EXPLORING TEACHER COGNITION IN TEACHING ESL: EXPERIENCES FROM MALAYSIAN SCHOOLS

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Abstract - The paper addresses the key question in teaching ESL, that is, how does teacher cognition interact with classroom practice. The paper is part of a larger study which was conducted via qualitative case study involving teachers in actual classroom practice. The teacher participant was video-recorded in two separate teaching sessions to capture as far as possible authentic teacher cognition practice. The teacher was then asked to review his own recorded lessons and verbally report on his actions in the class via stimulated recall protocol technique. The qualitative data generated were analysed for specific features in relation to three main knowledge types representing teacher cognition namely, knowledge of students, pedagogical content knowledge and general pedagogical knowledge. Several features were identified and categorised according to the knowledge types.

Keywords - Cognition, Knowledge, Pedagogical, Teacher

I. INTRODUCTION

In most parts of Malaysia particularly in the sub-urban and rural settings students depend on English teachers as authorities [1] simply because their only formal contacts with English are through English classes. The 'teacher factor' is paramount in determining the success and failure of students in learning and mastering English in rural and sub-urban schools. Ambigapathy[2] is of the opinion that teachers' attitudes have a notable influence on their professional practices:

"Teachers have a measure of autonomy over what they teach, what image they seek to portray in their classes, what material and resources they use and how these are handled. The choices they make - or not make will have different implications for working towards better proficiency in English" (p.3)[2].

Hence, teachers are very crucial to the success and failure of any subject in schools because they form a core component in classes and educational setting in general. What teachers do and not do, what they think and not think of in terms of planning their lessons, what they believe and not believe in, in terms of guiding their classroom practice, all of which make up a 'teacher's cognition' which Borg [3] defines as "...what teachers know, believe and think in relation to their work" (p.81). The main intent of the paper is to address one of Shulman's [4] four key questions, that is, "how do they (teacher cognitions) interact with classroom practice?"

II. MAIN OBJECTIVE

To examine the features of knowledge of students (KS), pedagogical content knowledge (PCK) and general pedagogical knowledge (GPK) (terms coined by Shulman [5], [4]).

III. RESEARCH QUESTION

What are the features of each knowledge domain: knowledge of students (KS), pedagogicalcontent knowledge (PCK) and general pedagogical knowledge (GPK)?

IV. LITERATURE REVIEW

The term 'teacher cognition' is understood as referring to "…the unobservable cognitive dimension of teaching – what teachers know, believe, and think." (p.81) [3]. In language teaching, Woods [6] describes 'teacher cognition' as referring to teacher's beliefs, decision-making and classroom practice. The term may further be understood to mean that teachers are active, teachers are decision-makers in their classrooms, teachers have beliefs and knowledge that often transfer into classroom practices and above all teachers have cognitions on all aspects of their practice.

Teacher cognition is also understood as teacher knowledge, teacher beliefs, teacher thought processes and teacher behaviours. The paper focuses on three knowledge domains out of seven (7) as categorised by Shulman [5], which include, Pedagogical content knowledge (PCK), General pedagogical knowledge (GPK) and Knowledge of students (KS). Although the paper examines each knowledge domain separately, it must be acknowledged that these domains actually interact closely with one another and in fact, Verloopet. al (p.446) [7] (cited in [8]), explain that, 'in the mind of the teacher components of knowledge, beliefs, conceptions, and intuitions are inextricably intertwined.' Not only are these knowledge domains inextricably intertwined, they are also dynamic and fluid as they are subject to influence from contextual factors over time. There was evidence that beliefs are not static but dynamic;

it was found that bilingual teachers' beliefs were influenced by their personal experience but yet these beliefs were modified as a result of teacher education [9]. Although according to Foss and Kleinsasser[10], teacher cognition and classroom practice exist in symbiotic relationships and these relationships have been investigated through an analysis of actual classroom practices, it was also found that the transfer of knowledge and beliefs from initial teacher education to classroom practice does not happen in a smooth, linear manner (p.81) [8]. In two interesting studies by Ng and Farrell [11] and Farrell and Lim [12] comparing the stated teacher beliefs and practices in grammar teaching of teachers of English in Singapore, it was found that there existed a lack of congruence between teachers' stated belief that explicit correction of all student errors should be minimised and the amount of explicit correction teachers actually engaged in.

According to Borg [8], while there is evidence that teachers do teach grammar in a way that reflects their stated beliefs, it is also apparent that beliefs and practices are often not congruent. This does not mean that teachers are consciously misrepresenting their real beliefs; rather Borg [8] believes that the results could be due to the manner in which the beliefs are elicited methodologically. Phipps and Borg [13] observed the relationships between teachers' beliefs and their classroom practices; they found that there is evidence that the two do not always correspond.

A lack of correspondence between teachers' beliefs and classroom practices have been viewed rather negatively but in Phipps and Borg's [13] analysis of teachers teaching grammar, they viewed tensions or discrepancy between the two rather positively. Phipps [14] further added that teachers' beliefs may differ depending on the manner in which they are elicited. Teachers may be drawing on their `technical knowledge' when asked to talk about their beliefs, but on their `practical knowledge' in their actual practice. Alternatively, teachers may be referring to their perception of ideal practice when talking about their beliefs, as opposed to their actual practices [8].

The paper focuses only on three main teacher cognition's knowledge domains namely, knowledge of students/learners, pedagogical content knowledge and general pedagogical knowledge. It is posited at this juncture that by exploring the three domains, it is reasonably possible to explore the probable interactions between teacher cognitions (three domains) and actual classroom practices.

A. Knowledge of Students (KS)

Shulman [5] defines KS as referring to knowledge of student characteristics and cognitions as well as knowledge of motivational and developmental aspects of how students learn. KS may include such aspects as students' learning preference and styles. Teachers need to be aware of all these variables and take them into considerations during the learning process. These different learning styles are key elements in teacher cognition as regards knowledge of students.

B. Pedagogical Content Knowledge (PCK)

Shulman [5] defined PCK as, "...the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations - in a word, the most useful 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 topic 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 (p.7)."

C. General Pedagogical Knowledge (GPK)

GPK may well be summarised as Brown and McIntyre's [15] 'professional craft knowledge' which refers to knowledge which is embedded in, and tacitly guiding teachers' everyday actions in the classroom; related to the intuitive, spontaneous and routine aspects of teaching.

Obviously in the Malaysian school setting, there is a need to focus on how to engage both the students' interest in learning the English Language and the teacher's actual practices in motivating students to learn English. The knowledge of students' learning styles may help teachers in handling the diversity of learner differences and learning styles among them and thus set a new guideline on how to better help them in achieving good performance in the ESL classroom.

V. METHOD

Qualitative case study was employed to explore teachers' cognitions in relation to their reported and actual practices in the ESL classrooms. The data were taken from a larger study and the paper focuses only on one participant teacher whose pseudonym was given as Ken. The two separate teaching sessions of the teacher participant lasted for an approximately five hours (two hours per session), were video-recorded which generated a reasonably reliable amount of qualitative data. After each session, the teacher participant was asked to watch his own video session and report via stimulated recall protocols of his practice. These were done so as to understand and to know more about teacher cognition; teacher's knowledge that influences instructional practices. Yin (p.82) [16]-[17], for example, looked at case study as a suitable research approach because through the process of describing, explaining, evaluating and predicting they will be able to "reveal the multiplicity of factors [which] have interacted to produce the unique character of the entity that is the subject of

study". Such qualitative technique helps to unravel teacher cognition in actual classroom context.

A. Stimulated Recall Protocols (SRP)

The participant teacher was asked to view his own recorded lessons, and during the viewing session he was asked to comment on the activities and actions that occurred during the lessons (what was he thinking and why). The teacher was allowed to pause the recorded lessons and give comments wherever at the point of the lesson is necessary to elaborate and explain clearly what was his thinking underlying those activities and actions. As the teacher was doing the stimulated recall, the researcher audio recorded the session. Stimulated Recall Protocol has most often been used to explore aspects of cognition that lie behind the participant' decisions and actions. For example, SRP has been used to explore teacher cognition [18].

B. Qualitative Data Analysis

The data collected were used to examine whether there was consistency between the teacher participant's stated beliefs and their observable instructional practices during lessons. To analyse the data, they were coded and categorised. The contents of the text from the verbal protocols were then analysed to look for themes and common patterns. The analysing processes involved reading all the transcribed verbal protocols to get the general sense of the data and to identify instances/occurrences of teacher cognitive knowledge types (KS, PCK & GPK).

VI. RESULTS

A. Knowledge of Students

Actual excerpts of Ken's SRP are extracted and illustrated in the table whereby emboldened parts of the excerpts indicate evidence of the feature categories that were discovered.

Analysis of Actual Stimulated Recall Protocols (SRP) Of Knowledge of Students (KS)		
	Features of KS	Excerpts containing features on Knowledge of students (KS)
1	Activating & establishing students' previous knowledge	First I've given them the handouts...to establish their background knowledge...to refresh their memoryabout what they have learned... ...I'm giving them chance to recall what they've learned
2	Making simplifications by giving examples	... at that point I was trying to... thinking about ways to simplify it for the students, so I thought the best way I could illustrate the SVA was to give them a set of rules and follow up with examplesso that they could see and remember
3	Giving explanations and examples	I try to draw from the previous teaching experience...before this I was teaching pronoun that when you have more than two persons, you can simply group it with the word 'they'. I was drawing from another example, so that the student would not get confused because sometimes in quantity it'll always come in plural...
4	Explaining clearly on teaching points	it was confusing because we have to go through so many rules but with SVA (subject-verb agreement) ...you have to first introduce your students to the different rules first before you can proceed so that they have a background knowledge...
5	Giving priority to focus on weak students	...for the better students with good foundation in English...they can do this quite quickly and they weren't my major concern...it was the poorer students that I worried about, thinking about how I could reinforce what they have learned that day.

Table1: Analysis of Ken's SRP on KS

B. Pedagogical Content Knowledge

Actual excerpts of Ken's SRP whereby the emboldened parts of the excerpts contain evidence of the feature categories that were identified

Analysis of Actual Stimulated Recall Protocols (SRP)Of Pedagogical Content Knowledge(PCK)

	Features of PCK	Extracts containing features on Pedagogical Content Knowledge (PCK)
1	Assessing students' understanding via exercises	So, here I was trying to establish to see how much the students can absorb...
2	Re-explaining concepts via recalling what was taught earlier, giving examples and making clear illustrations	I try to illustrate it clearer for the students by referring back to the rules...
3	Giving specific examples	Here I wanted to let the students to see clearer that 'salt and pepper' is not considered two separate things but one entity... they are two different things but if you put it in such a way that 'bread and butter', 'salt and pepper', it's easier for them to see...
4	Explaining how to apply grammar rules in actual usage	I needed to tell them that they...sometimes you have to apply two rules at one question because it says 'the cost', so which one is the subject...
5	Drawing students' attention to specific learning points	Here I highlight back once again the answers so that the students would be able to follow just in case they get confused along their way.
6	Using technique of familiarity	Okay I used the example of CSI (crime investigation) because I assumed students have known, they're quite familiar with this kind of show in which every episode...So by using this kind of example, ... students could draw from their previous experience...

Table 2: Analysis of Ken's SRP on PCK

C. General Pedagogical Knowledge

The feature categories were deciphered and identified from the actual protocols; the emboldened parts of the actual excerpts as shown in the table contain evidence of such categorical features of GPK.

Analysis of Actual Stimulated Recall Protocols (SRP) Of General PedagogicalKnowledge(GPK)		
	Features of GPK	Extracts containing features on General Pedagogical Knowledge (GPK)
1	Making in-class decision on how to teach grammar clearer	I was also thinking abouthow I could make it clearer for the students because at that time when I was trying to recall back how I was taught...
2	Reflecting on his teaching in search of better techniques	...I was worried why... where did they go wrong, was it the rule, was it the question, was it my teaching method.
3	Resorting to Bahasa Melayu (Malay) to make his explanation to weak learners clearer	Okay. Here I used a little bit of Bahasa Melayu...I was just trying to explain to the students the meaning of characters.
4	Encouraging collaborative learning	Okay. I arranged them into groups because I wanted to encourage collaborative learning, by working together ...
5	Personalising examples for clearer understanding	Okay by using one of the students as an example, I was bringing the lesson closer to the students...
6	Teaching vocabulary through technique of word matching	Okay when I was writing the lesson plan I thought of this idea because one if I were just (to) ask them to draw me words about the characters... So students with better vocabulary, they would be able to help the weaker ones...
7	Using prompting technique to help shy students to participate	So there's a lot of prompting as you can see...when teaching a mixed proficiency like that you want to prompt...

Table 3: Analysis of Ken's SRP on GPK

VII. DISCUSSION

A. Knowledge of Students

Ken's SRP suggest that there exists congruence between the stated beliefs on 'learners' preferred learning styles' and Ken's actual classroom practice. Ken admitted to being aware of his students' learning styles but he felt that it was not possible to accommodate for each and every single student's preferred learning styles. Ken also reported being aware of his students' proficiency level. In order to accommodate for his students' low proficiency level, Ken encouraged them to participate through group work. In this group work activity, Ken encouraged his students to practise speaking via discussion, argumentation and debate. As far as KS is concerned, it seems that there exists consistency in terms of Ken's self-reported cognitions.

B. Pedagogical Content Knowledge

In his SRP, Ken did not explain clearly as to how he planned his lessons, that is, whether or not he took into account his students' learning styles and proficiency levels. Ken however did reveal that he thought about his lesson carefully by taking into account of aspects of teaching and learning approaches that could make it easier for his students to understand and learn from his lessons. As evidenced from his SRP, Ken took grammar teaching seriously and his approach in grammar instruction was teacher-centred. Ken also spent ample time to explain and re-explain grammar rules; he also integrated language skills such as speaking and listening through group discussion on controversial issues.

C. General Pedagogical Knowledge

Ken's actual practice as evidenced via SRP indicates that his lessons were more of a teacher-controlled type especially during grammar instruction. It may be possible that there is a lack of congruence in Ken's case as far as GPK and actual practices are concerned. It may also be possible to explain that a lack of congruence here could be due to the fact that actual practices can be influenced by contextual factors like teaching-time factor, students performing below expectation or institutional policy [12]. Ken included in his classroom practices such aspects as integrating language skills, making his lessons interesting and using questioning techniques to elicit responses from his students.

VIII. CONCLUSION

The qualitative results suggest that the three knowledge domains are not distinct from one another and they are in fact inextricably intertwined. It is not easy to categorise each knowledge domain in a discrete manner without overlapping with the other two knowledge domains. The paper has to some extent addressed one of Shulman's [4] four key questions, that is, "how do they (teacher cognitions) interact with classroom practice?"

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