practice. The EPG also supports international comparability because it situates local teacher education within broader language teacher competence standards.

3. Problem-Based Learning as a Bridge between Theory and Practice

Problem-Based Learning is an instructional approach in which learning begins from a problem that requires inquiry, collaboration, conceptual understanding, and practical decision-making (Barrows, 1986; Hmelo-Silver, 2004). In PBL, students do not receive knowledge as isolated information. They identify what they know, determine what they need to know, investigate possible solutions, discuss evidence, and present reasoned decisions. This process is consistent with constructivist and social learning theories because knowledge is actively built through problem analysis, dialogue, and reflection.

For pre-service English teachers, PBL is pedagogically appropriate because teaching itself is a problem-rich profession. Teachers must respond to students who have different language levels, motivation, learning needs, cultural backgrounds, and access to technology. PBL can simulate these professional decisions through classroom cases. For example, students may be asked to solve problems related to low student participation, weak vocabulary retention, inappropriate assessment tasks, ineffective feedback, or limited digital learning resources. Through such cases, students practice applying

pedagogical concepts to authentic teaching contexts.

4. Integrating EPG and PBL for Pedagogical Competence

The integration of EPG and PBL is theoretically coherent. EPG provides the competence map, while PBL provides the learning process. EPG clarifies the target competences that pre-service teachers must develop. PBL creates the learning conditions in which those competences can be practiced through realistic pedagogical problems. This integration also fits the principle of constructive alignment because learning outcomes, learning activities, and assessment criteria can be linked to the same competence descriptors (Biggs & Tang, 2011).

This integrated model may also strengthen reflective practice. Reflection is central to professional learning because teachers need to examine the relationship between instructional intentions, classroom actions, learner responses, and assessment evidence (Schon, 1983; Hattie & Timperley, 2007). In an EPG-standardized PBL model, reflection can be structured through competence descriptors. Students can ask: Which EPG competence was targeted? What evidence shows that the competence was demonstrated? What decision should be revised? What further support is needed? In this way, reflection becomes more systematic and evidence-informed.

C. Method

1. Research Design

This study used a descriptive quantitative needs analysis design. Needs analysis was selected because the purpose of the study was to identify the perceived necessity, relevance, and readiness for developing an EPG-standardized PBL learning model for pedagogical competence. The study did not test the effectiveness of the model. Instead, it generated empirical justification for model development by examining the views of

lecturers and students as the primary users of the proposed model.

The data were collected through two questionnaires. The lecturer questionnaire contained 35 statements across five dimensions: a) pedagogical competence learning needs, b) the need for the EPG approach, c) the need for PBL-based pedagogical competence learning,

d) EPG and PBL integration, and e) readiness to implement an innovative learning model. The student questionnaire contained 20 statements across three dimensions: a) pedagogical competence learning needs, b) perceptions of EPG-standardized pedagogical competence learning, and c) perceptions of PBL-based pedagogical competence learning.

The questionnaires used a five-point Likert scale: strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, and strongly agree = 5. The analysis used descriptive statistics in the form of percentage distribution, positive agreement rate, and estimated weighted mean. The

positive agreement rate was calculated by combining the percentages of agree and strongly agree responses. The weighted mean was estimated by multiplying the percentage of each response category by its Likert score and dividing the total by 100.

2. Participants

The lecturer respondents were 8 lecturers from 4 English Education study programs at higher education institutions in Palembang, Indonesia. The institutions were Universitas Muhammadiyah Palembang, Universitas PGRI Palembang, Universitas Palembang, and Universitas Indo Global Mandiri Palembang. The student respondents were 91 students from 2 English Education study programs, namely Universitas Muhammadiyah Palembang and Universitas PGRI Palembang. Student respondents came from semesters 3, 5, and 7.

Table 1. Participants and Research Instruments

Respondent Group	Number	Institutional Coverage	Instrument Focus	Items
Lecturers	8	4 English Education Study Programs	Pedagogical competence needs, EPG, PBL, EPG-PBL integration, implementation readiness	35
Students	91	2 English Education Study Programs	Pedagogical competence needs, EPG-standardized learning, PBL-based learning	20

D. Results

1. Lecturers' Needs Analysis

The lecturer data indicate a very strong perceived need for developing an EPG-standardized PBL learning model. Across 35 items, 67.50% of responses were in the strongly agree category and 28.21% were in the agree category. This produces

a positive agreement rate of 95.71% and an estimated weighted mean of 4.62. Neutral responses were low at 3.93%, while disagreement was almost absent. This pattern shows that lecturers generally view pedagogical competence development, EPG-based mapping, PBL-based learning, and EPG-PBL integration as highly relevant for English teacher education.

Table 2. Summary of Lecturers' Needs Analysis Results

Dimension	Items	Positive Agreement	Estimated Mean	Interpretation
Pedagogical Competence Learning Needs	10	95.00%	4.67	Very high need
Need for EPG Approach	10	92.50%	4.47	Very high need
Need for PBL-Based Pedagogical Competence Learning	6	100.00%	4.71	Very high need
EPG and PBL Integration	4	100.00%	4.72	Very high need
Readiness for Innovative Model Implementation	5	95.00%	4.65	Very high readiness
Overall Lecturer Responses	35	95.71%	4.62	Very high support

The strongest lecturer responses appeared in items related to authentic and reflective teaching practice, continuous assessment, guidance for reflective teaching, basic pedagogical principles in English teaching, and the integration of theory with classroom practice. These findings show that lecturers do not only want students to learn pedagogical concepts. They want students to

experience, apply, evaluate, and reflect on those concepts in a structured way.

One item deserves specific attention. The statement that the current curriculum has not fully met students' needs in planning, implementing, and evaluating learning received only 50.00% positive agreement, with 37.50% neutral responses and 12.50% strongly disagree

responses. This pattern suggests that lecturers may not reject the current curriculum, but they still see a need for more systematic support. In other words, the proposed model should not be framed as a replacement for the curriculum. It should be framed as an enrichment model that strengthens curriculum implementation through EPG indicators and PBL activities.

2. Students' Needs Analysis

The student data also show a high level of perceived need. Across the student

questionnaire, 46.50% of responses were in the strongly agree category and 42.70% were in the agree category. This produces a positive agreement rate of 89.20% and an estimated weighted mean of 4.33. Neutral responses accounted for 9.20%, while disagreement and strong disagreement were each 0.80%. These results indicate that students generally recognize the importance of pedagogical competence, EPG-standardized learning, and PBL-based learning for their preparation as future English teachers.

Table 3. Summary of Students' Needs Analysis Results

Dimension	Items	Positive Agreement	Estimated Mean	Interpretation
Pedagogical Competence Learning Needs	22 indicators/sub-items	89.44%	4.34	Very high need
Perceptions of EPG-Standardized Learning	7	91.10%	4.35	Very high need
Perceptions of PBL-Based Pedagogical Competence Learning	8	87.55%	4.33	Very high need
Overall Students' Responses	20 main items with sub-indicators	89.20%	4.33	Very high support

Students reported especially strong needs in creating structured learning environments, providing constructive feedback, building safe and comfortable classroom climates, identifying students' learning needs before designing objectives, managing classroom interaction, explaining English according to learners' proficiency levels, and making decisions based on pedagogical problem analysis. These areas align closely with core EPG descriptors related to lesson planning, methodology, assessment, interaction management, language awareness, and professional decision-making.

The comparatively lower, but still high, responses appeared in items related to strengthening theoretical understanding through PBL, using assessment as learning, connecting PBL to teaching practice, integrating intercultural communication habits, and identifying online

learning resources. These findings are important. They indicate that students support

PBL and digital learning, but they may still need scaffolding to understand how problem-based activities, assessment, intercultural competence, and digital media connect to actual classroom teaching.

3. Integrated Interpretations of Lecturer and Student Data

The combined lecturer and student findings provide a consistent empirical basis for developing the proposed model. Lecturers show stronger overall support than students, but both groups indicate high perceived need. Lecturers emphasize systematic pedagogical development, authentic teaching practice, reflection, EPG-based mapping, and PBL integration. Students emphasize practical teaching abilities, classroom management, assessment, feedback, digital

competence, intercultural communication, and problem-solving. This alignment suggests that the proposed model should be designed as a

practical, structured, and reflective learning model rather than a purely theoretical framework.

Table 4. Design implications for the proposed EPG-standardized PBL model

Empirical finding	Design implication for the model
Lecturers strongly support EPG-PBL integration.	Use EPG descriptors as the competence map and PBL cases as the learning process.
Lecturers emphasize authentic and reflective teaching practice.	Include microteaching, classroom cases, reflective journals, and evidence-based self-assessment.
Students need lesson planning, classroom management, assessment, feedback, and digital competence.	Design PBL scenarios around lesson planning, interaction problems, assessment design, feedback, and digital media selection.
Students support EPG-standardized learning but require guidance.	Provide simplified EPG rubrics, competence checklists, and examples of competence evidence.
Some students show lower confidence in connecting PBL, theory, and practice.	Use scaffolding stages: problem orientation, theory mapping, solution design, teaching simulation, peer feedback, and revision.
Lecturers indicate implementation readiness but need modules and training.	Develop lecturer guides, student modules, rubrics, and implementation workshops.

E. Result and Discussion

The findings confirm that pedagogical competence development is a pressing need in English Education programs. The lecturer agreement rate of 95.71% indicates that lecturers strongly support a more systematic model for developing students' competence in planning, implementing, and evaluating English learning. This finding is theoretically consistent with Shulman's (1986, 1987) argument that effective teaching depends on the transformation of content knowledge into pedagogically meaningful classroom decisions. It also supports Grossman's (1990) view that teacher knowledge includes curriculum, learners, instructional strategies, and assessment.

The student agreement rate of 89.20% shows that pre-service English teachers are aware of their need for practical pedagogical abilities. Their strongest needs relate to structured learning environments, classroom atmosphere, feedback,

lesson planning, interaction management, and decision-making based on problem analysis. These areas are not peripheral skills. They represent the operational core of teaching. Without these abilities, pre-service teachers may understand teaching theory but still struggle to organize learning, respond to classroom complexity, and evaluate learner progress.

The high support for EPG-standardized learning suggests that students and lecturers need a visible competence map. A competence framework matters because it makes teacher development observable and discussable. EPG can help lecturers translate broad pedagogical competence into specific descriptors, rubrics, and learning tasks. This is aligned with competence-based teacher education, where learning outcomes must be explicit, developmental, and assessable. It is also aligned with constructive alignment because the same competence descriptors can guide learning outcomes, PBL activities, teaching simulations, and assessment criteria (Biggs &

Tang, 2011).

The high support for PBL indicates that pedagogical competence should be developed through authentic problem-solving. This finding is important because teacher education cannot rely only on lectures about pedagogy. Pre-service teachers need to practice decision-making under realistic teaching conditions. PBL provides this structure by requiring students to analyze classroom problems, investigate theoretical explanations, design pedagogical solutions, test those solutions through simulation or microteaching, and reflect on the results (Hmelo-Silver, 2004; Schmidt et al., 2011).

The integration of EPG and PBL has a specific contribution. EPG alone can produce a clear competence map, but it does not automatically create active learning experiences. PBL alone can create active learning, but it may lack a precise competence standard if not guided by explicit descriptors. Their integration solves both problems. EPG defines what competence should be developed. PBL defines how students experience and demonstrate that competence. This integration can therefore support a model that is standards-based, inquiry-oriented, reflective, and practice-connected.

The findings also show that implementation support is necessary. Lecturers reported high readiness, but they also indicated the need for modules, teaching materials, and training. This point is important for model development. A learning model will not be sustainable if it only provides abstract syntax or theoretical stages. It must include usable instruments: lecturer guides, student worksheets, EPG-based rubrics, PBL case banks, assessment forms, reflective

prompts, e-learning resources, and examples of completed tasks. These instruments can reduce implementation ambiguity and help lecturers apply the model consistently across courses.

From the student perspective, several areas need scaffolding. Students showed slightly lower support for items related to assessment as learning, PBL as a means of strengthening theory, and digital media identification. This does not mean that students reject these areas. The positive responses remain high. However, it suggests that students may need clearer examples of how formative assessment, theoretical concepts, digital resources, and PBL tasks work together. The model should therefore include explicit links between theory, teaching problems, design decisions, classroom simulation, feedback, and revision.

Overall, the results support the development of an EPG-standardized PBL model as an innovation in EFL teacher education. The model's novelty lies in combining an international language teacher competence framework with a problem-based pedagogical process for pre-service teacher development. In the Indonesian context, this integration can help English Education programs strengthen graduate quality, align local teacher preparation with international competence standards, and make pedagogical competence more measurable, reflective, and practice-oriented.

F. Proposed Model Framework

Based on the needs analysis and theoretical synthesis, the proposed model can be organized into six learning stages. Each stage should be linked to selected EPG descriptors and supported by PBL procedures.

Table 5. Proposed Stages of the EPG-Standardized PBL Learning Model

Stage	Learning Focus	Main Activity	Expected Evidence
1. Competence orientation	Introducing EPG competence targets	Students review simplified EPG descriptors and identify target competences.	Initial competence profile
A. Problem encounter	Understanding authentic pedagogical problems	Students analyze an EFL classroom case related to planning, methodology, assessment, interaction, digital media or intercultural communication.	Problem analysis sheet
B. Inquiry and theory mapping	Connecting theory with the problem	Students identify relevant pedagogical theories, EPG indicators, and possible teaching strategies.	Theory to practice map
C. Solution design	Developing	Students design lesson plans, activities, assessment tools, feedback strategies or digital resources.	Teaching solution package
D. Simulation and feedback	Practicing pedagogical competence	Students conduct microteaching or peer simulation and receive feedback using EPG-based rubrics.	Performance rubric and peer feedback
E. Reflection and revision	Strengthening professional judgment	Students revise their solution and write a reflection on competence growth.	Revised product and reflective journal

The proposed model should be implemented flexibly according to course context. In TEFL methodology courses, the model can focus on method selection and classroom interaction. In lesson planning courses, it can focus on learning objectives, sequencing, materials, and assessment alignment. In microteaching courses, it can focus on performance evidence and reflective improvement. In educational technology courses, it can focus on digital media selection and responsible digital communication. This flexibility allows the model to function as a pedagogical design framework rather than a rigid teaching procedure.

G. Conclusion

This study provides empirical support for developing an EPG-standardized PBL learning model to enhance pedagogical competence among pre-service English teachers. Lecturer responses show very high support, with 95.71% positive agreement and an estimated weighted mean of 4.62. Student responses also show high

support, with 89.20% positive agreement and an estimated weighted mean of 4.33. These findings demonstrate that both lecturers and students perceive a strong need for a structured, standards-based, and practice-oriented learning model.

The study concludes that EPG and PBL should be integrated because they address complementary needs. EPG provides explicit competence descriptors for language teacher development, while PBL provides authentic learning processes that help students connect theory, classroom problems, teaching decisions, feedback, and reflection. The proposed model

should include competence orientation, problem encounter, inquiry and theory mapping, solution design, simulation and feedback, and reflection and revision.

The practical implication is clear. English Education programs should not treat pedagogical competence as a general outcome

that appears automatically after students complete courses. Programs need structured learning designs, explicit competence standards, authentic teaching problems, continuous

assessment, reflective practice, and implementation support for lecturers. The proposed EPG-standardized PBL model offers a coherent pathway to address these needs.

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