

**MODEL PENYIAPAN PEDAGOGICAL CONTENT KNOWLEDGE (PCK)
CALON GURU UNTUK MENINGKATKAN KEMAMPUAN
MERANCANG DAN MENGIMPLEMENTASIKAN PENGAJARAN
FISIKA**

ABSTRAK

Penelitian ini bertujuan untuk menghasilkan model penyiapan *PCK* calon guru dalam perkuliahan Perencanaan Pengajaran Fisika (PPF) yang dapat meningkatkan kemampuan merancang dan mengimplementasikan pengajaran fisika pada salah satu LPTK di Maluku dengan melibatkan 47 orang sampel. Penelitian ini menggunakan *Embedded Design: Experimental Model* dari *Mixed Methods Research* dengan pendekatan *two-phases*. Hasil penelitian yang diperoleh berupa model penyiapan *PCK* calon guru dalam bentuk program perkuliahan PPF. Calon guru dapat mengembangkan analisis konsep dengan kualifikasi cukup, menyusun peta konsep dengan kualifikasi cukup, dan mengembangkan *Content Representations (CoRes)* dengan kualifikasi baik; mengembangkan pra *Pedagogical and Professional-Experience Repertoires (PaP-eRs)* dengan kualifikasi cukup; merancang pengajaran Fisika dalam bentuk pengembangan Silabus dengan kualifikasi sangat baik dan pengembangan RPP dengan kualifikasi baik; mengimplementasikan pengajaran Fisika dalam bentuk simulasi pembelajaran pada kegiatan *microteaching* dengan kualifikasi baik. Model penyiapan *PCK* yang dihasilkan efektif untuk meningkatkan kemampuan calon guru dalam merancang dan mengimplementasikan pengajaran Fisika. Dosen dan mahasiswa calon guru memberikan tanggapan positif terhadap implementasi model penyiapan *PCK*. Selain itu ditemukan beberapa hal antara lain *PCK* merupakan hal yang baru bagi calon guru, kemampuan konten yang kurang mengakibatkan calon guru kesulitan dalam mengembangkan analisis konsep dan menyusun peta konsep, terlalu banyak jumlah sampel, serta penyiapan *PCK* calon guru hanya dilakukan untuk topik listrik statis saja. Untuk itu disarankan agar informasi tentang *PCK* perlu diperkenalkan sejak awal, perlu penambahan mata kuliah khusus yang mengakomodir peningkatan pemahaman konten fisika SMP dan SMA, melakukan penelitian lebih lanjut tentang penyiapan *PCK* calon guru fisika untuk topik-topik fisika yang lain, merestrukturisasi ulang kurikulum mata kuliah PPF dengan memasukkan model penyiapan *PCK*.

Kata kunci: *Pedagogical Content Knowledge (PCK)*, calon guru fisika, Perencanaan Pengajaran Fisika (PPF), kemampuan merancang dan mengimplementasikan pengajaran.

A MODEL OF PRE-SERVICE TEACHERS' PEDAGOGICAL CONTENT KNOWLEDGE (PCK) PREPARATION TO IMPROVE THE ABILITIES OF DESIGNING AND IMPLEMENTING PHYSICS TEACHING

ABSTRACT

The research aimed to produce a model of pre-service teachers' PCK preparation in the course subject of Physics Teaching Planning that can improve the abilities to design and implement physics teaching in one of the teacher's training institutes in Maluku by involving 47 students as the sample. The research adopted Embedded Design: Experimental Method of Mixed Methods Research with a two-phase approach. Research results produced a model of pre-service teachers' PCK preparation in the form of a lecture program of Physics Teaching Planning. The pre-service teachers could develop concept analysis with quite qualification, make concept maps with quite qualification, and develop content representations (CoRes) with well qualification; they could develop pre-Pedagogical and Professional-Experience Repertoires (PaP-eRs) with quite qualification; design Physics teaching in the forms of syllabus development with very well qualification and lesson plan development with well qualification; and implement Physics teaching in the form of instructional simulation in the microteaching activity with well qualification. The model of PCK preparation produced was effective in improving the pre-service teachers' abilities in designing and implementing Physics teaching. Lecturers and pre-service (student) teachers responded positively to the implementation of PCK preparation model. In addition, it was also found that PCK was something novel for the pre-service teachers. However, in this research the lack of content ability caused the pre-service teachers to have difficulties in developing concept analysis and making concept maps; furthermore, the number of sample was too large, and preparing PCK for pre-service teachers could be conducted for the topic of static electricity only. Therefore, it is recommended that information concerning PCK should be introduced very early, special courses accommodating improvement in content understanding of junior and senior secondary school physics need to be added, further research on PCK preparation for physics pre-service teachers on other topics should be conducted, and restructuring of the curriculum of Physics Teaching Planning by incorporating PCK preparation model should be done.

Keywords: *Pedagogical Content Knowledge (PCK)*, physics pre-service teachers, Physics Teaching Planning, the abilities of designing and implementing teaching.

