

Teacher knowledge

What Every Teacher Should Know about It

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Abstract: It is certain that all teachers must possess knowledge. The question, however, is: „What kinds of knowledge every teacher aspiring to be successful in his or her job should have?“ The purpose of this paper is to provide, if not definitive, than at least an elucidating answer to this question. The paper deals with three kinds of knowledge all teachers should possess: content or subject matter knowledge, pedagogical knowledge and pedagogical content knowledge. Content knowledge refers to the teacher’s knowledge of the subject matter he/she teaches, and increases the teacher’s own confidence, which directly influences the level of confidence the students’ have for the teacher. Pedagogical knowledge, on the other hand, is not directly associated with the subject matter, but can still have an immense impact on the final results of the learning process. It is concerned with improving the relationship between the students and the teacher by helping the teacher recognize a variety of different situations which can appear in the classroom and equipping the teacher with appropriate techniques which enable him/her to respond appropriately to each of those situations. The third kind of knowledge, pedagogical content knowledge, unites the previous two, and helps the teacher find the methodologically most appropriate ways to present the given content. As elaborated in the paper, taken together, these three kinds of knowledge improve rapport between the students and the teacher and maximize student achievement, which is the ultimate goal of any learning process.

Teacher knowledge

The word “knowledge” is in its own nature closely associated with learning and teaching. It goes without saying that a teacher must possess knowledge. However, it is often unclear what this knowledge truly encompasses. Is teacher knowledge a matter of being able to recite piles of books from cover to cover? Is a successful teacher one who knows how to create a positive learning climate in which his students will feel motivated to explore the subject he teaches? Or is an effective teacher in fact a combination of these two elements, and many more?

Even in the modern era, many of those not very familiar with the science of teaching and learning would claim that the only kind of knowledge a teacher should possess is *subject matter or content knowledge*, which can be defined as “a teacher’s quantity, quality, and organization of information, conceptualizations, and underlying constructs in their major area of study” (Zeidler, 1999). For those who claim so, the aforementioned avid reader would have just enough skills to transmit his knowledge onto everybody he attempts to teach. Practice, however, has proven that this is not the case. A person can indeed be the best expert in any field, and yet lack pedagogical training needed to successfully manage the classroom. When this is the case, discipline issues may arise, the students can become confused and uninterested, and the teacher, despite his tremendous subject matter knowledge, can feel helpless. In such cases, with the teacher unable to hold the attention of the students and inspire them to acquire new knowledge, learning – which is normally the ultimate goal of any teaching process - becomes of secondary importance.

This fact emphasizes the need to introduce the second kind of knowledge a teacher needs to possess – *pedagogical knowledge*, knowledge which enables the teacher to create a motivating, student-centered environment conducive to learning. To acquire such knowledge, the teacher needs not only to have high qualifications in his subject area, but also undergo special pedagogical training, through which he would be made aware of the different affective, cognitive and developmental factors which influence the learning process. Through such training, the teacher would also acquire practical strategies for dealing with different situations which may arise in the classroom and providing the most appropriate responses for them.

However, when kept separately, these two qualities are still not sufficient to produce the desired results, as they remain unconnected and fragmented. The problem lies in the fact that neither of these two kinds of knowledge helps the teacher find the best, most appropriate strategies for teaching particular areas of the subject matter. When a teacher possesses no knowledge of such strategies, his teaching will suffer despite his knowledge of the content matter and the skills he acquired through pedagogical training. What is needed then is a combination of these two elements, an area which will unite the teacher's knowledge of the subject he teaches and his ability to make the classroom a place where that knowledge can be shared. This 'common area' is called *pedagogical content knowledge*. These three main kinds of knowledge intertwine (amongst each other and with various other kinds of teacher knowledge) to create a solid base upon which the teacher can build his relationship with students and a more successful learning environment.

Content knowledge

It seems very logical that no teaching can take place if the teacher is not very familiar with the subject he/she is meant to teach others. This teacher trait is also recognized as extremely important by students, so, for example, Turkish preparatory school students describing an effective English language teacher listed teacher's knowledge of English as the most important characteristic (Arikan et al., 2008). Numerous other studies which examined the efficiency of teachers also yielded similar results, so Bruce D. Barnes (2010) reports that many of the studies he reviewed have found that students believe effective teachers:

“ have sound content knowledge of their discipline (Chen, 2005; Faranda & Clarke, 2004; Lasagabaster & Sierra, 2005; Kutnick & Jules, 1993; Xiao, 2006)

- are able to answer complex questions (Faranda & Clarke, 2004)
- are proficient in English (ELT) (Lasagabaster & Sierra, 2005; Park & Lee, 2006; Rammal, 2006)
- have a sound knowledge of grammar (ELT) (Lasagabaster & Sierra, 2005; Park & Lee, 2006)“

Still, it seems this teacher characteristic is perhaps not yet fully understood and appreciated by teachers and education students, which results in teachers who have insufficient knowledge of their subject area and are thus unable to help students learn.

A good grasp of the subject he/she teaches can make a tremendous influence on how the teacher manages the classroom and facilitates the process of learning. According to a research paper entitled 'Why Teacher Content Knowledge Matters', content knowledge on the part of the teacher facilitates learning by influencing the way teacher present the content to their students (with more knowledgeable teachers making more connections with real life and drawing more on students previous knowledge). This characteristic, as reported by Barnes (2010), was deemed very important by students in studies conducted by Faranda and Clarke (2004) and Kelley et al. (1991). Content knowledge also influences the way teachers use teaching materials, so teachers who have a deeper knowledge of the subject tend to be more able to link lessons into a coherent sequence and identify the key points of each individual unit (MSPKMD, 2008). A study of outstanding university teachers, conducted by Hativa et al. (2001) has shown that these strategies were very highly or highly used by all the observed teachers (all university professors, experts in the area of their subject). By using their knowledge in such diverse ways, teachers with deeper content knowledge pose more difficult challenges before their students, thus further developing their cognitive skills and making them more involved in the learning process (Stronge, 2007; Neubrand, 2008).

Still, all this does not necessarily mean that in all cases teacher subject matter knowledge will have a direct impact on student achievement. The debate on this issue is heated, and different studies have yielded different results. Perhaps the most accurate view is the one of Monk (1994) who argues that 'teacher subject-matter knowledge was related to student achievement only up to a certain point' (Marzano, 2003, p.64). What this means is that there is a threshold above which teacher content knowledge becomes less relevant. For example, whereas teacher's knowledge of basic characteristics of English sounds and the way they interact with each other is important when teaching English phonetic alphabet to high school students, in-depth knowledge of dialectal variations is not. On the contrary, such knowledge, if the teacher attempts to transfer it onto students (for whom it has no relevance or practical usage) can even negatively interfere with students' learning and motivation. Of course, the threshold varies based on the level or grade of the students being taught (Marzano, 2003), so more content knowledge is needed when teaching advanced students than when dealing with young children.

Pedagogical knowledge

The exact opposite, however, may hold true for pedagogical knowledge. Since young learners possess many characteristics unique to their own age group, it may be far more challenging to balance the various elements of classroom management (discipline, rapport, motivation, staying on-task etc.) when teaching them than when dealing with teenagers or adults. Age, however, is not the only factor which influences how the

teacher should behave towards students. Many other characteristics, ranging from learning style to culture-specific attitudes and beliefs, must be taken into account when deciding how to treat individual students and the class as a whole. These characteristics pertain not only to students, but also to the learning environment and the society in which the learning process is taking place. Being able to identify, take into account and successfully deal with these differences is what constitutes the pedagogical knowledge of teaching.

In fact, all teacher behavior in the classroom related to personal interaction with the students can be connected to pedagogical knowledge. A teacher who possesses this kind of knowledge knows which types of behavior are appropriate in which kinds of situations. Such teachers understand the variety of contexts which can appear within the classroom and are able to adjust their behavior accordingly. This notion shows that pedagogical knowledge is in fact very much connected with the personal characteristics of the teacher, and that, through knowledge, teachers can reflect on their traits and behaviors and, when necessary, alter them to suit the needs of their students. Such reflections and alterations directly influence student-teacher relationship and the classroom atmosphere, thus directly impacting students' learning.

Perhaps the best way to show the importance of pedagogical knowledge is through a practical example. Let us consider the example of student misbehavior - one of the most debated issues and one of the biggest teacher problems in the classroom. Many new teachers are worried about handling misbehavior properly. The worry arises from the fact that, when handled wrongly, student misbehavior can lead not only to deterioration in the learning achievements of that particular student, but also undermine the whole class' trust in the teacher and, through a chain reaction, make the entire class unresponsive and unwilling to learn. These severe consequences show the importance of pedagogical knowledge. A teacher who has no pedagogical training, and possesses only content knowledge, might resort to such ineffective practices as yelling, threatening or humiliating the misbehaving student, which would only worsen the situation and ultimately lead to the teacher's loss of control over the class. On the other hand, a teacher with appropriate pedagogical knowledge will know that the right way to handle discipline issues is to prevent them from ever happening by setting rules early on and consistently enforcing them. Even if a discipline problem arises, a pedagogically-knowledgeable teacher would know that the right thing to do in such a situation is to remain calm, react immediately and react to the behavior and not the student (Harmer, 2007). When following these and similar instructions which are a key part of pedagogical knowledge of any teacher, the teacher helps foster a positive learning environment, practices good classroom management and improves his rapport with the students.

Pedagogical content knowledge

However, as has been previously noted, pedagogical and content knowledge alone do not constitute a framework strong enough for effective teaching. An effective teacher must also possess a third kind of knowledge, the one which unites and combines the previous two concepts and provides a kind of a common ground on which the different aspects of the professional called 'teacher' meet to produce the best possible results. This third kind of knowledge is called *pedagogical content knowledge or PCK*.

In order to fully understand the concept of 'pedagogical content knowledge', it is necessary to introduce its definitions, as formulated by Lee S. Shulman, the educational psychologist who first introduced this term. In his landmark paper 'Those Who Understand: Knowledge Growth in Teaching', he describes PCK as follows:

'Within the category of pedagogical content knowledge I include, for the most regularly taught topics in one's subject area, the most useful forms of representation of these ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations - in a word, the ways of representing and formulating the subject that make it comprehensible to others...Pedagogical content knowledge also includes an understanding of what makes the learning of specific topics easy or difficult: the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning of those most frequently taught topics and lessons.' (Shulman, 1986, p. 7)

After defining the term, it is time to explore the practical implications of pedagogical content knowledge for foreign language teachers. If we consider an EFL teacher attempting to teach his Bosnian students the usage of the Present Perfect tense in English, we will better understand why pedagogical content knowledge is so important. For the purposes of achieving this goal, we will compare the ways in which two very different teachers - one possessing PCK and the other lacking it - would attempt to teach this challenging grammar point. A teacher lacking PCK might attempt explain the usage to the students by using complex metalanguage, introducing too difficult oral explanations and presenting them with a myriad of abstract grammar-book rules. All of this could have inimical effects on students' learning, making them even more confused, which may lead to disinterestedness and lack of motivation, ultimately jeopardizing learning. The teacher possessing PCK, on the other hand, would first of all realize that that particular subject can be very difficult for Bosnian students because

there is no tense equivalent to Present Perfect in their own language. He would consider the students previous knowledge of the tense system in their own language and in English and attempt to tailor his teaching to suit this previous knowledge and build upon it, the teacher would also use his pedagogical knowledge to assess how the age of his students influences the way the grammar point should be presented, and avoid too much metalanguage if younger learners are in question. Finally, the teacher would attempt to find a wide variety of different techniques which would best serve to present the content and reinforce the student's knowledge of it.

From this comparison, it is easy to see how a teacher possessing PCK differs from the one possessing only content knowledge. In short, an expert with no PCK will not be able to adequately explain certain concepts since he/she has not learned to 'stoop' to the level of knowledge of the students and view things from their perspective. The teacher with PCK would, on the other hand, be able to identify himself with the learners, thus recognizing possible difficulties and misconceptions which may arise in the learning process. In this way he would not only facilitate learning, but also make the students confident in their knowledge, rather than intimidated as they would feel in the presence of a teacher without PCK. This confidence would then result in better student-teacher interaction and easier problem-solving.

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