A REFLECTION PAPER ON DEVELOPMENT OF THE PEDAGOGICAL CONTENT KNOWLEDGE SCALE FOR PRE-SERVICE TEACHERS: THE VALIDITY AND RELIABILITY STUDY

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Pedagogical content knowledge has been defined in various ways over the years but central to the idea is that teaching a particular concept to a group of students in an effective and meaningful way (Shulman, 1986). More specifically, it refers to the knowledge of where students struggle, common misconceptions students may have about the concept of interest, ability to decompose chunks of knowledge for beginners to they can relate, engage in and effectively learn the topic and for the experts to provide the challenge needed so they can deepen their current understanding.

Based on the study, it tackles about the development of scales for PCK to ensure the pre-service teachers will obtain enough knowledge about their field of study. And it is also being tested its validity and reliability; it was transpired in this study the PCK developed by the authors were ready to implement. This study really helps the teacher training institutions to make sure that their students will obtain in-depth knowledge on pedagogical content is a generic knowledge about pedagogy, how students learn, teaching approaches, methods of assessment and knowledge of different theories about learning. While content knowledge is knowledge of the subject matter without consideration about teaching the subject matter. Pedagogical content knowledge is an “amalgam” of content and pedagogical knowledge (Shulman, 1986). It includes an understanding of what makes the learning of specific topics easy or difficult. PCK is a teachers’ understanding of how to help students understand specific subject matter.

In this study, it focused on the development scale for pedagogical content knowledge and its usability. To ensure how do teachers convey the information to students in an
appealing and comprehensive manner which would allow students to develop enthusiasm, insight, and skills from a positive learning environment. This is a great help for teachers or future teachers to be well versed on the subject matter content knowledge and the pedagogical content knowledge in order to shared or teach every detail of the lesson in a creative manner to achieve effective teaching. Effective learning occurs only when teacher knowledge is highly integrated and it is also a complex interaction between the teacher and the students. Since the teacher will become well versed on his field of study, he might design effective lesson which addresses the learning needs of the students with meaningful and relevant learning opportunities with students’ comprehension.

One of the implications in this study is that the preparation of teachers especially in pre-service. Abell (2007) posits that understanding the development and interaction of subject matter knowledge and PCK is critical for the success of teacher education. Hence, teacher training institution must provide learning opportunities for the pre-service teachers, what are the good practices, activities and among others to ensure quality learning because what these pre-service teachers learn in their school what they will become in the field. Not only observing mentor teachers or professors will result in the development of PCK among pre-service teachers, the knowledge will also gain through the teaching experience. The effective pre-service teachers’ preparation must include strong mentoring, reflection upon practice, collaboration among teacher training institutions and share their share best practices in the implementation of PCK. Pedagogical content knowledge is about being knowledgeable of content, about students’ misconceptions related to a specific science topic, ability to notice fallacies in student reasoning, gaps in their knowledge. Teacher’s role then becomes developing responsive instruction to address students’ learning needs, support them in pursuit of new knowledge, and empower them with knowledge and skills that can be transferable to other relevant contexts.
Teachers at the teacher training institution should employ different teaching methods in both content and pedagogical courses in teacher education programs because when these teachers emphasize pedagogical content knowledge and instruct content knowledge conceptually are influential for pre-service teachers in order to develop their PCK and content knowledge. Teachers who serve as the role models for pre-service teachers in terms of using instructional strategies and other components of PCK effectively should be selected among the roster of qualified faculty members because not all the faculty members are qualified to teach in order to develop the PCK among the pre-service teachers. Teachers who have solid knowledge on PCK are more capable of helping his students achieve a meaningful understanding about the lesson and students’ understanding of the topic goes beyond procedures. Pedagogical content knowledge remains a vague form of knowledge which cannot be easily isolated and studied separately from other teacher knowledge bases because it is individualistic, is developed by the teacher and is unique to that teacher. PCK development is time dependent and requires mutualistic interaction between pre-service teachers and teachers in the teacher training institution. More so, the training teacher institution must provide relevant learning opportunities for the pre-service teachers because it will give them a chance to learn about different teaching methods on how to teach the lessons that will help them in their career as a teacher.

Developing valid and reliable instruments to measure teacher PCK is important. Through this, it can help to design a relevant curriculum and understandable by the students. There is also need for professional development models across contexts that can improve teachers’ PCK. The pre-service teachers need to be exposed to learning opportunity that not only deal with the content knowledge of the lessons only but also focuses on knowledge domains of students’ misconceptions and knowledge of teaching strategies that could be used to effectively teach the lessons.
The results of this study is very important for the teacher training institutions it will serve as their guide to change the curriculum in their education programs in order to increase content and pedagogical content knowledge of pre-service teachers.

Reference: