

teachers' PCK will then produce a hypothetical model for developing PCK candidates.

a. The pattern of development of PCK Prospective Teachers

To see the pattern of development of prospective teachers' PCK, development analysis each individual teacher candidates based on the number of concepts emerged,

3. Results and Discussion

CORE scores, scores papers and nine indicator of PCK. Based on the nine indicators of the development of prospective teachers' PCK categorized into three categories, namely the category of less (1), sufficient (2) and good (3). Description of each k belonging to the presented in Table 2.

Table 2: The development of prospective teachers' PCK consecutive approach

Stages	Prospective Teacher	Indicator of PCK									Modus Category
		1	2	3	4	5	6	7	8	9	
I	A	1	1	1	1	1	1	1	1	1	1
	B	1	1	1	1	1	1	1	1	1	1
	C	1	1	1	1	1	1	1	1	1	1
	D	1	1	1	1	1	1	1	1	1	1
	E	1	1	1	1	1	1	1	1	1	1
	F	1	1	1	1	1	1	1	1	1	1
	G	1	1	1	1	1	1	1	1	1	1
	H	1	1	1	1	1	1	1	1	1	1
	I	1	1	1	1	1	1	1	1	1	1
	J	1	1	1	1	1	1	1	1	1	1
II	A	1	1	2	1	1	2	1	1	1	1
	B	2	1	2	2	1	2	1	2	1	2
	C	1	1	1	1	1	2	1	1	1	1
	D	1	1	1	1	1	2	1	1	1	1
	E	2	2	1	1	2	2	1	2	2	2
	F	1	1	1	1	1	1	1	1	1	1
	G	1	1	1	1	1	1	1	1	1	1
	H	1	1	2	1	1	1	1	1	1	1
	I	1	1	2	1	1	1	1	1	1	1
	J	1	1	1	1	1	1	1	1	1	1
III	A	2	1	2	2	1	2	2	2	2	2
	B	2	2	2	2	1	2	2	2	2	2
	C	2	2	2	2	1	2	1	1	2	2
	D	1	1	1	1	1	2	1	1	1	1
	E	2	2	2	2	2	2	1	2	2	2
	F	1	1	2	1	1	2	1	1	1	1
	G	1	1	2	1	1	2	1	1	1	1
	H	2	2	2	1	1	2	1	2	2	2
	I	2	2	2	1	1	2	1	2	2	2
	J	2	1	1	1	1	1	1	1	1	1
IV	A	2	2	2	2	3	3	2	2	2	2
	B	2	2	2	2	3	3	2	2	2	2
	C	2	2	2	2	3	3	2	2	2	2
	D	2	2	2	2	2	2	2	2	2	2
	E	2	2	3	2	3	3	2	2	2	2
	F	2	2	2	2	2	2	2	2	2	2
	G	2	2	2	2	2	2	1	2	2	2
	H	2	2	2	2	2	2	2	2	2	2
	I	2	2	2	2	2	2	2	2	2	2
	J	2	2	2	1	1	1	1	2	2	2

Based on the category mode is seen that, in the first stage and the second most teachers still in the category I (less), but the third and fourth stages have been in the category 2 (enough). None of the prospective teachers who are in category 3 (good). In the third stage the teacher candidate has done *peer teaching*, at that stage prospective teachers obtain *feedback* from peers, teachers, tutors and lecturers. At that moment the teacher candidates gain input for reflection. In stage IV (after the *real teaching*) all teachers have to be in category 2 (enough). This is presumably because the teacher candidate has gained hands-on experience and also *feedback* from lecturers, teachers, and students.

Based on analysis of the development of prospective teachers' PCK development pattern seen no less category to the category of pretty. To further illustrate the development, the authors use the term *pre-PCK*, *PCK Growing* and *maturing PCK*. The term pre PCK describe the early stages of the interaction between pedagogy with content. In the *pre-PCK* prospective teachers have not been able to find a link between knowledge and pedagogical content knowledge so that no slice / integration between the two. At this stage of *Growing PCK*, teacher candidates begin to integrate content and pedagogy that has begun to form a wedge between content and pedagogy. In the *maturing* stage of

PCK, it has been increasingly mature teacher and teachers are able to integrate content and pedagogy in a flexible and rational.

b. The hypothetical model PCK Development Prospective Teachers

From this study it was revealed that the PCK started growing (*growing*) after prospective teachers do *peer teaching* and PCK growth began after the *real estate teaching* prospective teachers do. That is the real experience at the school was instrumental to the growth of prospective teachers PCK. For it is necessary to develop a gradual and structured approach that early experience to prospective teachers to interact and gain experience in a school, for example, with the

observation stage, preparing lesson plans with the teachers, *co-teaching*, and *real teaching*, that reflected in the model image follows.

The results of this study indicate that teacher education should not be split between the school and campus. Education teacher candidates must integrate the university and the school, so the campus for prospective teachers are schools and universities. Given the important role of teachers in the educational process teacher candidates, the university should choose a teacher tutors are really competent and could be a model. The program structure is illustrated in the following hypothetical model.

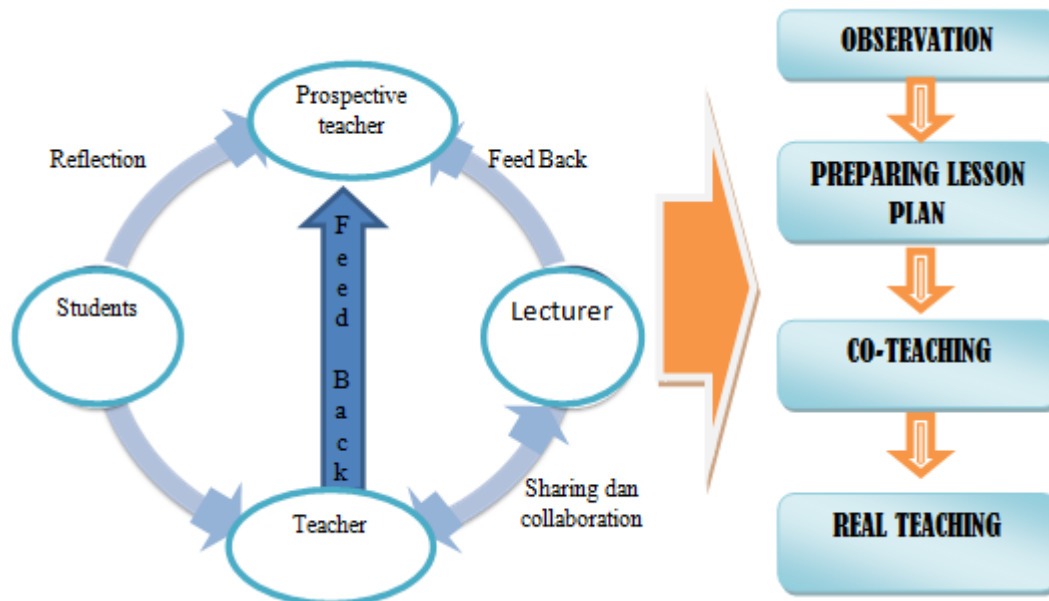


Figure 5.16: Hypothetical model of PCK Development Prospective Teachers

In this model there is a *feedback* mechanism and reflection for teacher candidates obtained from the teacher tutors, teachers and most importantly students. *Feedback* and reflection took place early on (since the phase of observation) so that prospective teachers have early always think about the student / consider the students in each action.

4. Conclusion and Recommendation

a. Conclusion

Based on the results of research on the development of PCK prospective teacher education program on consecutive lines, it can be concluded that the development of prospective teachers' PCK it is a continuum, stages according to the stages and processes they earn. PCK development begins with pre PCK, which is a condition where prospective teachers have mastered the content and pedagogy, but have not been able to unite the two into PCK. The unification of content and pedagogy seems just started taking place after the prospective teachers do peer teaching. After the new peer teaching was PCK prospective teachers develop into Growing PCK. At this stage there union between content and pedagogy. Stages PCK after growing PCK is maturing PCK (PCK are already more mature). To facilitate the development of prospective teachers' PCK, educational models prospective teachers need to be gradual and structured early gives experience to prospective teachers to

interact and gain experience in schools, for example with the observation stage, preparing lesson plans with the teachers, co-teaching, and Real teaching.

b. Recommendation

Referring to the results of research that has been obtained, submitted the following recommendations. Recommendations aimed at prospective teachers PCK development effort based on the results that have been obtained. First, the prospective teacher education should be shared between the universities and schools. School is not just as a teaching practice, but it is a second campus for prospective teachers. For that universities should cooperate with the school, both in programming and coaching prospective teachers. Second, the process of teacher education candidates should not be split between content and pedagogy that teacher candidates between content knowledge and pedagogy are not separate. Third, because the experience is very influential on the development of prospective teachers' PCK, the prospective teachers need to be given sufficient opportunity to teach and discuss with teachers and lecturers. Therefore PCK constantly evolving, it is necessary to sustainable development for teachers, for example through MGMPs or other activities.

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and Learning was, Evaluation Science Education for Postgraduate Students SPSUPI, the basic ability of Scientific Work and Implications in Learning Science.

Dr Ari Widodo, M.Ed. is a lecturer at the University of Education Indonesia (UPI), undergraduate biology education obtained in IKIP Bandung (1991), master's degree (S2) obtained from Deakin University in 1996 and in 2004 earned a doctorate in science education at the University of Kiel. Some scientific work include: development of a package of video-based coaching program to improve the competence of teachers to teach science, *Dual mode in-service training as an alternative models for teachers professional development (PD) in Indonesia*, *Alternative models for preparing science teachers for standardized international schools: Integrated pre service and in-service programs*, *Facilitating teachers' professional development through lesson study: Insight from two years at junior high school lesson study Tunas Agro*.

Author Profile

Dr. Yenny Anwar, M Ed, is a lecturer at the University of Sriwijaya (UNSRI) - Palembang. She graduated from Faculty UNSRI in 2002. In 2006 the program to continue studying S2 in Science Education, State University of Surabaya (UNESA) graduated in 2008. In 2010 the opportunity to continue S3 in Science Education Studies Program, Graduate School of Education University of Indonesia (UPI). The focus of research is the development of PCK. Some scientific works include: Ability Profile PCK biology teacher candidates who follow the Professional Teacher Education Program through consecutive approach. Subject Specific capabilities and Pedagogy Biology Teacher Candidates after Odd Semester Following presented at the National Seminar on Post, Bachelor UNESA, 2013, ISBN: 978-602-7508-55-2. Pedagogical Content Knowledge Capability Profile Biology Teacher Senior and Junior Biology Teachers presented at the National Seminar on Research, Education and Application of Mathematics, Faculty UNY, 2013, ISBN: 978-979-96880-7-1, and pedagogical content knowledge Measuring pre service in consecutive programs presented at the International Seminar on Mathematics, Science, and Computer Science Education FPMIPA UPI, October 19, 2013.

Prof. Dr Hj. Nuryani Rustaman M. Pd is a lecturer at the University of Education Indonesia (UPI) -Bandung. An undergraduate biology education obtained from Bandung Teachers' Training College (1978), then a master's degree and doctorate education educational IPA obtained from Indonesia University of Education. Several scientific papers that have been published, among others; Science Learning the Aspirational, Science Literacy