

2009

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### Recommended Citation

Akbari, Ramin and Tajik, Leila (2010) "Teachers' Pedagogic Knowledge Base: a Comparison between Experienced and Less Experienced Practitioners," *Australian Journal of Teacher Education*: Vol. 34: Iss. 6, Article 4.  
Available at: <http://ro.ecu.edu.au/ajte/vol34/iss6/4>

This Journal Article is posted at Research Online.  
<http://ro.ecu.edu.au/ajte/vol34/iss6/4>

## **L2 Teachers' Pedagogic Knowledge Base: a Comparison between Experienced and Less Experienced Practitioners**

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*Abstract: Second language teacher education community has become increasingly interested in the pedagogical knowledge base of teachers as a window into practitioners' mental lives. The present study was conducted to document likely differences between the pedagogic thoughts of experienced and less experienced teachers. Eight teachers participated in the project. Data were collected through the use of stimulated recall. The analysis of the data shows that there are differences both in the number and the order of the thoughts teachers produced in different groups. Experienced teachers produced an average of five pedagogical thoughts per minute, while their less experienced counterparts produced 3 thoughts. The top thought category for less experienced teachers was Language Management, while for the experienced teachers Self-Reflection ranked first. Some thought categories were also absent in the report of less experienced practitioners.*

### **INTRODUCTION**

The last two decades have been years of growing complexity and sophistication for second language (L2) teacher preparation and development research; there are now numerous books and papers dealing with different aspects of teacher education, and teacher growth is addressed from professional, cognitive, social, as well as contextual perspectives (Tusi, 2003; Richards and Farrell, 2005; Tedick, 2004; Johnson, 2000; Woods, 1996; Richards & Lockhart, 1994).

Such an interest in L2 teacher development is relatively new since before the 1980s the dominant model for teacher education in applied linguistics was of a process-product type where “the aim was to understand how teachers’ actions led - or did not lead- to student learning” (Freeman, 2002, p. 2). Such a view, which later became known as technicism, regarded teaching as “equivalent to efficient performance which achieves ends that are prescribed for teachers” (Halliday, 1998, p. 597). Learning to teach was defined as mastering the content to be taught, along with its required methodology, and any failure on the part of learners in learning the assigned content was attributed to “the teaching process and, by extension, ...[to] the teacher’s competence” (Freeman, 2002, p. 5). Teachers’ agency and mentality, or what later became known as teachers' mental lives

(Walberg, 1977) was totally ignored since teachers were supposed to enter the teaching profession with a tabula rasa and through a training program the required teaching skills and habits were mastered. In such a context, there was no room for teachers' mentality due to the common perception that "teachers' internal mental world was assumed to be minimally sophisticated" (Freeman, 2002, p. 5).

Fortunately the profession has outgrown such simplistic interpretations of teaching and behaviorist conceptions of instruction have been replaced by cognitive/social views of teaching (Johnson, 2006). In this new conceptualization, teaching is a complicated activity in which "teachers are active, thinking decision-makers who make instructional choices by drawing on complex, practically-oriented, personalized, and context-sensitive networks of knowledge, thoughts, and beliefs" (Borg, 2003, p. 81). The way teachers teach is not only affected by the training they have received, it is also a result of their hidden pedagogies, or their personal philosophy of what teaching is all about (Denscombe, 1982) as well as their years of learning as students, what Lortie has termed apprenticeship of observation (1975). It is now an established fact that any teaching context and any teaching decision is the result of interaction among received, personal, experiential, and local types knowledge (Mann, 2005, p. 106) teachers draw upon as they negotiate their instructional lives in their classrooms.

In spite of this heightened interest, still not enough research is done on language teacher cognition and mental life and our understanding of how and why teachers make the decisions they make and what forces are influential in the formation of their professional identity is yet to be completed. A number of scholars (e.g. Gatbonton, 1999; Freeman, 2002; Borg, 2003; Mullack, 2006) have thought of teachers' actions in the classroom as grounded in some form of thinking which are shaped by teachers' knowledge, or their pedagogical knowledge base, i.e. the attitudes and values about the teaching act accumulated through their teaching career. Hence, research into the nature of teachers' pedagogical knowledge needs to investigate many facets of teacher thinking and beliefs. The assumption is that if one can discern what these thoughts are, then one can gain insights into the knowledge that lies behind them. The teacher education community, it seems, is in need of doing "a better job of not only researching teachers' knowledge bases, but also of helping teachers develop their own situated relationship to disciplines which might expand or contribute to this knowledge base" (Larsen-Freeman, 2004, p. 71, quoted in Mann, 2005, p.107). Research in areas related to teacher experience, the effect of training, the impact of context on teachers' pedagogical decisions, and teachers' reflective practices or personality (Crooks and Arakaki, 1999; Nunan, 1992; Richards & Pennington, 1998; Golombek, 1998; Cabaroglu & Roberts, 2000; Akbari, 2007) are in short supply to exactly pinpoint the effects of the such variables on teachers' performance in L2 settings.

The present study was carried out with the purpose of addressing one of these issues, namely the impact of experience on the type and frequency of pedagogical thoughts teachers make use of in conducting their classes. More specifically, the following research questions were raised in this study:

- Are there differences in the pedagogical thoughts of less experienced vs. experienced teachers?

- Which pedagogical thoughts are used more by experienced practitioners vs. less experienced ones?

Although research in this area does exist (see for example Gatbonton, 1999; Mullack, 2006), there is still need for more studies due to the contextual nature of teachers' pedagogic knowledge and differences that exist in cultures of teaching and learning within which L2 teachers operate (Elbaz, 1981). Calls are made by Gatbonton (1999) and Mullack (2006), for example, for replication of studies that investigate teachers' pedagogical thoughts to help in making stronger claims about the influence of teaching experience on the transformation of teachers' knowledge base. Accordingly, the current study aims to answer the above research questions as an approximate replication in a different context with teachers and learners of different cultural backgrounds from those of Gatbonton (1999) and Mullack (2006); hence the same research methodology and data analysis procedures employed in Gatbonton (1999) and Mullack (2006) are used in the present study to provide for the comparability of the results. A brief background on teacher cognition as well as some relevant research findings are the issues the next section deals with.

## **LITERATURE REVIEW**

### **Teacher Cognition**

The term teacher cognition refers to “the unobservable cognitive dimension of teaching- what teachers know, believe and think” (Borg, 2003, p. 81). In other words, teacher cognition encompasses all the aspects which are related to the mental lives of teachers, elements which affect teachers' conception of teaching and the impact of all these on the way teachers teach and justifications they provide for their teaching decisions.

Interest in teachers' mental lives and cognition started with the investigation of the decisions teachers make in their classes (Shavelson & Stern, 1981). Reducing the complexity of teachers' cognition to decision making was part of the continuation of behaviorist conceptions of teaching since this strategy “created an easy, almost quasi-behavioral, unit of analysis that could be applied across multiple classroom settings, content areas and levels of teacher expertise” (Freeman, 2002, p. 5). Research that addressed teachers' mental lives in a serious, comprehensive way started mostly during the 1990s, and in language teaching, after 1996 (Borg, 2003).

Different terms are now used for the description of teachers' knowledge base; pedagogical content knowledge or PCK, regarded teacher knowledge as going beyond what the training or the disciplinary content has offered and comprised of a qualitatively different body of knowledge which also includes experience (Grossman, 1990). Clandinin (1985) used the term personal, practical knowledge, which is the sum total of a teacher's professional, personal, as well as experiential history. Other conceptualizations include experiential knowledge (Wallace, 1991), pedagogic content knowledge (Shulman, 1987), local knowledge (Allwright, 2003), and pedagogical knowledge base (VanPatten, 1997).

Teacher cognition has been investigated from different perspectives in L2 teacher preparation. Among the aspects of teachers' pedagogic knowledge, teachers' knowledge

of grammar and instructional decisions relating to grammar teaching have been addressed by Borg (1998; 1999) and Andrews (1994; 1997; 1999), while Burns (1992) and Tusi (1996) deal with teachers' beliefs and their approach to teaching L2 writing. Bartels (1999) investigated kinds of skills and linguistic knowledge teachers resort to in implementing their lesson plans in the class, a topic which is also addressed from a different perspective by Baily (1996). Teachers' beliefs and changes in teachers' conceptions of teaching have been the topic of research in Collie Graden (1996), Cabaroglu (2000), and Smith (1996).

Of particular interest to the present paper, however, are the studies done on teachers' pedagogical knowledge base (Gatbonton, 1999; Mullock, 2006). Teacher's pedagogic knowledge base is defined by Mullock (2006) as the "accumulated knowledge about the act of teaching, including goals, procedures, and strategies that form the basis for what teachers do in classroom" (p.48). In this line of research, attempts are made to discover the thought processes teachers go through as they assist their students in mastering formal/communicative features of the L2.

Gatbonton (1999), for example, was interested in finding out what patterns of pedagogic thoughts experienced L2 teachers used and whether there is consistency in such thought patterns among teachers. Using stimulated recall technique for 7 experienced teachers, she found that there are 21 categories of pedagogical thoughts that respondents reported using, 8 of which showed the highest frequency of occurrence. The most frequently used thought category (20 percent of the total) was that of Language Management, which dealt with the input students were exposed to as well as their output. Language Management was followed by Knowledge of Students (9 percent of the total) (learners' personality, needs). Other important thought categories teachers reported using frequently were Procedure Check (measures taken to ensure that the lesson proceeds smoothly from the beginning to the end, 8 percent of the total), Progress Review (to see whether the learners are correctly performing a task or whether they have finished, 8 percent of the total), Beliefs (teachers' ideas about language, as well as the way language is learned or taught, 7 percent of the total), Note Student Reaction and Behavior (dealing with students' actions and behaviors, 6 percent of the total), and Decisions (pedagogical choices made by the teachers, 6 percent of the total). Gatbonton's (1999) study, however, suffers from a number of methodological defects that make her categories imprecise in terms of definition and limited in terms of application to similar contexts.

To begin with, Gatbonton collects her data in an artificial setting, that is, classes where her participants were teaching in were formed only for this research project and as Mullock (2006) points out, "there are doubts regarding the ecological validity [of the study]" (p. 50). Another complicating factor threatening the internal validity of the research is the textbooks used in the project. The course books were not the textbooks teachers were used to teaching in their classes and were pre-publication stage books which were used for the first time in this project. There are also problems related to the way certain terms were defined: for example, the category of Language Management is defined in a broad, imprecise way that can include all aspects of input and output (Mullock, 2006). The use of video recording as the data collection instrument and stimulated recall for eliciting the thought categories of the respondents have also been criticized by Mullock (2006). In addition, the construct of experience, which is mentioned in the title of Gatbonton's (1999) paper, is left unaddressed since to show the

effect of experience, one needs a comparison group of inexperienced teachers to determine what kind of qualitative/quantitative differences can be attributed to experience per se.

Mullock (2006) in a replication of (1999) study points out:

Replication studies are quite rare in L2 teacher education, yet if we wish to create a representative, explanatory base for our work, it is important that the findings on which we build our base are solid. One way to achieve this goal is to replicate studies, and discover whether the findings of studies such that Gatbonton's are replicable (p. 52).

Mullock (2006) did not change the overall design of the study since it was supposed to be a replication of Gatbonton's (1999). However, the respondents who participated in Mullock's (2006) research came from four intact classes and represented different real life teaching contexts, teaching general, business, or advanced English for Cambridge Advanced Certificate courses. The results of her study were to a large extent similar to those of Gatbonton (1999), with some slight differences. Mullock (2006) also found Language Management to be the main category, allocating to itself 25 percent of the total of the pedagogical thoughts produced by the participants. Knowledge of Students also ranked second in Mullock's (2006) study, but with a different percentage of 21, which is much higher than the one reported by Gatbonton. Procedure Check (10 percent of the total), Progress Review (7 percent of the total), and Note Student Reaction and Behavior (7 percent of the total), were the other categories that ranked high in Mullock's (2006) study and show differences in terms of order and value with those of Gatbonton.

An interesting aspect of Mullock's (2006) study which is of direct relevance to the present paper is the results that deal with the differences between pedagogical thought patterns of experienced and less experienced participants of the research. In terms of the variety of the thoughts produced, as well as their quantity, not many differences were observed between the two groups, a point which seems unexpected and not in accordance with what the literature claims to be the case, according to Mullock (2006). The study found, for example, that less experienced teachers were as much concerned with Knowledge of Students as their experienced counterparts. Citing Fuller (1969) and Kagan (1992), Mullock (2006) states that "we would expect this result to appear only after 1 year of teaching" (p. 58). In addition, Mullock (2006) was surprised to find that less experienced teachers were more inclined to get engaged in Self-Criticism and comment more on their personality compared to the more experienced participants. These findings, however, are not surprising exactly with reference to the sources she mentions in her research; novice teachers, using Fuller's teacher development model, go through three stages of development in their professional career, the first of which is concerned with self-image and establishment of interpersonal relations (the second stage deals with instructional methods and the teaching task, while the third stage is concerned basically with the impact of instruction and the amount of learning achieved by the learners). It does not come as a surprise then, to see less experienced teachers are concerned with the personality and needs of the learners since it is one of the requirements of creating the affective/social bonds teachers are concerned with during this phase. The second observation that teachers were also more frequently engaged in Self-Criticism is also in line with the above argument; since novice teachers are still concerned with self-image issues, they would be highly concerned with the image they are presenting and any act

that can damage that image can be perceived as harmful. A different pattern of teacher development, however, is reported by Watzke (2003; 2007). His research revealed that

...across grade levels, school contexts, and subjects, teachers had heightened and sustained concerns for student learning and well-being during the first two years of teaching.... [a finding] that contradicts the often cited theory of teacher development based on teachers' concern... Teachers' concerns for student learning and personal well-being are central to their work, regardless of years of teaching experience (2007, p. 66).

Teaching experience, to which Mullock (2006) alludes in her study, is in fact one of the variables which has been addressed by different research projects with at times contradictory, inconclusive results. Berliner (1986), for example, found that teachers with less experience (those with less than three years of teaching experience) were mostly concerned with self-image issues and classroom management, while those with more than five years of experience concentrated on student learning more, a finding which contradicts that of Watzke (2003 & 2007) above. Nunan's (1992) findings are also in line with those of Berliner; Nunan found that inexperienced teachers were more concerned with classroom management than experienced ones, who made more decisions related to language issues in the classroom. Experienced teachers seem to have internalized classroom management mechanisms at the subconscious level and as a result can focus more attention on content and learning issues in their classes. Richards, Li and Tang (1998) comparing the experienced vs. inexperienced L2 teachers' pedagogic decisions in a reading class discovered that inexperienced practitioners had difficulty in looking at the content and subject matter from learners' view point, did not have a deep understanding or knowledge of the content they were teaching, had difficulty making methodological decisions as to how to present specific aspects of the content, and finally could not relate their teaching to the overall curriculum within which they were operating.

The differences observed in studies addressing the role of experience in teacher cognition and decision making highlight the need for more research in this area to tackle some of the contradictions observed. In addition, replications of studies dealing with different aspects of teacher education are highly crucial in establishing a firm basis for extrapolation of research findings to other similar settings. The present study addresses the role of experience in affecting the pedagogical thoughts of teachers in negotiating their classroom roles.

## **METHOD**

The aim of this study was to identify patterns of pedagogical knowledge base of experienced and less experienced teachers; at the same time we aimed at examining whether the patterns of the pedagogical knowledge found in Gathbonton's (1999) and Mullack's (2006) study would also be observed in the current study.

This study is both similar to and different from Mullack's (2006) in some respects. In both of the studies teachers with different levels of teaching experience taught intact classes whose content focus was not controlled by the researchers. On the other hand, there were many variations among participants' classes in Mullack's (2006) study in terms of learners' proficiency level, their linguistic and cultural background, the course

books covered, and language focus. The present study, however, was carried out with the intention of attributing the observed differences among the pedagogical thoughts reported by teachers to their teaching experience, and consequently, tried to remove as many sources of variation as possible. To this end, all classes were homogenized in terms of a number of variables to minimize their effect; the same *course book*, 'New Interchange', was taught to *Iranian adult EFL* learners studying at *intermediate* language proficiency level in two private language institutes in Tehran. At the same time, whereas in Mullack's (2006) study teachers with three months to four years of experience were treated as less experienced and the ones with six to twelve years of pedagogical practice as experienced, a different criteria was applied in the present study; experienced teachers were defined as those with more than six years, and less experienced those with less than two years, of teaching experience; this classification seemed more accurate than the one used by Mullack since teachers are put in more homogeneous groups.

#### **The participants, the course and lesson details**

The participants were eight EFL teachers, labeled as teachers A, B, C, D, E, F, G, and H in the present study, teaching general English courses in two private language institutes in Tehran. Teachers A, B, E and F were female and teachers C, D, G and H were male; their ages ranged between twenty two to thirty one. The participants' teaching experience varied from less than two to eight years; teachers A, B, C and D with less than two years of pedagogical practice were labeled as less experienced and teachers E, F, G and H with more than six years of pedagogical practice were viewed experienced in this study. All eight teachers had completed their B.A degree in English language and gone through Teacher Training Courses (TTCs) in the institutes in which they taught. All the participants consented to taking part in the study.

A communicatively oriented approach was followed by all the eight teachers. The classes were further parallel in terms of their content focus and all concentrated on the development of the four skills in the learners.

Teacher A, the youngest (22 years old) among the four, included writing and story retelling in her class activities. With almost one year of teaching experience, she taught eight hours a week in the institute. There were fifteen female students in her class with ages between sixteen and twenty. Teacher B was a 25 year old female with around a year and a half of pedagogical practice and a weekly workload of six hours. Her class mostly concentrated on grammar activities in the session she was observed for this study. Nineteen female learners varying in age between fourteen and twenty one attended her class. Teacher C was a 27 years old male with less than 2 years of teaching experience and eight hours of weekly workload at the time of data collection. Reading and listening comprehension were the main classroom activities in the session we videotaped. His pupils were twelve male learners in the age range of thirteen to sixteen. Teacher D was 26 years old, male, with less than 2 years of experience and a weekly workload of 18 hours. Intonation practice occupied most of his class time in the session we observed; there were also some listening comprehension and grammar activities during the session. His class consisted of ten teenage students. Teacher E, the oldest of the participants, was 31, female, with eight years of teaching experience. She had a very busy weekly schedule, with 40 hours of instruction. The class we observed was a review session, with

an emphasis on collocations and listening comprehension. There were thirteen students in her class, ages from 15 to twenty. Teacher F, with a weekly workload of thirty hours, was 29, female, and nine years of teaching experience. She was teaching her students reading skills with some focus on grammar for the session we observed. Her class consisted of ten students of 18 to 22. Teacher G was 28, male, with seven years of teaching practice who devoted around 34 hours a week to teaching. His class focused on two skills of listening and speaking, with some instruction on the use of grammar. There were 12 teenage students in his class. Teacher H, the last of the participants, in spite of his age (23) had seven years of teaching experience in private institutes. His class consisted of 11 teenage students and concentrated on reading comprehension as well as intonation.

### **Data collection**

Since the current study is an approximate replication of Gatbonton's (1999) and Mullack's (2006) studies, it used the same data collection process employed by the two studies, with some slight modifications though. *Stimulated recall* technique was used to gain insight into the pedagogical knowledge base of the participants: one teaching session (90 minutes) of each teacher was videotaped; later, the teachers were asked to view the video of their lessons and recall what they had been thinking while teaching. Their recollections were tape recorded and later transcribed (Gatbonton and Mullack focused only on one hour of the class time).

To improve the accuracy of the recall technique, the time interval between the teaching and the viewing stages was kept to the possible minimum. The delay in viewing time varied for different teachers depending on their teaching schedule; it was around fifteen minutes for teachers A, B, H, G, an hour for teachers C, D, F and an hour and a half for teacher E. In Gatbonton's (1999) study, however, the delay between videoing and watching the tape ranged from a few days to three weeks; in Mullack's (2006) study teacher C's recollections were not recorded due to a recording problem and the researcher returned three days later and repeated the procedure.

### **Data Analysis**

The analysis of the transcripts also followed the quantitative-qualitative method employed by Gatbonton (1999) and Mullack (2006). In the qualitative phase, using inductive analysis procedure (Bogdan & Biklen, 1992; Glaser & Strauss, 1967; Tsang, 2004) the transcribed data were subjected to content analysis. The transcripts were first segmented into pedagogical thought units and labeled. In the next stage, the thought units were organized into wider pedagogical thought categories according to shared themes. The labeling of these thought categories were based on the guidelines provided by Gatbonton (1999; personal communication). The following extracts from different teachers' recollections might help clarify the way segmentation, categorization and labeling proceeded in practice:

Because this is a mixed class, students are in different ages. There are also some adults. You see we have students who are 12 and those who are married. Because there are also teenagers, I usually talk about dates. They like it. (Teacher A)

In the above piece, there are two different thought units: (1) composition of class: mixed in age and (2) the students' age range: adults and children. Each one can be classed under the category of Knowledge of Students. Another example:

Students did not know the meaning of that word. They are looking it up in the dictionary. (Teacher B)

In the above extract, two different thought units were identified, each representing a different category: (1) Problem Check and (2) Note Behavior.

However, the procedure did not always proceed in a straightforward manner; we came across some cases that posed interpretation challenges. As an example:

There should always be a dictionary with them in class. (Teacher F)

The above extract can be interpreted in two ways: on the one hand, it seems to be a task requirement in the sense that this is what the students need to do; on the other hand, it could be regarded as a comment on the students' abilities- their limited vocabulary obliges them to use a dictionary in class. It was only through resorting to the context we could determine that the thought belongs to the Procedure Check category.

Following the lead of Gatbonton (1999) and Mullack (2006), the thoughts which had occurred during the interview itself and did not relate directly to the video-taped performance were excluded from the analysis. They included irrelevant comments, comments comparing the current lesson to a previous one, statements elicited through the researchers' leading prompts, or those whose meanings were unclear; such thoughts were labeled post-active in Gatbonton's (1999) study. The following utterance, for instance, was interpreted as being irrelevant and as a result was excluded from later analysis.

I usually dress in black 'cause I like dark colors. (Teacher E)

When it was not clear if the thought occurred to the teacher at the time of teaching, the procedure followed by Gatbonton (1999) and Mullack (2006) was adopted; we included them as far as we could reach consensus over their occurrence during the teaching act. For instance, use of the present tense in many cases such as the following made such thoughts put them in the gray area; they were more difficult to interpret because it was not clear whether these thoughts occurred while the person was teaching or while watching the video.

I do not tell her directly why she does not participate. (Teacher B)

In such cases we resorted to the context to determine when the thought had occurred to the teacher.

To make sure the participating teachers concurred with the categorization of the data, some instances of segmentation, categorization, and labeling of all participants' thoughts were checked with them. Since the participants had busy schedules, they could

only review a small part of the transcripts; approximately in 90 percent of the reviewed cases, consensus was obtained between the researchers and teachers over the categorizations.

The analysis of data resulted in the identification of twenty three pedagogical thought categories, the frequency of which were then calculated and compared both within and across the groups in the quantitative phase. At the same time, to further increase the reliability of the teachers' recalls (see, for example, Gass and Mackey, 2000) and to reach consensus over segmentation and labeling of teachers' reported thoughts, cross-check was used (Gatbonton and Mullack used a paid consultant for cross-checking): a second rater who was trained in the coding procedure analyzed a random sample of 20% of all the eight teachers' transcripts; an inter-rater reliability of 80% was obtained.

## **RESULTS AND DISCUSSION**

### **Teachers' Reported Pedagogical Thought Categories**

Table 1 presents the frequency, ranking and percentage of the pedagogical thought categories reported by the two groups (Group one includes less experienced and Group two includes experienced teachers).

Following the lead of Mullack (2006), results of the data analysis are presented in two different sections: in section one, the number of thoughts recalled along with the frequency, ranking and percentage of pedagogical thought categories reported by all teachers are presented, and in section two, thought units comprising Language Management, which ranked first and second in less experienced and experienced teachers' recall and accounted for 27% of the total number of thoughts reported by the two groups, are further analyzed; Language Management was found to be the most frequently recalled category in Gatbonton's (1999) and Mullack's (2006) studies. In each section, both within and across group comparisons are made; in most parts comparisons are also made with Gatbonton's (1999) and Mullack's (2006) studies.

#### ***Section 1: The average number of thoughts per minute: across and within group comparisons***

One of the interesting findings of the present study is related to the average number of the thoughts reported per minute by group one (less experienced) and group two (experienced) teachers. As table 1 indicates, group one teachers, reported a total of 983 pedagogical thoughts with teacher A, B, C and D recalling 234, 324, 206 and 209 thoughts respectively, an average of 2.9 thoughts per minute. This is while group two teachers, produced a total of 1678 pedagogical thoughts with teachers E, F, G, and H reporting 495, 410, 395 and 387 thoughts respectively, with a mean of 4.9. This finding is well supported in the literature, (e.g. Mangubhai, Dashwood, Berthold, Flores, & Dale 1998a, 1998b; Gatbonton, 2008), which indicates less experienced teachers have less to say about their teaching compared to more experienced teachers. However, this finding is in sharp contrast with that of Mullack (2006) whose less experienced teachers had more thoughts per minute (she reports an average of 6 thoughts per minute for less experienced vs. 3 and 4 thoughts per minute for experienced teachers). Gatbonton's (1999) teachers,

Group one						Group two					
Categories	Teacher A	Teacher B	Teacher C	Teacher D	Total	Categories	Teacher E	Teacher F	Teacher G	Teacher H	Total
1. Language Management	90 (38%) <sup>1</sup>	118 (37%) <sup>1</sup>	92(45%) <sup>1</sup>	94(43%) <sup>1</sup>	394(40%) <sup>1</sup>	1. Self-Reflection	115 (23%) <sup>1</sup>	74 (18%) <sup>2</sup>	80(20%) <sup>1</sup>	63(16%) <sup>2</sup>	332(20%) <sup>1</sup>
2. Procedure Check	28 (12%) <sup>2</sup>	28 (9%) <sup>3</sup>	20(10%) <sup>2</sup>	26(12%) <sup>2</sup>	102(10%) <sup>2</sup>	2. Language Management	95 (19%) <sup>2</sup>	90(22%) <sup>1</sup>	53(13%) <sup>2</sup>	78(20%) <sup>1</sup>	316(19%) <sup>2</sup>
3. Knowledge of Students	20(9%) <sup>3</sup>	35 (11%) <sup>2</sup>	9(4%) <sup>6</sup>	7(3%) <sup>6</sup>	71(7%) <sup>3</sup>	3. Procedure Check	44 (9%) <sup>5</sup>	41(10%) <sup>4</sup>	43(11%) <sup>3</sup>	39(10%) <sup>3</sup>	167(10%) <sup>3</sup>
4. Note Behavior	19 (8%) <sup>4</sup>	19 (6%) <sup>5</sup>	13(6%) <sup>4</sup>	14(6%) <sup>3</sup>	65(7%) <sup>4</sup>	4. Affective	52 (11%) <sup>3</sup>	42 (10%) <sup>4</sup>	28(7%) <sup>5</sup>	24(6%) <sup>5</sup>	146(9%) <sup>4</sup>
5. Progress Review	14 (6%) <sup>6</sup>	23 (7%) <sup>4</sup>	18(9%) <sup>3</sup>	12(6%) <sup>3</sup>	57 (6%) <sup>5</sup>	5. Knowledge of Students	50 (10%) <sup>4</sup>	45 (11%) <sup>3</sup>	24(6%) <sup>6</sup>	19(5%) <sup>7</sup>	138(8%) <sup>5</sup>
6. Self-Reflection	14 (6%) <sup>5</sup>	13 (4%) <sup>7</sup>	12(6%) <sup>4</sup>	7(3%) <sup>6</sup>	46(5%) <sup>6</sup>	6. Note Behavior	32 (6%) <sup>6</sup>	37 (9%) <sup>5</sup>	32(8%) <sup>4</sup>	27(7%) <sup>4</sup>	128(8%) <sup>6</sup>
7. Affective	9 (4%) <sup>7</sup>	13 (4%) <sup>7</sup>	9(4%) <sup>6</sup>	10(5%) <sup>5</sup>	41 (4%) <sup>7</sup>	7. Progress Review	14 (3%)	16 (4%) <sup>6</sup>	24(6%) <sup>6</sup>	23(6%) <sup>5</sup>	77(5%) <sup>7</sup>
8. Time Check	3 (1%)	15 (5%) <sup>6</sup>	4(2%)	6(3%) <sup>6</sup>	28(3%) <sup>8</sup>	8. Past Experience	20 (4%) <sup>7</sup>	12 (3%) <sup>7</sup>	20(5%) <sup>8</sup>	15(4%) <sup>8</sup>	67(4%) <sup>8</sup>
9. Level Check	3 (1%)	15 (5%) <sup>6</sup>	2(<1%)	2(<1%)	22 (2%)	9. Decision	16 (3%)	8 (2%)	16(4%)	11(3%)	51 (3%)
10. Problem Check	3 (1%)	11 (3%)	1<1%)	3(1%)	18 (2%)	10. Time Check	14 (3%)	4 (1%)	12(3%)	12(3%)	42 (3%)
11. Materials Comment	8 (3%)	6 (2%)	0	2(<1%)	16 (2%)	11. Beliefs	10 (2%)	5 (1%)	12(3%)	7(2%)	34 (2%)
12. Comprehensibility	2 (<1%)	9 (3%)	2(<1%)	4(2%)	17 (2%)	12. Comprehensibility	6 (1%)	8(2%)	8(2%)	8(2%)	29 (2%)
13. Group/Pair Work	2 (<1%)	9 (3%)	4(2%)	5(2%)	20(2%)	13. Group/Pair Work	1 (<1%)	8 (2%)	8(2%)	11(3%)	27 (2%)
14. Content	4 (2%)	6 (2%)	4(2%)	2(<1%)	16 (2%)	14. Materials Comment	2 (<1%)	3 (<1%)	12(3%)	8(2%)	25 (1%)
15. Beliefs	6 (3%)	1 (<1%)	1(<1%)	6(3%)	14(1%)	15. Planned Acts	1 (<1%)	2 (<1%)	8(2%)	12(3%)	23 (1%)
16. Past Experience	4 (2%)	2 (<1%)	1(<1%)	3(1%)	6(1%)	16. Level Check	6 (1%)	6 (1%)	1 (<1%)	1 (<1%)	14 (<1%)
17. Aid Comprehensibility	2 (1%)	1 (<1%)	0	0	0	17. Self-Critique	9 (2%)	0	1 (<1%)	3(1%)	13 (<1%)
18. Decision	1 (<1%)	0	2(<1%)	5(2%)	10 (1%)	18. Content	1 (<1%)	5 (1%)	3(<1%)	3(1%)	12 (<1%)
19. Name Check	1 (<1%)	0	1(<1%)	1(<1%)	3(<1%)	19. Institution Comment	1 (<1%)	0	4(1%)	7(2%)	12 (<1%)
20. Planned Acts	1 (<1%)	0	4(2%)	3(1%)	8(<1%)	20. Problem Check	5 (1%)	2 (<1%)	0	4(1%)	11(<1%)
21. Probe Knowledge	0	0	2(<1%)	3(1%)	5(<1%)	21. Name Check	1 (<1%)	2 (<1%)	4(1%)	3(1%)	10(<1%)
22. Institution Comment	0	0	0	0	0	21. Aid comprehensibility	2 (<1%)	0	2 (<1%)	3(1%)	7(<1%)
23. Self-Critique	0	0	5(3%) <sup>8</sup>	4(2%)	9(<1%)	23. Probe Knowledge	0	1(<1%)	0	4(1%)	5(<1%)
24. Curriculum Fit	0	0	0	0	0	24. Curriculum Fit	0	0	0	0	0
Total	234	324	206	219	983	Total	495	410	395	387	1678
Thoughts per minute	2.6	3.6	2.7	2.9	2.9	Thoughts per minute	5.5	4.5	4.4	4.3	4.7

Note: Subscripts indicate the ranking of the teachers' dominant reported pedagogical thought

Table 1: frequency, ranking and percentage of teachers' reported pedagogical thoughts

on the other hand, produced a smaller number of thoughts (3.6) per minute, compared to the experienced teachers in the current study.

*Pedagogical thought categories: within group comparisons*

Table 1 further shows a high degree of commonality between the top six dominant categories reported by teacher A, B, C and D, the less experienced group. For teacher A, Language Management (38%) was followed by Procedure Check (12%), Knowledge of Students (9%), Note Behavior (8%), Self-Reflection (6%) and Progress Review (6%) which together comprised around 79 % of the total number of thoughts reported by this teacher. In addition, teacher B recalled Language Management (37%), Knowledge of Students (11%), Procedure Check (9%), Progress Review (7%), Note Behavior (6%), and Time Check (5%) with the highest frequency; these made up to 75% of the total number of thoughts recalled by this participant. The rankings teacher C and D attach to the top six categories are both similar and slightly different from the other two instructors in the same group. For both teacher C and D Language Management ranks first (45% and 43% respectively) followed by Procedure Check (10% and 12%, ), Progress Review (9% and 6% ), and Note Behavior ( 6% for both participants). While Affective thoughts (5%) occupy the fifth position in teacher D's recall, Note Behavior and Self-Reflection (both 6%) come next in teacher E's recollections. Like teacher D who pays a similar amount of attention to Knowledge of Students and Self-Reflection (both occupy 3% of his reported thoughts), teacher E reports equal number of thoughts on Knowledge of Students and Affective (4% each). An interesting finding is that of these six dominant categories, five, i.e. Language Management, Procedure Check, Knowledge of students, Note Behavior, and Progress Review were found to be the common top categories reported by the two teachers with similar percentages.

Within the experienced teachers' group, teacher E's top six categories, which accounted for 78% of the total number of categories recalled, included Self-Reflection (23%), Language Management (19%), Affective (11%), Knowledge of Students (10%), Procedure Check (9%), and Note Behavior (6%). For teacher F, Language Management (22%) came first followed by Self-Reflection (18%), Knowledge of Students (11%), Procedure Check (10%), Affective (10%), and Note Behavior (9%) which made up to 80% of the total number of thoughts reported by this participant. The other two experienced practitioners, teachers G and H, were much more homogeneous in the thoughts reported; Self-Reflection (20%) was the top category for teacher G, followed by Language Management (13%), Procedure Check (11%), Note Behavior (8%), Progress Review and Knowledge of Students (each 6%). Almost equally, teacher H recalled Language Management (20%), Self-Reflection (16%), Note Behavior (7%), Progress Review and Affective (each 6%) as the top six categories in his output. In terms of the categories reported and the percentages, experienced teachers showed more homogeneity compared to their less experienced colleagues.

*Pedagogical thought categories: across group comparisons*

A closer examination of the categories reveals more intriguing findings. Considering the top six categories recalled by the two groups, the analysis shows that there is a high degree of commonality in the thoughts reported by the experienced and less experienced teachers. Language Management, Self-Reflection, Knowledge of Students, Procedure Check, Note Behavior, Progress Review, and Affective turned out to be the common top seven categories to both groups; among these, Knowledge of Students, Procedure Check, Note Behavior, and Progress Review occupied approximately similar percentages. It may be argued that despite the influence of teaching experience on the number of thoughts teachers resort to while performing in the class, experience is not much influential on the predominant thoughts practitioners have while teaching.

Apart from these general similarities, some specific points of divergence in the pattern of pedagogical thought of the two groups emerged. Experienced teachers provided a higher number of thoughts regarding Decision, Past Experience, Affective and Self-Reflection and a lower number of thoughts on Language Management, Progress Review, Content, and Materials Comment compared to less experienced teachers; Table 2 presents the frequency, ranking and percentage of the patterned categories across the two groups. In other categories also differences were observed among the total frequencies of the experienced and less experienced teachers' thoughts; however, these variations were found to be due to the higher number of thoughts drawn upon only by one teacher in each group. We decided not to attach much significance to this observed difference since it could be attributed to an individual teacher's preference. More research, however, is needed to clarify the issue.

Categories	Experienced	Less- experienced	All teachers
1. Language Management	316(19%) <sup>2</sup>	394(40%) <sup>1</sup>	710 (27%) <sup>1</sup>
2. Self-Reflection	332(20%) <sup>1</sup>	46(5%) <sup>4</sup>	378 (14%) <sup>2</sup>
3. Knowledge of Students	138(8%) <sup>4</sup>	71(7%) <sup>2</sup>	209(8%) <sup>3</sup>
4. Affective	146(9%) <sup>3</sup>	41 (4%) <sup>5</sup>	187 (7%) <sup>4</sup>
5. Progress Review	77 (5%) <sup>5</sup>	57 (6%) <sup>3</sup>	134 (5%) <sup>5</sup>
6. Past Experience	67(4%)	10(1%)	77 (3%)
7. Decision	51 (3%)	8 (<1%)	59 (2%)
8. Materials Comment	25 (1%)	16 (2%)	41 (2%)
9. Content	12 (<1%)	16 (2%)	38 (1%)
10. Level Check	14 (<1%)	22 (2%)	36 (1%)
11. Problem Check	11 (<1%)	18 (2%)	29 (1%)
<i>Thoughts per minute</i>	5	3.1	4.07

**Table 2. Frequency, ranking and percentage of the patterned categories across the two groups**

Less experienced teachers' higher concern with Language Management in the present study (40% vs. 19%) is in sharp contrast to Nunan's (1992), Gatbonton's (1999; 2008) and Mullack's (2006) studies as they found that experienced teachers were more concerned with Language Management compared to novice ones. This divergence from the available literature might be captured by the observation that the experienced teachers in the current study enjoyed intensive teaching hours and were reported as being highly qualified by the institutes' supervisors; consequently, they experience a higher level of

self-awareness and reflect more on their own styles of teaching and strategies in dealing with the students.

Compared to less experienced teachers who reported the highest number of thoughts on Language Management, experienced teachers had the highest response tokens on Self-Reflection, i.e. teachers' comments about themselves (see table 2). This finding is in sharp contrast with that of Mullack (2006), where less experienced teachers provided more comments on their own personality (5% and 6%) than did the more experienced ones (1% and <1%). Mullack (2006) hypothesized a causal relationship between experience and self-reflection, the higher the experience the lower the concern with Self-reflection, but calls for further research to confirm this relationship. Based on the finding of the current study, however, the existence of such a negative relationship between experience and Self reflection is not confirmed.

Experienced teachers' more reliance on Decision, 'pedagogical thought units dealing with the choices that teachers make at different junctures in the lesson (e.g. *So I thought leave it alone*)' (Gatbonton, 2008) in the present study is confirmed in the literature by studies like the one by Richards (1998) whose experienced teachers made greater use of on-the-spot modification of planned activities or interactive decision making and drew less on proactive decisions as a source of their performance. However, Johnson (1992) came to a contradictory result; her pre-service teachers (who can be regarded as less experienced) made more decisions while teaching due to instructional management reasons and to ensure students' understanding and motivation.

Experienced teachers' preoccupation with the Affective Issues in their practice in the present study seems surprising considering Fuller's (1969) teacher development model, based on which novice teachers go through three stages of development in their professional career, the first of which is concerned with self image and establishment of interpersonal relationships. It comes as a surprise then to observe experienced teachers are more concerned with the affective bonds; hence more involved in the establishment of interpersonal relationships. The finding of the present study is further in contrast with that of Gatbonton (2008) as her novice teachers were more concerned with Affective thought units; she interprets such preoccupation of her novice teachers as consistent with the findings in the general education that beginning teachers are usually more concerned with such issues, i.e. their relationship with students and how students reacted to them, than with pedagogical procedures and learning outcomes (e.g. Fuller, 1969).

However, less experienced teachers' more reliance on Progress Review, Problem Check, and Level Check, which can be interpreted as their concern with students' learning, has been both supported and opposed in the literature. Watzke (2003; 2007), for instance, claimed that less experienced teachers, those having below two years of teaching practice, show sustained concerns for students' learning and well-being. Berliner (1986), however, came to a contradictory finding; his less experienced teachers were more concerned with self image and classroom management compared to experienced ones, who concentrated more on student learning. In the meantime, less experienced teachers' preoccupation with the Content category in the current study is in contrast to Richards, Li and Tang's (1998) findings that indicate less experienced teachers did not have a deep understanding or knowledge of the content they were teaching.

A further finding is that less experienced teachers in the present study were as much concerned with Knowledge of Students as their experienced counterparts (8% and

7%); this observation is not unexpected given the fact that knowing students' abilities, personalities, attitudes, interests, and feelings appears after one year of teaching (Fuller, 1969; Kagan, 1992). This is while novice teachers exerted even a higher concern for Knowledge of Students than their experienced counterparts in Gatbonton (2008) (10% and 7%) providing a further proof for her claim on the preoccupation of the novice teachers with the relationship with the students.

**Pedagogical thought categories: The present study, Mullack's (2006) and Gatbonton's (1999)**

Table 3 compares the eight top most frequent categories in the current study with those of Mullack (2006) and Gatbonton (1999). As the table shows the top eight categories in the present study, both in experienced and less experienced teachers' recall and in Mullack's accounted for approximately the same percentage of the total number of pedagogical thoughts reported (85% for the experienced teachers, 82% for the less experienced ones in the present study and 83% for Mullack's teachers). These categories in Gatbonton's study, however, accounted for a much lower percentage (73% of the total pedagogical thoughts).

The comparison of the pedagogical thought categories in the present study and those of Gatbonton and Mullack further reveals a high degree of similarity in their rankings. The categories of Language Management, Knowledge of Students, Procedure Check, Affective, Note Behavior, and Progress Review were common across all studies with Language Management as the highest reported thought category in Mullack's, Gatbonton's group 1 and group 2 teachers and less experienced teachers in the present study.

It is interesting to note that Knowledge of Students was reported with a high frequency by teachers in all studies; this category has also been reported in the literature to be amongst the most frequently cited thoughts recalled by the teachers. Breen (1991) for instance, found seven categories of which *learner-focused-matters* were among the most frequently cited; he observed that *focus on the learners* accounted for approximately half the justifications used in teaching. Mullack (2003, cited in Mullack 2006) also found that Knowledge of Students was the most frequently cited characteristic of a good teacher.

Rank	Current study Group one	Current study Group two	Mullack	Gatbonton Group 1	Gatbonton Group 2
1	Language Management (40%)	Self-Reflection (20%)	Language Management (25%)	Language Management (18%)	Language Management (22%)
2	Procedure Check (10%)	Language Management (19%)	Knowledge of Students (21%)	Knowledge of Students (14%)	Procedure Check (11%)
3	Knowledge of Students (7%)	Procedure Check (10%)	Procedure Check (10%)	Note Behavior (10%)	Progress Review (10%)
4	Note Behavior (7%)	Affective (9%)	Progress Review (7%)	Decision (7%)	Beliefs (8%)
5	Progress Review (6%)	Knowledge of Students (8%)	Note Behavior (7%)	Progress Review (6%)	Knowledge of Students (7%)
6	Self-Reflection (5%)	Note Behavior (8%)	Affective (5%)	Affective (6%)	Decisions (6%)
7	Affective (4%)	Progress Review (5%)	Time Check (4%)	Beliefs (6%)	Affective (6%)
8	Time Check (3%)	Past Experience (4%)	Self-Reflection (4%)	Procedure Check (6%)	Note Behavior (3%)
<i>Total</i>	82%	85%	83%	73%	73%

**Note:** Gatbonton in the table of categories for course II teachers reports 3 categories with the frequency of 6%, tied at the ranking of eight. In the above table we only included Note Behavior as the eighth category which occurred 34 times in the corpus

**Table 3: Comparison of the top 8 categories in the present study with Gatbonton and Mullack**

A closer examination of the table reveals some points of divergence, however. First, the category of Self-Reflection which was ranked first and sixth in the current study did not appear within the top eight categories reported by Gatbonton's (1999) teachers. Though it occurred amongst the top categories in Mullack's (2006) study, it turned out to have been more frequently drawn upon by experienced teachers in the current study (20%). Due to the fact that the experienced teachers in the current study have been exposed to different teaching contexts in the course of their career, they have become more conscious of details that can affect their performance and students' learning outcomes. As a result, it should not come as a surprise to see that they reflect highly on their own likes, preferences, attitudes, styles of teaching and strategies in their classes. The appearance of Past Experience, i.e. teachers' comments on what they used to do in the past, within the dominant categories reported by experienced teachers in the present study might also be explained by the longer teaching history of the participants and the fact that their teaching schemata is a natural source of decisions for classroom events.

Second, the category Beliefs and Decisions appeared within the top thought categories reported by Gatbonton (1999). However, they were not reported highly in the present study and Mullack's (2006). This is while it was expected that our teachers with a

high percentage of thoughts on Self-Reflection report a considerably higher number of thoughts on Belief. This finding could be justified by the fact that teachers in the present study, like those of Mullack (2006), had all completed their B.A degrees and did not continue their studies at the M.A level during which, according to Mullack, they are “required to articulate their theories of teaching in order to understand them, compare them with alternatives, and evaluate them for usefulness” (2006, p. 57).

### *Section 2: Language Management Category*

Following the lead of Mullack (2006) and given that approximately 40% and 19% (compared to 25% in Mullack's study) of the reported pedagogical thought units in the current study related to Language Management, we decided to further scrutinize this category for the purpose of comparison both across the two groups in the current study and between the current study and Mullack's (2006). Table 4 lists different thought units included in Language Management.

Contrary to Mullack (2006) who found 98 different units in this category (she only lists the top 20 units in her paper) we only came up with 30 units in the present study (see table five).

We found that 9 units were shared by all teachers: Elicit Possible Answers, Teach/Explain Vocabulary, Teach/ Explain grammar, Write up Answers on WB/BB, Elicit Language (Vocabulary/tense), Conduct Classroom Activity, Correct Errors (Vocabulary/Grammar), Note Student Difficulty with Finding Correct Language, and Push Specific Language, (Vocabulary/Grammar); still, we could not find a total commonality in 21 other units. The resulting commonalities in 9 units and lack of similarity in 21 other units with the consideration that all teachers were teaching the same course book in the same institutional context, can be justified by reference to the variations in class focus and differences in teacher's personality. On closer analysis, the highest individual percentages of reported thought units produced are Elicit Possible Answers for six of the teachers (20% for teacher B, C, F, 21% for teacher E, 11% for teacher D and 13% for teacher H) and Teach Grammar (11% for teacher A and 19% for teacher G). At the same time, the largest range of thought units was produced by teachers E, F, and H (experienced ones, 24 units each).

Pedagogical Thought Units	Teacher A	Teacher B	Teacher C	Teacher D	Teacher E	Teacher F	Teacher G	Teacher H	All teachers
1. Elicit Possible Answers	7 (8%)	23 (20%)	18 (20%)	11 (11%)	20(21%)	18(20%)	6(11%)	10(13%)	113(16%)
2. Teach/Explain Vocabulary	9(10%)	6(5%)	15 (16%)	6 (6%)	9 (9%)	12(13%)	4(8%)	5(6%)	66(9%)
3. Teach/ Explain grammar	10(11%)	15 (13%)	3 (3%)	6 (6%)	2(2%)	2(2%)	10(19%)	1(1%)	48(7%)
4. Write up Answers on WB/BB	6 (7%)	10 (9%)	4 (4%)	6 (6%)	4 (4%)	7 (8%)	4(8%)	5(6%)	46(7%)
5. Conduct Classroom Activity	6 (7%)	10 (9%)	5(6%)	6 (6%)	2 (2%)	3 (3%)	5(10%)	4(5%)	41(6%)
6. Elicit Language (Vocabulary/tense)	7(8%)	5(4%)	5(5%)	4 (4%)	9(9%)	3 (3%)	2(4%)	3 (4%)	37(5%)
7. Get Students to Paraphrase	5(6%)	7 (6%)	4 (4%)	8 (8%)	0	4 (4%)	1(2%)	5(6%)	34(5%)
8. Teach pronunciation	4(4%)	5(4%)	3 (3%)	5(5%)	1(1%)	1(1%)	0	8 (10%)	(4%)27
9. Correct Errors (Vocabulary/Grammar)	2(2%)	4 (3%)	2(2%)	3 (3%)	6(6%)	2(2%)	3(6%)	2 (3%)	24(3%)
10. Note Student Difficulty with Finding Correct Language	3 (3%)	3 (3%)	3 (3%)	3 (3%)	4 (4%)	2 (2%)	2(4%)	3 (4%)	23(3%)
11. Recycle grammar	5(6%)	6(5%)	0	1(1%)	1(1%)	2(2%)	2(4%)	2 (3%)	19(3%)
12. Prompt Students	0	3 (3%)	4 (4%)	1(1%)	3 (3%)	5 (6%)	0	3 (4%)	19(3%)
13. Note Errors	0	2 (2%)	1(1%)	0	8 (8%)	1 (1%)	3(6%)	2 (3%)	18(3%)
14. Push Specific Language (Vocabulary/Grammar)	3 (3%)	1 (<1%)	2(2%)	2(2%)	2 (2%)	4(4%)	2(4%)	2 (3%)	18(3%)
15. Correct Errors (pronunciation)	2(2%)	1(<1%)	0	3 (3%)	5 (5%)	2(2%)	1(2%)	3 (4%)	17(3%)
16. Recycle Vocabulary	4 (4%)	5(4%)	1 (<1%)	1 (<1%)	0	1 (1%)	2(4%)	1(1%)	15(2%)
17. Call Student Attention to Language(Grammar/Vocabulary)	1 (1%)	0	4 (4%)	1 (<1%)	1 (1%)	4 (4%)	2(4%)	1(1%)	14(2%)
18. Call Students' Attention to Language (pronunciation)	3(3%)	2(2%)	0	0	3(3%)	1(1%)	1(2%)	3 (4%)	13(2%)
19. Elicit Language (Pronunciation)	2(2%)	0	1 (<1%)	5(5%)	0	0	0	4(5%)	12(2%)
20. Recycle Pronunciation	2(2%)	4(3%)	0	2(2%)	3(3%)	0	0	1(1%)	12(2%)
21. Push specific Language (pronunciation)	2(2%)	1(<1%)	1 (<1%)	3 (3%)	1(1%)	0	0	3 (4%)	11(2%)
22. Get Students to Read and Describe	2 (2%)	0	0	0	0	5(6%)	0	4(5%)	11(2%)
23. See If Students are Using the Language Correctly	2 (2%)	1 (<1%)	0	4 (4%)	0	0	1(2%)	2 (3%)	10(1%)
24. Teacher Paraphrasing	2 (2%)	0	1 (<1%)	2(2%)	0	4 (4%)	0	0	9(1%)
25. Compare Students' Answers with Correct Answers	0	1 (<1%)	0	1 (<1%)	4(4%)	2 (2%)	0	0	8(1%)
26. Revise Language (Vocabulary/Grammar)	0	0	1 (<1%)	0	2 (2%)	1(1%)	2(4%)	0	6(<1%)
27. Use of L1	0	3 (3%)	0	0	0	2 (2%)	0	0	5(<1%)
28. Revise Language (pronunciation)	1(1%)	0	0	0	3(3%)	0	0	1(1%)	5(<1%)
29. Promote Learning Strategy	0	0	0	0	0	2(2%)	0	0	2(<1%)
30. Concept Check	0	0	0	0	2 (2%)	0	0	0	2(<1%)
31. Know Curriculum	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>90</b>	<b>118</b>	<b>92</b>	<b>94</b>	<b>95</b>	<b>90</b>	<b>53</b>	<b>78</b>	<b>393</b>

Table 4: frequency, ranking and percentage of the thought units in the category Language Management

Mullack (2006) could only find similar percentages among three thought units. There are likely to be a number of explanations for the difference between the current study and that of Mullack (both in the number of thought units reported and in the variation observed among different units). Mullack's teachers used different materials and were teaching at different institutional contexts; this fact points to lots of variations in the reported thought units. Accordingly, her teachers had a wide range of classroom focus (this accounts for the observation that similarities were not found in the highest individual

percentages for reported thought units produced by her teachers, that is, Get students to Read and Describe for teacher A, Push Specific Language for teacher B, Promote Learning Strategy for teacher C, and Prompt Students for teacher D). Mullack herself attributes the reported variations to differences in class focus; for instance, students in teacher C's class were to master certain lexico-grammatical features in preparation for the CAE examination, so the teacher consciously promoted certain strategies to help students achieve this goal.

Another interesting finding in the present study is that in some units some patterns could be identified in the performance of experienced and less experienced teachers; for instance, less experienced teachers recalled a higher number of thought units on Get Students to Paraphrase (6%, 6%, 4 % and 8% vs. 0, 4%, 2% and 6% for the experienced teachers). Notwithstanding the resulting similarities across the two groups, we feel hesitant to attribute the emerged pattern to teachers' experience. The similarity might, instead, be better justified by differences in the lesson focus of different teachers; a glance at the lesson focus of different classes might well explain the phenomenon. Based on this, we do not propose a clear link between experience and the focus or lack of focus on the particular features of the language in the class when it comes to such thought categories.

## CONCLUSION

This study is a further proof of the observation that teachers' mental and cognitive lives are worth a closer examination. It also partly documents the qualitative and quantitative changes that exist among teachers with different amounts of experience. In a modified replication of Gatbonton (1999) and Mullack (2006), the study tried to determine how teachers' pedagogical decisions differ in their number and category when the participants come from different stages of professional development. Save for one thought only (Curriculum fit), all the categories found in Gatbonton's and Mullack's studies were observed in the present work.

This study points to some patterns in the pedagogical knowledge base of experienced and less experienced teachers and can be regarded as a further proof of transformations in teacher cognition over time; in other words, a further piece of evidence on the existence of a "particular pedagogical culture acquired by experienced teachers as their experiences deepen" (Feinman-Nemser & Flodder, 1986, cited in Gatbonton, 1999, p. 15). In fact, this finding appears to be a step towards answering the question posed by Gatbonton: "if one assumes that novice and experienced teachers occupy different stages in a continuum depicting the development of expertise, would novice-experienced differences reveal something about the nature of this difference?" (Gatbonton, 1999, p. 17).

The fact that the findings of the present study somehow overlap, and at the same time differ from the studies it aimed at replicating, will mean that more research is needed in this area. More innovative research methods are also needed to provide a more direct, online access to what teachers are experiencing in their class as they make their instructional decisions. Finally, more extensive data collection over a period of time will undoubtedly result in more valid interpretation and categorization of teachers'

pedagogical thoughts and any potential difference that might be attributable to personal/contextual variables. In addition, attempts must be made to relate such differences in teachers' thought patterns to what the whole educational system is all about, i.e., students' achievements.

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### **Acknowledgement**

We would like to thank Dr. Elizabeth Gatbonton for her guidance over different steps of data analysis.