

Revitalization of Teacher Character Through Pedagogical Content Knowledge

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Abstract

Character education becomes a necessity because education not only makes students intelligent minds but also emotionally intelligent. Character formation in learners can only be done by teachers who character as well. The character teacher always strives and strives to develop the potential of her intelligence to improve the learning process in her classroom by integrating content, pedagogy and moral values. This integration is encapsulated in Pedagogical Content Knowledge (PCK). PCK is an integrated collection of knowledge, concepts, strategies, and values that teachers develop in teaching situations. The ability of PCK teachers and prospective teachers will progress, through the stages of PCK Pre, Growing PCK, and Maturing PCK. These developments are different for each individual, some are growing quite rapidly and some are not. Some of the factors that influence the development include the role of teachers or lecturers who provide inspiration for prospective teachers, the ability and internal motivation of teachers and prospective teachers, teacher assistance guardian and lecturers and the frequency of teaching. To facilitate the development of prospective teacher PCK's, the teacher education model needs to be graded and structured in advance to provide experience to prospective teachers to interact and gain experience in school, IE by observation stage, preparing lesson plans with teachers, Co-teaching, and Real teaching.

Keywords: Character education, Pedagogical Content Knowledge, Pre PCK, Growing PCK, Maturing PCK.

Preliminary

"The teacher is the mother of all professions", the sentence implies that from this profession the teacher will be born other professions. The sentence implies that teachers occupy a very vital role in improving the quality of education that gave birth to these other professions. Therefore, it is feasible for a teacher to teach on a certain type and level of education. The very vital role has been already true occupied by professional teachers.

Professional teachers are teachers who continue to improve their sensitivity and creativity. Teacher's sensitivity is the ability of teachers to develop their pedagogical sensitivities for learning purposes. These sensitivities also relate to the character of each teacher. A teacher of character is a teacher who is constantly ready to review the direction of his life and life and make the teaching profession as an awareness of the vocation of life. According to Ditjen Mendikdasmen-ministry of national education, character is a way of thinking and behaving that characterizes each individual to live and work together well in the scope of family, community, nation and state. The character teacher always strives and strives to develop the potential of her intelligence to improve the learning process in her classroom by integrating content, pedagogy and moral values.

Character Education And Teacher Character

The Ministry of Education and Culture of the Republic of Indonesia has made a policy to integrate character education into the curriculum, ranging from preschool level, primary education, secondary education both on formal and non formal education, to universities. Character education becomes a necessity because education not only makes students intelligent mind, but also emotionally intelligent, so that its existence as a member of society becomes meaningful for himself and others. The journey of one's life is greatly influenced by what his character looks like, this character is a blend of internal and external factors of the individual. In other words, a person's character can be shaped by the surrounding environment. Therefore, educational opportunities in shaping a person's character are very possible. What character will be formed in the educational process?. There are 18 values in the development of cultural education and character of the nation designed by the Ministry of Education and Culture. These values are; religious, honest, tolerant, disciplined, hard work, creative, independent, democratic, curiosity, enthusiasm, love of the country, appreciates achievement, friendly/communicative, love peace, love reading, caring environment, social care and responsibility.

Teacher profession is strategic, because the bearer has a genuine task for humanity, humanity, intelligence, culture, and character building. If character education has been touted what about the character that will drive character education?

If there is a motto that states that there is no quality education, without the presence of a professional teacher. The same thing when there will be no character education without a character teacher. Character formation is done through exemplary, intervention, consistent habituation, and reinforcement. Character formation in learners can only be done by teachers who character as well. The character teacher has the following characteristics: a) loves her protegee; b) understanding the socio-cultural background of learners; c)

able to motivate; d) love the teaching profession; e) want to continue to learn Besides through model of school environment, this character we must integrate with the learning process. This integration is encapsulated in Pedagogical Content Knowledge (PCK).

Pedagogical Content Knowledge

A good teacher should master the content (subject matter) and teaching science (pedagogy). Content is a scientific knowledge that should be mastered by teachers, including facts, concepts, principles, laws, and theories (Siregar, 1998). Pedagogy means ways that can be done to help students learn and solve problems of science (Enfield, 2000). Teaching is a complex process. Knowing content and pedagogy is important, but how to integrate it into learning is much more important. Teaching not only conveys information from teacher to student, but covers many activities and actions that must be done.

As teachers of character, teachers should continue to develop their teaching process in the classroom and prospective teachers continue to practice their skills in designing lesson plans. The minimum competence that must be possessed by a prospective teacher is able to plan and combine appropriate science teaching strategies for learners with diverse backgrounds and learning styles while beginner teachers should be able to plan and regularly incorporate alternative activities to teach the same concept; can identify principal differences in learners in the student population (NSTA, 1998). One of these competency development efforts is by understanding and continuing to develop Pedagogical Content Knowledge (PCK) capabilities. Pedagogical Content Knowledge is a knowledge that must be understood by a teacher and prospective teacher because a teacher must be familiar with the concepts and difficulties that will be faced by students and can organize, compile, run and assess the subject matter which are all summarized in Pedagogical Content Knowledge. PCK is an integrated collection of knowledge, concepts, beliefs and values that teachers develop in teaching situations (Fernandez-Balboa & Stiehl, 1995; Gess-Newsome, 1999; Loughran, Milroy, Berry, Gunstone, & Mulhall, 2001; Loughran, Mulhall & Berry, 2004; Marks, 1990; Van Driel, Verloop, & de Vos, 1998 in Lee and Julie, 2008). PCK is an amalgam between content and pedagogy that is already integrated with values that continue to evolve with experience.

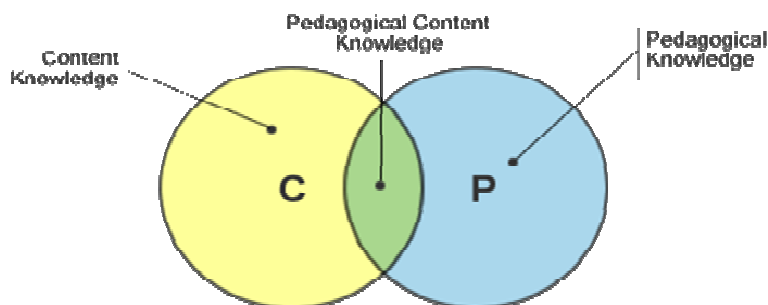


Figure 1. Dimensions of professional knowledge.

PCK is an academic idea that presents an intriguing, constantly evolving idea and through the experience of how to teach certain content in a special way so that students' understanding is achieved. (Loughran, Berry & Mulhall, 2006). PCK is an idea rooted in the belief that teaching requires more than just giving subject matter knowledge to students and students learning not merely absorbing information but many other aspects that must be applied. PCK is not the same single form for all teachers who teach the same subject area, but rather special skills with distinct individual privileges influenced by teaching context, content and experience. PCK can be the same for several teachers and different for other teachers, but at least a meeting point of professional knowledge of teachers and teacher skills.

According to Van Driel et al. (1998, in Bond-Robinson, 2005) PCK is considered knowledge of expertise, defined as an integrated knowledge that presents the accumulation of teachers wisdom regarding their teaching practices. As knowledge of expertise guides teacher action, in practice, it includes teacher knowledge and beliefs about various aspects such as pedagogy, students, subject matter and curriculum. Knowledge of this skill comes from previous education, teacher's personal background, teaching context, and through on-going teaching experience. Therefore the wisdom of knowledge of skill produces effective behavior on the part of teachers who have it.

The Important Position Of Pck In Developing Teacher Professional Practices

Shulman introduced PCK as a specialized knowledge, claiming that teachers need a strong PCK to be the best teacher possible. Shulman's (1986, 1987) *suggestion that teachers needed strong PCK to be the best possible teachers has resulted in a range of studies into PCK in pre-service science teacher education.* In harmony with Shulman's statement, *The National Science Education Standards (National Research Council, 1996)* said ;

“incorporated the concept of PCK as an essential component of professional development for science teachers”. “A teacher’s Understanding of how to help students understand specific subject matter” (Magnusson, Krajcik, & Borko, 1999). The epithetical picture can be seen in Figure 2. Here.

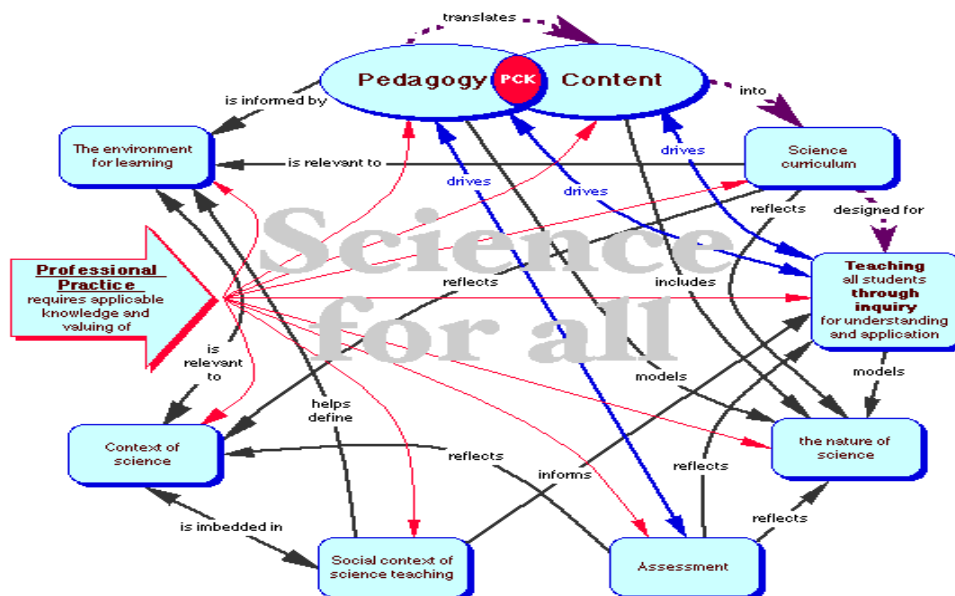


Figure 2. Linkage of PCK to the professional practice of teachers (Enfield, 2000)

According to Science Education Teachers Standards that in the framework of science for all (Science for All), then the important thing is how professional practice can sustain the realization of Science for All (Enfield 2000). The knowledge and values that must be possessed to realize the professional practice consist of several interrelated aspects which include: learning environment, pedagogy, content, science curriculum, inquiry learning, the nature of science, assessment, social context of science learning, and the context of science. In pedagogy and content, the wedge between the two is the PCK that can help the teacher understand how to teach a particular content. PCK provides useful reviews for teachers to help students see assumptions in science, so they are easier to understand. Essentially, professional work is supported by a particular science in depth that is only possible for appropriate educational institutions, so that its performance is based on scientifically accountable scholarship.

Pedagogical Content Knowledge Category Categories

To be able to recognize and assess their own PCK development, teachers need to have a rich conceptual understanding of the subject matter they teach. This rich conceptual understanding combines with expertise in the development, use and adaptation of teaching procedures, strategies and approaches to use in the classroom, the incorporation can generate amalgam from the content and pedagogical knowledge described by Shulman (1986, 1987) as PCK. According to Koppelman (2008) PCK can be seen as an intersection between pedagogy and content. Therefore PCK is a practical way of knowing the subject matter used by teachers when they teach. PCK is a form of professional knowledge of teachers composed differently from subject matter knowledge of teachers.

As teachers and prospective teachers who continue to want to learn the character, have us evaluate the ability of our PCK?. Each of us can measure which category our PCK capability, there are three categories of PCK's ability, Pre PCK, Growing PCK and Maturing PCK (Anwar, 2014). The categories can be seen in the following table:

Table 1. Category of Teacher's PCK Ability

No	Aspect	Type PCK		
		<i>Pra PCK</i>	<i>Growing PCK</i>	<i>Maturing PCK</i>
1.	Aim	Identify objectives with limited consideration and not in accordance with the standards set out in the curriculum	Identify objectives and have rational reasons for the concepts to be taught and adapted to the standards set out in the curriculum	Identify goals and have rational reasons based on students' materials and needs and with high flexibility to adapt to the standards set out in the curriculum
		The objective formula does not accurately describe the competence to be achieved.	The objective formula describes accurately the competencies to be achieved.	Goals to be achieved more accurate and flexible in accordance with the competencies and learning experience provided
2.	Concept	Important concepts that appear to be taught to the students there are still less relevant to the material, the concept is still there that is an attribute so the concept that appears still very much / very specific	Important concepts that are raised to be taught to students already refer to the core concepts and are relevant to the material.	The important concepts raised to be taught to students are the main concepts that are inclusive of some other concepts.
		Can not determine the breadth and depth of material that will be taught to the students. The depth and breadth of the material refers to a general concept so that it is not clear the depth and breadth for each core concept.	Can define clearer limits to the breadth and depth of the material being taught. The depth and breadth of matter refers to the core concepts.	The breadth and depth of matter is more accurately related to the core concepts that will be taught and consider the abilities and conditions of the students.
		Begin to identify common misconceptions to students or misconceptions in the field of teaching	Identify and anticipate misconceptions of students	Anticipate systematic misconceptions of students and plan activities and discussions to explain and correct them
3.	Pedagogy	The teaching considerations refer to the material.	Consideration of teaching not only on material but also supporting facilities.	Consideration of teaching on materials, support facilities, reflection of teacher understanding and student condition.
		The teaching strategy used is still general to all concepts on substance transport material.	Adjust learning strategies with the characteristics of each concept in the materials and competencies to be achieved.	Can change the learning strategy based on consideration of the characteristics of each concept and competence to be achieved other than that the teacher can take advantage of the existing moment.
		The order of presentation of the material is still related to the order of presentation of the material contained in the book.	The order in which the material is presented considers the order in which the material is presented in the book and the method / stage of the teaching model	The order of presentation of the material more flexible related to the results of material analysis, teaching strategies and student conditions
4	Evaluation	Measuring students' understanding by using evaluation tools in general, is still limited to written tests.	Using written tests, developed instruments take into account each concept.	Using more creative assessments, able to develop their own assessments according to given material analysis, student conditions, and relevant methods so that they are right on target.

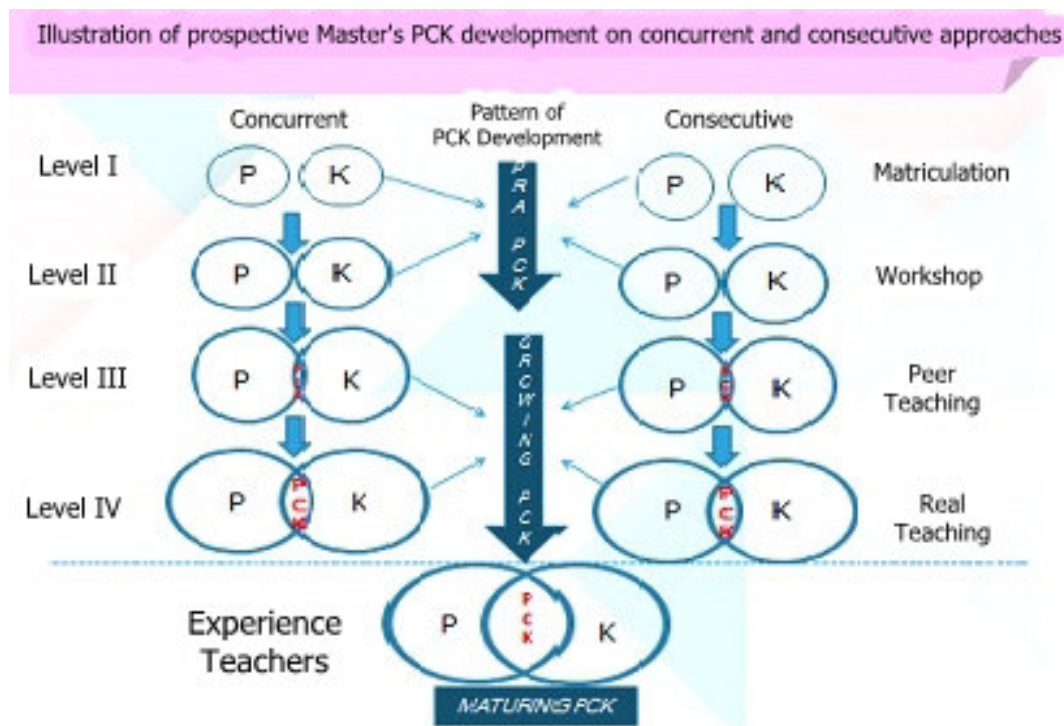


Figure 3. Illustration of prospective Master's PCK development on concurrent and consecutive approaches

According to Anwar (2014), the development of prospective teachers PCK is continuum, gradually according to the stages and processes they get. The development of PCK begins with pre PCK, which is a condition where prospective teachers have mastered the content and pedagogy, but not yet able to unite the two into PCK. At the Growing PCK stage there is already a union of content and pedagogy. Stages of PCK after growing PCK is maturing PCK (PCK which is more mature). Prospective teachers have not been in PCK maturing stage. The maturing stage demonstrates the ability of prospective teachers who have high accuracy, flexibility, creativity and consider every aspect of action rationally in both planning and actioning the learning process. Anwar's research results (2012) show that senior teachers are more flexible in choosing teaching strategies with more rational reasons.

The development of PCK is influenced by several factors such as the role of teachers or lecturers who provide inspiration for prospective teachers, the ability and internal motivation of teachers and prospective teachers, teacher assistance guardian and lecturers and the frequency of teaching teachers.

The way a teacher teaches will contribute to the student. Students will record fun teaching activities that are not fun for them. Especially for student who prospective teachers, they will be inspired by the teachers or lecturers they deem well that will influence the way they teach. Learning from the model (teacher or lecturer) seems to be mostly done by prospective teachers, although according to Loughran, Berry & Mulhal (2012) actually learn from hands-on experience when interacting with students much better to improve the learning done.

The development of prospective PCK teachers is also influenced by their internal abilities and motivations. Each individual has different internal abilities, either due to experience, talent or a combination of both. This internal ability will affect their ability to teach. However, internal motivation seems to be more influential. In the case of prospective teachers of the consecutive approach, some of them are actually not interested in becoming teachers, so the teacher education approach becomes a heavy burden for them. Teaching activities are still a burden to them. This affects the learning climate in the classroom. A positive learning climate affects the expected achievements (Eggen & Kauchak, 2012). A pleasant environment will create a conducive atmosphere and encourage the participation of all learners, which in turn will reduce interpersonal tension, resulting in a positive attitude and fun in learning (Lang & Evans, 2006).

The development of this PCK can be stimulated from the beginning, that is when still a prospective teacher. To facilitate the development of prospective teacher PCKs, the teacher education model needs to be graded and structured in advance to provide experience for prospective teachers to interact and gain experience at school, for example by observation stage, preparing lesson plans with teachers, Co-teaching, and Real teaching. Through early recognition from the outset the prospective teachers already have knowledge about the school and students as well as other matters related to the teacher's duties. Thus, from the beginning they have linked the lesson planning they will make based on the student's circumstances and the real situation in the field.

Cover

The ability of PCK teachers and prospective teachers will progress, through the stages of Pre PCK, Growing PCK, and Maturing PCK. These developments are different for each individual, some are growing quite rapidly and some are not. The maturing stage demonstrates the ability of prospective teachers who have high accuracy, flexibility, creativity and consider every aspect of action rationally in both planning and actioning the learning process. If we associate with professional meaning, then at maturing stage is a stage which can be juxtaposed with professional word. The professional meaning should be widely viewed, the teacher's character is part of the teacher's professionalism. Professional teachers are not only able to provide an understanding of a material content, but are able to encourage, and inspire the children of the nation to rise up to be the successor of the nation's struggle.

Let's ask ourselves whether we want to become professional teachers. Professional teachers are supposed to make changes. Each of us can lead change, to be a leader of change, the teacher must make changes from within himself first.

These changes can be started with self-evaluation, we can measure our professional ability. Is our ability already on PCK maturing stage or still at an early stage that is Pre PCK?. If the teachers are willing to make a change, in fact the resurrection of the nation is in sight.

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