

What Makes A Good Teacher? Needs and Necessities

A Survey of Recent Literature on Teacher's Subject Matter Knowledge, Pedagogical Knowledge, and Pedagogical Content Knowledge

Amirreza Karami

E-mail: karamiar20@gmail.com

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Abstract

This paper provides an overview of some entailed issues in efficacious teaching. First section focuses upon teacher's subject matter knowledge and the way it affects teaching. The results of the review in this part suggest the efficacy of the teacher's high subject matter knowledge on significant improvement in teaching and learning process. Second part reviews pedagogical knowledge and its importance on effective teaching. The significance of pedagogical knowledge to the teaching and learning process has been reaffirmed, too and the last part concentrates on pedagogical content knowledge. The findings of the past research discover its vital role in language teaching and learning. This review serves to highlight paramount findings from the recent investigations that have implications for the development of teacher education, teaching and learning enhancement.

Keywords: Teacher's subject matter knowledge, teacher's pedagogical knowledge, teacher's pedagogical content knowledge

1. Introduction

Language schools and institutes have a venerable tradition of desiring the acme of teaching achievement and they are keen to reach their pinnacle with great gusto. This highly recommended achievement depends upon great perseverance of qualified teachers in the utilization of recent methods and eschewing disappointment in the face of teaching and learning barriers. This burgeoning demand for diligent teachers, compels them to remain well-informed and tenacious as a way of keeping fully up to date with recent changes in pedagogic principles to disseminate knowledge. Erudite teachers will be chosen based on their methodological abilities and teaching skills like applying alternative methods, posing pertinent questions, correct response to students' questions, and efficacious teaching within the context of the classroom.

Investigations into disparate and foremost factors, in order to reach the pinnacle of effectual teaching, have come under close scrutiny recently. Although factors like teacher's language awareness, language proficiency, changes in teachers' role conceptions, teachers' beliefs about their work, their knowledge of students, and curriculum cognizance are deemed to play crucial role in splendid teaching, scientific research are scarce.

This paper provides an overview of some issues involved in teaching and learning process. In the first instance, teacher's subject matter knowledge, indicated as one rudimentary factor to fulfil the requirements (Andrews, 2010), and then pedagogical knowledge, and finally pedagogical content knowledge, emphasized as another vital factor in perfect teaching (Shulman, 1986), are going to be carefully scrutinized.

2. Teacher's Subject Matter Knowledge

Teacher's subject matter knowledge has gained more attention recently and seems to be one of the salient and a predominant feature of a qualified teacher. It is defined in terms of teacher's breadth and depth of knowledge (Lederman and Gess-Newsome, 1991).

This cognizance of the importance of subject matter knowledge is stressed by Shulman (1986a, 1987) as being in a close connection with other areas of classroom activities like being able to plan and sequence instructions and strategies, to set appropriate tasks, to question and also the ability to appraise students (McDiarmid et al., 1989). Darling-Hammond (2006) goes beyond and enumerates some elements, which will culminate in effectual teaching, like teacher's ability in presenting subject matter to learners, teacher's subject matter knowledge, and teacher's annals of teaching.

Teacher's knowledge has been focalized mostly on subject matter knowledge, this is why its influence upon interrelated parts like making pedagogical decisions and instilling confidence in behalf of teachers are emphasized. The more teachers know about a specific subject, the better they get involved in teaching that subject matter by reason of their instilled confidence.

The Possession of high subject matter knowledge is an integral part into the realms of teaching because teachers will be placed in disparate situations like being asked of various desultory questions by students as a prelude to making uncertain decisions (Shulman et.al,

1999). Teacher's capability for making sensible decisions and giving a detailed explanation, will surely lead to highly positive effects on learner's achievement (Jadama, 2014).

Not all teachers gain high subject matter knowledge, there are teachers of low subject matter knowledge, too. Low subject matter knowledge can have deleterious effects on the teaching and learning process as well as learners. Conant (1963, p.93) states that "if a teacher is largely ignorant or uninformed he can do much harm." Teacher's low conception of knowledge may fail to alter students and to inform them accurately by setting inappropriate tasks.

Apropos of the proposed fluctuations in subject matter knowledge, it is imperative to improve teachers' preparation criteria. Some required modifications to teachers' preparation program have been enumerated:

- 1) To set highly academic standards for teachers' preparation program.
- 2) To impose strict conditions on the program to make teachers be very well qualified both academically and culturally.
- 3) To let neophyte teachers be fully cognizant of the importance of the teachers' basic requisites into the teaching profession especially teacher's subject matter knowledge.

Teachers conceptualize subject matter knowledge as any kind of help to present a simplified version of the subject matter to students (Wilson and Wineburg, 1988). This knowledge of the subject matter is not just the only treasures within teacher's realms of activity. It also contains the reputed idea and belief about students, and the utilization of these as a tool for aiding learners and students in their triumph over adversities and controlling real life vicissitudes. In addition to knowledge about content, general recognition of the student's linguistic and cognitive development will eventuate in a more comprehensive subject matter knowledge of the teacher (Moon, 2005) by painting a bona fide picture of the classroom which will lead to identification of common mistakes and errors like erroneous speech among students (Cameron, 2007).

Both efficacy and inefficacy of the teacher's subject matter knowledge have been under exploratory discussion. Investigations disclose the importance of high subject matter knowledge possession (Dobey & Schafer, 1984; Roth et al., 1987; Smith & Neale, 1989). A recent review by Jadama (2014) highlights this focal quality of mentors and restates that the teacher's conception of subject matter knowledge has strong influence upon active participation of students in any task which will impact greatly and positively upon procedural teaching and learning.

In another study, seven pithy observations of classroom practices conducted jointly, 4 of the observations provide evidence that teacher's subject matter knowledge is effective in teacher's instructional approaches (Brickhouse 1989, Dobey & Schafer, 1984; Roth, Anderson, & Smith, 1987). Conversely, three of the observations refer to antithetical effects of teacher's subject matter knowledge on teacher's instructional approaches (Duschl & Wright, 1989; Lederman & Zeidler, 1987; Zeidler & Lederman, 1989).

Since the results don't demonstrate automatic transfer of teacher's subject matter knowledge

to classroom practices, teachers and instructors need to work diligently on their development of subject matter knowledge in order to permit it to be applied to teaching and learning process (Lederman & Gess-Newsome, 1991).

3. Pedagogical Knowledge

With respect to the teacher's professional qualifications, Pedagogical knowledge can be considered to be another important factor. Although Sanchez (2012) refers to its independence from teacher's subject matter knowledge, their similarities and connections are also mentioned.

Andrews (2003) illuminates the nexus between different factors in teaching by giving an example. "To illustrate, let us consider two novice teachers of English as L2 embarking on a career after initial training: a NNS graduate with a first degree in English and no teaching experience, and a NS former primary school teacher with no specialist study of English or any other language. The first of these might have very good subject-matter knowledge (knowledge about language), but her knowledge of learners is likely to be underdeveloped, and she may have very limited general pedagogical knowledge. In addition, her models of teaching and learning maybe largely confined to the Transmissive model of teaching she experienced herself as a learner. The second example teacher may, by contrast, have very limited subject-matter knowledge, but a much better knowledge of learners and general pedagogical knowledge, and a broader range of models of teaching and learning" (Andrews 2003, p.88).

Some pedagogical knowledge practices can be listed as planning for the lesson, choosing effective methods and congruent strategies, and evaluating appropriately. So a consummate teacher needs pedagogical knowledge in order to choose for the most compatible method with the context of the classroom.

4. Pedagogical Content Knowledge

Pedagogical content knowledge has been concurred to be one of the rudimentary necessities in presenting and performing subject matter knowledge and therefore is one of the noticeable factors in splendid teaching (Lederman & Gess-Newsome 1991, Shulman 1986b).

The importance of pedagogical content knowledge as an integral part of teacher's professionalism, is indisputable (Shulman, 1987; Baxter & Lederman, 1999; Carlson, 1990; Kromrey & Renfrow, 1991) and some call it "the most crucial sub-domains." (e.g. Grossman, 1990; Magnusson, Krajcik, & Borko, 1999; Shulman, 1987; Van Driel, Verloop, & De Vos, 1998).

Shulman (1987, p.8) defines pedagogical content knowledge as "a special amalgamation of content and pedagogy that is uniquely the province of teachers, their own special form of understanding" and also emphasizes pedagogical content knowledge over knowledge of a particular subject matter.

Mulhall, Berry and Loughran (2003, p.3) corroborates the importance of pedagogical content knowledge and elucidates that "Pedagogical content knowledge embraces the idea that

teachers have a special notion of content and pedagogy which they draw on in teaching that content". It is noted that "cognition, experience, and context interact in complex and dynamic ways to define teachers' instructional decisions and practices" (Sanchez, 2013, p.6)

Pedagogical content knowledge embraces various vital components in teaching and learning like psychological and pedagogical knowledge, teacher's personal experience, and their ability to recognize learner's different interests by the help of psychology (Bromme 1997 and Shulman 1987).

A pivotal role of pedagogical content knowledge has been declared by Grossman et al., (1989, p.28) who emphasize that "knowledge, or lack of knowledge, of the content can affect how teachers critique textbooks, how they select material to teach, how they structure their courses, and how they conduct instruction". Therefore, "knowing how to teach their subject involves much more than simply knowing how to do particular things in classroom." (Kourieos 2014, p. 291). According to Raya (2001) this is not acquired solely by education, experience helps, too.

Pedagogical content knowledge has been mentioned as a teacher's important area of knowledge in choosing different ways for better comprehension of the learners (Carlsen et.al (1989) & Hashweh, 1986) which is arranged from a simple "bag of tricks" to the ability to develop and select the most appropriate analogies, demonstrations, or content representations.

Shulman (1986a, 1987b) considers pedagogical content knowledge to function as a tool for the utilization of the subject matter knowledge. This efficacy has led researchers to carry out extensive research into the inevitable role of the pedagogical content knowledge in teaching and learning process.

Johnston and Goettsch (2000, p. 449) mention to the implementation of the pedagogical content knowledge in teaching grammar and stress that "the way experienced teachers give explanations of grammar points in class ... is pedagogical content knowledge [i.e. knowledge of subject-specific instructional techniques] par excellence".

There is plenty of corroborative evidence to positive effects of teacher's pedagogical content knowledge on teaching other subjects like mathematics and science which validate the claims made by researchers. For example, investigations into different domains of mathematical pedagogical content knowledge reveals positive achievement of students in mathematics (e.g. Brunner et al., 2006; Hill, Rowan, & Ball, 2005; Peterson, Fennema, Carpenter, & Loef, 1989; Staub & Stern, 2002). In fact mathematic teachers' pedagogical content knowledge is considered as advance notice of students' achievement (Krauss et al., 2008).

In addition to the importance of teacher's pedagogical content knowledge on learner's achievement, some research concentrate on intensification of teacher's pedagogical content knowledge. For example, one study on science teachers' pedagogical content knowledge reports that programs for training teachers, years of experience and teacher's reflection improve science teachers' pedagogical content knowledge (De Jong & Van Driel, 2004; Grossman, 1990; Nilsson, 2008; Park & Oliver, 2008; Van Driel, Verloop, & de Vos, 1998; Van Driel, De Jong, & Verloop, 2002).

This vitally important factor craves inordinate investigations and close inspections of the viable influence upon better teaching and learning.

5. Conclusion

These highly influential components in teaching and learning process emphasize the incontrovertible role of the pedagogue once more. Although disparate elements have been recognized, more factors remain unexplored. For example, Turner-Bisset (1999, p.43) indicates other aspects of teacher's subject matter knowledge like "substantive knowledge" and "syntactic knowledge". Not only in subject matter knowledge, but also in the other components like pedagogical knowledge and pedagogical content knowledge questions still remain unanswered. These unknown aspects need to be scrutinized in order to provide an implacable teaching which surely eventuates in steady improvement on teaching pedagogy and skills as well as the enhancement of implacable teaching and learning process.

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