Reading Comprehension in Test Preparation Classes: An Analysis of Teachers' Pedagogical Content Knowledge in TESOL

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This article examines the pedagogical content knowledge which underpins the practices in reading lessons of experienced teachers in test preparation classes. It takes as a starting point the assumption that practice is shaped by teacher cognitions, which are established through professional training and classroom experience. Thus, the study explores the nature of reading comprehension pedagogy and also the ways teachers vary and adapt their approach. The study, carried out in upper intermediate TESOL classrooms in Greece, draws on video-recorded classroom data, field notes, and interviews with four teachers. The analysis focuses on lesson structures, reading and test-taking strategy awareness raising, and teachers' knowledge about texts. It validates the established reading skills lesson structure—pre-, while-, and post-reading—but shows how this can vary in implementation. It suggests that the attention to strategies is not only explicit strategy instruction, but also situated demonstration by the teacher of how strategies can unlock the meaning of the text. The pedagogy overall is conditioned by the test preparation context of the program; the teachers are mindful of this goal and integrate references to the test to anchor the pedagogy in students' current reality and to demonstrate how specific strategies can aid comprehension.

Second language (L2) reading comprehension has long been a core element of language teaching and assessment. Texts and questions are a staple of both teaching materials and language proficiency tests, and the methods teachers can use are found in methodology

textbooks and teaching manuals. A small number of teacher cognition studies in L2 reading address some of these methods (Cabaroglou & Yurdaisik, 2008; El-Okda, 2005; H. Li & Wilhelm, 2008; Macalister, 2010). However, only one study—by Meijer, Verloop, and Beijaard (1999)—has adopted the concept of pedagogical content knowledge (PCK) to interpret teachers' practices in reading lessons. This article reports on a study which examined the practices of experienced teachers of reading in lessons where the focus was on reading comprehension test preparation. The research focuses on the PCK of teachers—knowledge about reading instruction (KARI), including reading strategies, and knowledge about texts (KAT)—as evidenced through their practices in actual lessons and explored in interviews following the observed lessons. We follow and develop further the research strategy used by Borg (2003) to understand how teachers teach grammar and by Breen, Hird, Milton, Oliver, and Thwaite (2001) to uncover the principles which shaped teachers' decision making and practices in lessons. The analysis in this article draws on classroom observation data, supported by teacher interviews and field notes.

REVIEW OF THE LITERATURE

Language Teacher Cognition

Teacher cognition as defined by Borg (2003, p. 81) is what "teachers think, know and believe and the relationship of these mental constructs to what teachers do in the language classroom." Language teacher cognition researchers refer to the significance of its origins in general education (Andrews, 2007; Borg, 2006; Freeman, 2002; Woods, 1996) where it has contributed greatly to the understanding of the complex nature of teaching and how this understanding may enhance the effectiveness of teacher education. An established reference is the work of Shulman (1986a, 1986b, 1987), who developed the concept of pedagogical content knowledge (PCK) in a series of articles. Shulman's studies emphasised the need for researchers to investigate teachers' understanding of subject-matter content and pedagogy. The relationship between content and pedagogy was seen to be central in identifying the knowledge base of teachers applied to a variety of teaching and learning contexts. This required teachers' understanding of the subject, learners, curriculum, context, and pedagogy. These components of knowledge played an important role in the interpretation of teachers' practices in the present study.

Andrews's (2007) modified model of PCK applicable to L2 teaching helped to further refine our interpretations of classroom practices. His

model depicts PCK as "the overarching knowledge base" with teacher language awareness (TLA) as "one subset of the teacher's knowledge bases (a knowledge base subset that is unique to the L2 teacher)" (p. 30). His model was developed in studies which investigated teachers' knowledge about grammar (KAG) related to the teaching of grammar (see, e.g., studies cited in Andrews, 2007). In this study we consider KAT an appropriate construct for understanding teachers' knowledge base of reading comprehension, for example, knowledge of text structure and how this informs pedagogy. This study is therefore influenced by both the original concept of PCK and its development by Andrews for the L2 classroom.

The Nature of L2 Reading

Research in L2 reading suggests that the most successful readers are those who use an interactive approach, combining both top-down and bottom-up skills while reading a text (Macaro, 2003). Bottom-up skills are those with which the reader focuses on the word level, whereas top-down skills draw on the reader's ability to sample the text and make hypotheses about what is coming next (Grabe & Stoller, 2002). A combination of skills such as skimming, scanning, and guessing words from context enables the reader to identify the main idea of a text and figure out meaning at the sentence level. Macaro (2003) suggests that the role of top-down hypotheses may be less significant than the use of information that readers make at the word level. Paran (1996) also emphasizes the importance of effective bottom-up processing for word recognition that leads to automaticity in reading. However, recent views on the nature of L2 reading (Grabe & Stoller, 2002; Hedgcock & Ferris, 2009; Hudson, 2007), while acknowledging that top-down and bottom-up models may lead to a greater understanding of processes in L2 reading, emphasise that there are limitations in using a strong form of either approach.

Particularly relevant to the context of this study (test preparation classes) is Grabe's (2007) explanation of the reading process in terms of component skills and knowledge bases which have direct links to widely accepted assessment practices in reading comprehension. The skills are related to capacity for word recognition, morphological and syntactical knowledge, and connecting main ideas to build a model of reading in which knowledge of discourse plays a key role. Hudson (2007, p. 25) presents a similar account of the processes which affect success in reading.

Grabe (2007) notes that L2 readers' knowledge of discourse and text structure is less effective than that of first language (L1) readers,

because they "draw on distinct sets of background knowledge and sociocultural knowledge" (p. 57). This suggests that L2 language proficiency and reading comprehension skills are mutually reinforcing, and the reading teacher should maintain a focus on the development of the L2 language system, as set out in the early literature (Alderson, 1984; Williams, 1986). Nation (2009), coming from the perspective of vocabulary development, and Grabe (2009) also recommend combining the development of language proficiency and reading skills, for example, preteaching of vocabulary.

Methodological Principles for the Teaching of L2 Reading

The discussion here focuses on recommended practices from teachers' methodology handbooks and pedagogical implications cited by researchers of L2 reading. An early methodological framework (Nuttall, 1996) is based on what have become recognised as the three stages of a reading lesson (prereading activities, while-reading activities, and postreading activities). The *prereading* stage includes activities for setting a context and purpose for the reading and activating relevant schemata in the students' minds. The *while-reading* stage involves scaffolding comprehension of the text section by section, guided by a task or through prompting, probing, and modelling strategies in classroom interaction. The *postreading* stage takes the comprehension to an evaluation and reflection stage: typically a real-life response to the text, for example, discussing with students whether the text changed their opinions on the topic. Nuttall identifies three major components of the teacher's knowledge base: understanding the reading process, knowledge about text such as text structure and genre, and methodology of the teaching of reading. More recent handbooks (Hedgcock & Ferris, 2009; Hudson 2007) focus more on research findings, but reflect knowledge bases and guidance for teachers similar to Nuttall's. The research reported here, like the Meijer et al. (1999) study mentioned earlier, draws on this approach to understand teachers' PCK of reading comprehension.

Most experts in L2 reading research and pedagogy agree that understanding and teaching effective reading strategies have positive outcomes (Chamot, 2005; A. Cohen, 1998; Grabe, 2004; Hudson, 2007). A seminal article on the strategic reader is that of Paris, Wasik, and Turner (1991), which focuses on L1 readers' ability to select "appropriate strategies that fit the particular text, purpose and occasion" (p. 11). Paris et al. present these strategies in the prereading, while-reading, and postreading framework. Thus a strategy development approach has become established as a dimension of L2 reading instruction. For example, Phakiti (2006) recommends classroom practices such as the teacher

modelling strategic reading behaviours, student self-assessment of performance on a reading task, and enhancing learner awareness of comprehension failure. Grabe, echoing the more general learning strategies literature (e.g., Chamot, 2005), emphasises the metacognitive aspect here: L2 readers benefit from being aware of personal tendencies and strategy options in comprehending challenging texts. However, as Grabe (2009) points out, L2 reading textbooks which have a range of pre-, while-, and postreading activities may not support the development of reading strategies (pp. 339–340). He also points out that effective classroom instruction derives in part from teachers' understanding of the reading test constructs (p. 373). In the next section we examine L2 reading instruction in the particular context of test preparation classes.

Test Preparation in L2 Reading Classrooms

The range of reading test preparation materials available attests to the importance of practice tests in classrooms. Where such materials are regularly used—as in the context of this research—it is reasonable to assume that the way teachers plan for and implement reading lessons is shaped by teachers' understanding of the reading test constructs and their assessment of the value of the practice tests and tasks available. Although some teachers use such materials solely to practice reading in test conditions, it is also possible that teachers use them to raise awareness, model strategies, and develop skills as part of effective L2 reading instruction. Where these are used in this way, teachers draw on their knowledge about text and their understanding of students' abilities and difficulties. Thus, they guide students in developing the necessary strategies, rather than just providing test practice (Nation, 1979). Many authors (e.g., Macalister, 2011; Phakiti, 2006; Wallace, 1992) support the view that multiple-choice questions can be used not only for testing but also for guiding students to understand the text. Thus, test preparation activity can support L2 reading comprehension skills, where in classroom interaction teachers focus attention on relevant strategies through modelling and awareness raising.

Blending of Content and Pedagogy

This review of the theoretical and methodological principles of teaching reading in L2 reflects the blending of content and pedagogy of PCK conceptualized by Shulman (1987) and its development for L2 proposed by Andrews (2007). It relates to a number of knowledge bases requiring teachers' understanding of the subject and knowledge

of learners, curriculum, context, and pedagogy. Thus, understanding the reading process informs the organization of reading instruction (pedagogy), such as the prereading, while-reading, and postreading stages of the lesson. KAT and KARI, combined with knowledge of students' linguistic and background knowledge, lead potentially to best practices in L2 reading instruction.

Such a complex process cannot be wholly understood from methodological manuals and then implemented in the classroom (Kiely & Davis, 2010). As represented in the teaching of experienced and expert teachers, classroom practice includes what teachers plan to do and how they manage the activities in the evolving interaction of the classroom, in terms of modelling, demonstrating, guiding, and questioning. In order to gain a better understanding of these practices, we summarise PCK for L2 reading instruction as follows:

a. Pedagogy
Knowledge about reading instruction

1. Organisation of reading instruction: prereading, while-reading, postreading
2. Explicit instruction and demonstration of reading strategies

b. Content
Knowledge about text

1. Knowledge of genre
2. Knowledge of the reading test constructs

The PCK framework guides the analysis of classroom observations for this study. The next sections provide an overview of the context, the participants, and the research design.

CONTEXT AND PARTICPANTS

The study was conducted in an established language centre in Greece, which provides English language programs from beginner to advanced levels. The study was carried out in classes for adult students preparing for the Examination for the Certificate of Proficiency in English (ECPE). The ECPE, developed by Cambridge Michigan Language Assessments (n.d.), is a high-stakes international examination in English administered worldwide. It is aimed at the C2 level of the Council of Europe's (2001) *Common European Framework of References for Languages*. The syllabus for examination preparation classes is based on skills devel-

opment activities and practice test materials, though teachers are not given specific guidelines for the methodology of these classes.

The four teachers (Teachers A, B, C, and D) in this study are experienced teachers (each with at least 10 years' teaching experience) who regularly teach classes for the ECPE preparation classes for adults. Two of them have an MA in TESOL/Applied Linguistics. Two of the teachers are balanced bilinguals in Greek and English, one is a native speaker of English with some knowledge of Greek, and the fourth is a native speaker of Greek with a high level of competence in English. The research study was carried out in the teachers' own classes.

RESEARCH DESIGN

This study, following Stake's (1995, 2000) notion of instrumental, collective case study, examines a particular case to gain insight into an issue. The study is *instrumental* because the cases themselves are not the focus of the study but are aimed at trying to understand the phenomenon. It is *collective* in the sense that the four individual cases (Teachers A, B, C, and D) may have similarities and differences leading to a greater understanding of how teachers teach in the specific context of this study, and the *why* of their actions. It is also typical of a case study in that it provides "a unique example of real people in real situations" (L. Cohen, Manion, & Morrison, 2007, p. 181).

The case study draws on qualitative research strategies that have become established in language teacher cognition (LTC) and PCK studies (Borg, 2006, 2012; Freeman, 2002; Johnson, 2006; Kiely & Davis, 2010; L. Li & Walsh, 2011). The data sets are classroom observation recordings and teacher interviews which relate LTC to actual lesson narratives, sequences, and interactions. We were mindful of the limitations of this study, for example, the development of a nonjudgemental relationship between the researcher and the participants during observations and interviews. Equally important, the data analysis took into consideration the difficulties of interpreting the participants' own depictions of their beliefs and practices as well as the researchers' attempt to be objective in the interpretation of observable classroom behaviour.

Classroom Observations

A nonparticipant approach for classroom observations was adopted (L. Cohen et al., 2007, p. 187). Its purpose was to describe as many of the observable components possible during the lesson—typical of open observations conducted in teacher cognition studies. Borg (2006,

pp. 232–233) describes 18 studies conducted from 1992 to 2005 which include observations of this nature. As Louis Cohen et al. (2007) point out, observations can be problematic, because teachers behave in the way they think observers want them to behave. We therefore adopted certain procedures suggested by Borg (2006) to minimise this effect; for example, we made it clear to the teachers beforehand that the focus was research, not teacher appraisal or evaluation.

For the first of two observations, we gave each teacher a reading task from an ECPE sample test. This particular test was chosen by the main researcher (first author) because it was representative of the materials available and had not been used in previous lessons by any of the teachers. It was decided that using the same text for the first observations may capture a diverse range of practices in teaching reading comprehension, within the parameters set by the use of a specific text. The sample test includes a text of 280 words on a scientific report about the relationship between birth weight and intelligence, accompanied by five multiple-choice reading comprehension questions. Teacher A and Teacher D were not given the accompanying multiple-choice questions. The purpose of providing the material in two different formats was to facilitate opportunities for two of the teachers to exploit the text in different ways other than the classical approach of reading through the text with the students, followed by the teacher's eliciting of the answers to the questions. Moreover, it was anticipated that the varied format might generate further insights into Teacher A's and Teacher D's KARI and KAT in comparison to Teacher B's and Teacher C's exploitations of the text with the original questions. All four teachers were requested to develop a 45-minute lesson based on the material they were given. In preparation for the second observation, the teachers were asked to choose any ECPE practice or sample test and decide on the procedure for use in a lesson. The topics of the texts selected by the teachers included road rage, cloning, and migraines.

The first observed lessons were recorded through handwritten field notes which consisted of a rich description of what the teacher was doing throughout the lesson, such as eliciting students' responses, explaining a phenomenon, and giving instructions (Sato & Kleinsasser, 1999). In the second observation, in addition to the handwritten field notes, the lessons were video-recorded and transcribed to show the classroom interactions (Burns, 1996). We chose not to video the first observation, in order to start with a less intrusive form of observation and to ease the teachers and students into the research process. The teachers and students gave their consent in advance for both observations to take place.

In summary, the narratives and transcripts facilitated an analysis based on the conceptual notion of PCK discussed earlier. This

research approach enriched by the L2 reading literature provided an effective framework for the analysis. The organization of instruction corresponded to the prereading, while-reading, and postreading stages of the lesson. Within the stages, incidents of explicit guidance on reading comprehension, raising awareness of text features, and demonstration of strategies could then be identified. These data from the observed lessons represented the teachers' KAT and KARI.

Postobservation Interviews

The postobservation interviews were semistructured with open-ended questions to elicit teachers' rationales for and evaluations of their actual teaching. The interviews were audio-recorded and transcribed. The researchers conducted a content analysis on the transcripts to understand the teachers' knowledge in relation to the key sources of Borg's (2006) framework for LTC: previous language learning experience, professional coursework, and contextual factors. Data from the classroom observations and the interviews were analysed for evidence of a relationship between the teachers' reading instruction PCK and their practice.

The next section presents and discusses the findings on how teachers organise and implement the teaching of reading comprehension. The analysis draws mainly on classroom observation data and illustrates how KARI and KAT operate and the ways in which orientation to strategy development is managed in practice.

FINDINGS AND DISCUSSION

KARI: Organization of Reading Instruction

The description of each teacher's classroom practice is in the form of a structured narrative based on the prereading, while-reading, and postreading framework. In each stage a number of activities were identified. For example, in the prereading stage there were various activities such as preteaching of vocabulary, activating students' background knowledge of the topic through guided discussion, or reminding students of certain test-taking strategies in preparation for the examination.

Although all four teachers organised their instruction in these three stages, the number of activities in each stage varied, apart from the postreading stage, which was fairly consistent. The number of activities during the prereading stage varied from one to four in the first observation, with the greatest number of planned activities occurring in the

while-reading stage, ranging from three to six. The total number of planned activities doubled in number for the second classroom observation of Teacher D compared to the first observation, whereas the total number of Teacher C's planned activities decreased by almost half the number for the second observation. The variation here might have been caused by the nature of the texts these teachers had selected for the second observation. Table 1 provides an overview of the distribution of activities in each stage. For example, Teacher A engaged in three different types of activities in the prereading stage of the first classroom observation.

The types of activities in the stages of each lesson varied from teacher to teacher. The following are examples of what the teachers did at each of the stages taken from either the first or second observation, followed by an analysis of how the framework was implemented.

In the prereading stage of the first observation, Teacher A established the purpose of reading in an examination context by first eliciting from students the purpose of reading in general. She then focused their attention on the specific purpose of reading related to the ECPE reading task. The responses the students gave illustrated that they understood from the multiple-choice questions the need to be able to interpret the meaning of the whole text as well as to understand the meaning of specific words. The third prereading task was a consciousness-raising activity to make students aware of specific strategies they could employ for the text they were about to read by using their background knowledge and their knowledge of grammar.

In contrast, Teacher B's and Teacher C's prereading stages of their first classroom observations linked more specifically to the topic of the texts in hand. Teacher B activated students' background knowledge on the topic through a discussion about intelligence and participation in a survey. Teacher C also stimulated students' background knowledge by eliciting whatever preconceived ideas they had on the relationship between birth weight and intelligence. The example below shows how Teacher C personalized the topic of cloning in her second classroom observation, while also creating an opportunity for students to make predictions about the content.

Example: Prereading

1. The topic is *cloning*, which Teacher C writes on the board. She spends 4 minutes … discussing … how they would feel about having their pets cloned…. [She] tells the students that the reason why they are having this discussion is because they are going to read a text about cloning.
2. She then gives the students the first sentence from each paragraph and asks the students to predict what each paragraph is

TABLE 1
Distribution of Activities Throughout the Prereading, While-Reading, and Postreading for Both Classroom Observations

	Teachers							
	A		B		C		D	
	Observation		Observation		Observation		Observation	
Stage	1	2	1	2	1	2	1	2
Prereading	3	3	3	1	2	2	2	4
While-reading	3	2	3	5	6	3	2	4
Postreading	1	1	1	1	1	1	1	2
Total	7	6	7	7	9	4	5	10

about. The teacher guides the students to predict the content of the text, e.g., focusing their attention on discourse markers. (Structured narrative of Teacher C's observation 2)

Teacher D focused mainly on vocabulary-related activities in the pre-reading stages of both observed classes as well as discussions on the topics of the readings. As can be seen in the example below, Teacher D prefaced these activities by reminding students of specific test-taking strategies regarding timed readings in examination conditions.

Example: Prereading

1. Teacher D begins the lesson by eliciting from the students the timings for the reading in examination conditions … strategies they should use, for example, reading the questions before reading the text.
2. Teacher D then introduces the topic … (migraines) and points out the Greek origin of the word, and elicits collocations of migraine, for example, *severe*.
3. He then discusses the causes of migraine with the students and checks related vocabulary which they will encounter in the text, for example, *trigger*.
4. He then moves on to discussing symptoms of migraine … elicits more words of Greek origin, for example, *nausea*, … focuses on treatment of migraines and students' personal experiences of migraines. (Structured narrative of Teacher D's classroom observation 2)

This account of the prereading stage illustrates three core features of L2 reading instruction. First, reading purpose, test context, and comprehension strategies come together in the discourse of the classroom. Second, the teachers achieve this multifaceted goal from different starting points: the topic, key lexical items, prior personal experience, or specific text attack strategies (Nuttall, 1996). This phase of the instruction was completed in under 10 minutes, suggesting that instruction is in brief, teacher-led messages, situated in a context made meaningful by the topic, much as Ellis (2001) characterises a focus-on-form approach to the teaching of grammar.

The activities in the while-reading stage also varied, consisting mainly of the following types of planned activities: students constructing their own comprehension questions, reading to confirm predictions about the content of the text, understanding rhetorical organisation, and focusing on meaning of words. These activities had fewer messages from the teacher; they involved students reading and completing comprehension tasks. Teacher B and Teacher C had a higher number of activities in this stage. Both teachers included handouts with vocabulary

activities to assist students in achieving a more thorough understanding of the text before moving on to the postreading stage. The task design for all four teachers, however, illustrates key dimensions of teacher knowledge about reading instruction discussed in the next section.

As mentioned earlier, the number of activities for postreading was constant. The types of activities, however, varied: Some focussed on language development, such as vocabulary study, some extended or reiterated messages about strategy use, whereas others provided reading or writing skills practice in relation to the topic of the test task exploited in the lesson. Teacher B gave an additional text on road rage to read for homework in preparation for a writing task on the same topic. Teachers A and C took the opportunity to do a recap of test-taking strategies recommended for the actual examination (e.g., reading the questions before reading the text), thus establishing a purpose for reading, ways to locate the relevant information in the text, and techniques to check the answers by analysing the distractors. In cases where the teachers did not have sufficient time to complete all planned postreading activities, students were given enough information for these activities to be carried forward to the next lesson.

This analysis of the reading lessons validates the pre-, while-, and postreading structure featured widely in the methodological literature. It shows also that teachers vary their management of the structure and use it to locate the lesson in the interests of students. Within the structure a range of strategies are demonstrated and talked about, in terms of both reading generally and the specific context of reading comprehension tests. This contrasts with Macalister's (2011) experience of novice teachers who tend in reading lessons to preteach vocabulary, have students answer the comprehension questions individually, and finally check the answers with each other. The experienced teachers of this study were aware of the richness of opportunities, particularly at the postreading stage; once a text has been introduced and understood, it can provide a basis for further communicative skills work, such as speaking and writing; for language analysis work, whether at the micro level of vocabulary or grammar study or more macro aspects such as discourse and text structure; or for extension, reiteration, or exemplification of core messages about reading strategies.

Knowledge About Reading Instruction

All four teachers aimed to develop students' awareness of reading strategies, for example, guiding students to predict the content, reading with a purpose, and guessing words in context. These messages were most evident in the while-reading stage, although, as set out in the pre-

ceding section, the orientation to strategy demonstration and awareness raising runs through the pedagogy of each of the teachers.

Teacher A was explicit about the use of strategies for predicting content and encouraged students to underline parts of the text which related to the questions. Teacher A also focused students' attention on timing, suggesting that predicting the content would help them read faster.

The following excerpt illustrates how Teacher A promoted the use of strategies to deal with difficult parts of the text. The teacher elicited, prompted, and probed to help students arrive at the correct answer.

102 Teacher: . . . And student 8?

103 Student 8 : What did the researchers find out about the relationship they were studying? I am not sure, but I believe that it is C. It decreases as the subjects grew older.

104 Teacher: OK. And where did you find the answer?

105 Student 8: By age 43 the relationship was negligible.

106 Teacher: Yeah. It was negligible. And before, what does it say before to help you understand?

107 Student 8: The relationship was strongest at age 8 and then weakened over time. (Transcript from Teacher A's classroom observation 2)

Teacher A seemed to be aware that students might have difficulty in understanding the meaning of *negligible* and thus led them to check the meaning of the previous sentence. This could be considered Teacher A's guiding one student to a strategy for determining the best answer for the benefit of the whole class, what Bailey (1996) terms "distributing the wealth" (p. 36).

Teacher B's main focus on reading strategies was to lead students to identify the main idea of each paragraph through comprehension of the topic sentence. This was located at the beginning in the first two paragraphs, but at the end in the last paragraph. Field notes show that the students had difficulty in understanding the main idea of the last paragraph and needed guidance from the teacher. The teacher used this feature of the text to raise awareness of different locations of the topic sentence and thus help students cope with this particular aspect of text difficulty (Bauman, 1984).

Another example of Teacher B's explicit teaching of reading strategies was her attempt to make students aware of the negative effect of relying too much on their background knowledge to interpret the

meaning of the text (Hudson, 2007). The excerpt below shows how Teacher B led the students to check information in the text to avoid being misled by preconceived ideas about the causes of road rage. In Turn 159, the teacher reinforces this point. Similar to Teacher A, Teacher B used a dialogic approach to help students arrive at the best answer for the multiple-choice questions.

150 Student 5: It doesn't mention anywhere.

151 Teacher: So it's not mentioned here. Is this something that you know?

152 Students: Yes.

153 Teacher: That it's provoked by crowded roads?

154 Student 5: I'm not sure, because there are many reasons.

155 Teacher: There are many reasons. Exactly.

156 Student 8: This is one of them . . . . Crowded roads is one of them.

157 Teacher: Yes. Is it mentioned here?

158 Student 8: No, here it's not mentioned.

159 Teacher: So, you see, that happens sometimes. OK. Based on what we know—OK. We know that road rage is a result of crowded roads. But, you know, we have to make sure that this is mentioned in the text. OK. That you have evidence from the text when you're answering the questions. OK. All right? Keep that in mind. I like this question very much because it shows that. (Transcript from Teacher B's classroom observation 2)

Teacher C also guided students to read for the main idea of each paragraph through identifying topic sentences. During the while-reading stage, Teacher C distributed handouts which required the students to match vocabulary from the text with definitions. Teacher C encouraged students to guess words from context, reminding them to refer to the text while doing the matching activity.

Teacher D was also concerned with students developing a strategy for guessing words from context. There were many opportunities in Teacher D's second observation for students to understand the meaning of words through recognition of Greek cognates (e.g., *symptoms, migraine*). Thus Teacher D made extensive use of his knowledge of students' L1 to make this strategy accessible to them. This corresponds to findings by Hudson (2007) which show that successful readers used cognates and therefore considered a useful strategy to develop with L2 readers.

Some of the activities which focused on specific test-taking strategies could also be regarded as strategies for reading in the real world, such as predicting the content of the text, relating background knowledge to the text, and guessing words from context. This interpretation of reading strategies reflects Andrew Cohen's (1998) characterisation of test-taking strategies (TTS) as language use strategies, which can also be applied to language test tasks. However, there were also instances of development of strategies which were specific to reading in test conditions, such as the timing of activities and analysis of distractors. Table 2 indicates whether the strategies developed at each stage were a combination of use of strategies for the test task and for reading in the real world (TTS&RS) or purely test-taking strategies (TTS). Each stage shows the number of instances. Teacher B's first observation contained one instance of TTS and two instances of TTS&RS for the while-reading stage.

All four teachers focussed on TTSs and TTS&RSs. A consistent pattern emerges at the while-reading stage—all four teachers attended to the development of strategies of both types (TTS and TTS&RS). Teacher A focussed on TTS at every stage of the second lesson. Teachers B and C had a similar distribution of strategies, with less focus on strategies at the prereading stage. Teacher D's focus on strategies at the prereading stage seemed to act as reminders to students to use strategies, rather than actual development of these strategies during the lesson.

TABLE 2
Distribution of Test-Taking Strategies and Reading Strategies

	Teachers							
	A		B		C		D	
	Observation		Observation		Observation		Observation	
Stage	1	2	1	2	1	2	1	2
Prereading	TTS TTS&RS	TTS TTS&RS	-	-	-	TTS&RS	TTS TTS&RS	TTS
While-reading	TTS TTS&RS	TTS TTS&RS	TTS TTS&RS TTS&RS	TTS&RS TTS&RS TTS	TTS&RS TTS&RS	TTS&RS	TTS&RS	TTS&RS TTS&RS
Postreading	-	TTS	-	-	-	TTS	-	-
Total number of TTS	2	3	1	1	0	1	1	1
Total number of TTS&RS	2	2	2	2	2	2	2	2

Knowledge About Text

KAT refers to the explicit knowledge of how texts and comprehension questions work, how paragraphs are structured, and how form and function relate in texts, which the teacher can draw on to enrich pedagogy. Teacher A's knowledge was evident through the reading comprehension questions she devised for the observed lesson, where she was provided with the text, but not the questions. Her questions reflected the organizational pattern of the text and were similar to the original questions of the sample test (see Table 3). The text was about a scientific study and included background information indicating the reason for the study, details of the study (number of participants, etc.), limitations of the study, and the conclusion. Teacher A's questions, which corresponded largely to those devised by the "expert" test materials writer, illustrated her KAT in the particular context of test preparation classes. Her choice of questions showed her understanding of a specific genre which relates to the reporting of a scientific study from a critical perspective and how reading comprehension has to reflect this.

Teacher B's KAT was evidenced in two ways. First, she was able to identify the topic sentences of each paragraph. Second, her knowledge of the reading test construct was demonstrated in her comments to the students about distractors. She explained how information in the distractors may be found in the text but does not answer the question. She also pointed out to students that the best answer may paraphrase rather than cite information from the text. Third, she focussed on how each comprehension question required a realization of a specific

TABLE 3
A Comparison of Teacher A's Comprehension Questions With the Sample Test Questions

Sample test questions (paraphrased)	Teacher A's questions
• What was studied? • What was learned from the study? • What is the main conclusion of the study? • What is one limitation of the study? • What is the main idea of the passage?	• What does the text say about full-term babies? • The study was conductd to show … • What did the results show? • What must be taken into consideraion? • What is the purpose of the text?

language function in the answer choice, such as definition or cause and effect. The excerpt below shows the teacher eliciting the function of each answer choice from the words that students had underlined in the multiple-choice questions. The purpose was to try to guide students to make associations between key words and the function of each question: *What* in the question may require a definition in the answer and *What happens* may require an answer which expresses the outcome of an action (Turns 120 and 121). The numbers 157 and 158 refer to the multiple-choice questions for the practice test.

115 Teacher: . . . And the answer should be the—what is road rage?

116 Students: The definition.

117 Teacher: Exactly. Definition. Number—the second one. 157?

118 Students: Cause

119 Teacher: Cause. Yes, very good. And 158?

120 Student 2: What happens.

121 Teacher: Happens. Right very good. So here you're looking for the—not the cause this time.

122 Student: The results? (Transcript from Teacher B's classroom observation 2)

Teacher C's KAT was also evident in her understanding of how the text was organized. In the following excerpt, she raises students' awareness of the function of discourse markers to predict the main idea of a paragraph. Starting from Turn 45 the teacher focusses attention on the discourse marker *although* and continues to probe one student's expectations of the content of the second paragraph. In Turn 50 the teacher reformulates the student's response *against* to *limitations*, which is a key word in the content of this particular paragraph.

45 Teacher: Now what about the second paragraph? You have this although at the beginning.

46 Student 1: Yes. That means that this procedure might be most expensive and probably will not work.

47 Teacher: But do we have evidence from this sentence?

48 Student 1 : Because it says that "It came only after several unsuccessful attempts of cloning a cat." That means that there is no science capable to reproduce in a way, under quotation marks.

49 Teacher: So what would you expect to find here? Something—

50 Student 1: Against in a way.

51 Teacher: Against. Something negative. Yes. Some limitations maybe.
Probably some difficulties. Yes. Difficulties could be the cost as
Student 1 pointed out. Could be the method maybe. (Transcript
from Teacher C's classroom observation 2)

The teachers' KAT as analysed here appeared to encompass three different areas. First, the teachers understood how texts are structured in terms of genre. Second, they knew about reading comprehension passages and questions. Third, they were aware of the specific contexts of tests, where students have to deal with predicted tasks or question formats, on their own, and under pressure of time. In the next section we explore how this KAT combines with KARI to illustrate how L2 reading instruction works.

Summary of Teachers' Knowledge and Practices

The findings reveal that the teachers' KARI had both similar and diverse features, which reflects the findings of Breen et al.'s (2001) teacher cognition study. The similarities in their KARI were evident in the organization of their instruction: prereading, while-reading, and post-reading. However, there was diversity in the type and purpose of the activities in each stage. There was also evidence that all four teachers spent less than 10 minutes for the prereading stage, which allowed them more time for the while-reading stage and to assist students with the reading process through teacher-led classroom dialogue. Such allocation of time would be expected in most classes taught by experienced teachers. The postreading activities, which generally related to writing and speaking, were not fully implemented in all lessons; it may be that the extent of postreading activities depends on time available and other features of specific lesson contexts.

Regarding the teachers' KAT, all four teachers demonstrated a capacity to analyse texts and comprehension questions in ways particularly (but not only) relevant to test-taking. This capacity covered micro aspects such as vocabulary and macro issues such as paragraph structure and text purpose. As can be seen from Teacher B's comments in her postobservation interview below, there were tensions about how much vocabulary she should preteach and how much time she should spend on reading strategies. Her concern was students' thinking that understanding every word was a prerequisite for understanding the meaning, a concern also noted in the English for academic purposes literature (e.g., Kiely, 2001).

24 *Teacher B: I don't know how much support they have to have. Sometimes*
we give them too much support. I don't know if that's good.
Cause it's like spoon feeding them. You have to strike a balance
there. What's too much? What's too little?

Teacher B's pondering how much vocabulary should be pretaught illustrates her understanding that there is no fixed position, but rather an ongoing dynamic process of striking a balance between scaffolding of reading comprehension skills and preparation for working wholly independently as in test contexts.

The data from the interviews illustrate that all four teachers were aware of the need to engage with vocabulary in the reading lesson and to pay specific attention to guessing or deducing meaning from context. This is a particularly important strategy for test contexts, where students have to work with the text on their own, drawing on their background knowledge and experience of taking tests. The observation data, however, do not show attention being paid to this whenever new words came up. It may be that although teachers can focus attention on deducing meaning from context, the actual test context, where the reader works in isolation, is difficult to replicate as skills practice. Further research, therefore, is needed for a better understanding of the relationship between teachers' knowledge and beliefs in general and their decision making in specific reading class contexts.

Context and experience of teaching test preparation classes at this level seem to be the major influences on the teachers' PCK translated into classroom practice. The teachers were aware of the particular skills and strategies which students needed to develop. Their understanding of how texts worked and of the reading test construct gave them insights into how their L2 reading instruction would be most effective. The following excerpt from Teacher A's postobservation interview illustrates her familiarity with the reading test construct.

52 *Teacher A: I looked through all the test papers.... There always seemed to be*
one question about the author. What was his opinion or what
did he think? Sometimes if there were dates they were more
specific about that. But generally, it was somehow, not a
general question; it was specific. But you had to look at
different parts of the text to be able to answer those questions.

The variability within certain parameters of the test construct represented a blend of the predictable and the uncertain, and the teachers had to prepare students for both. To achieve this, they deployed their KARI and KAT in the context of reading specific texts.

CONCLUSION

This study examined the principles underpinning the practices in reading lessons of four experienced teachers in test preparation classes using a framework based on the original concept of Shulman's PCK, combined with Andrews's (2007) modified model which expands the role of L2 teachers' subject-matter knowledge. The findings show that the four teachers' practices were based on similar features which reflected the theoretical and methodological principles of the teaching of reading conceptualized in this study as knowledge about reading instruction with varied adaptations. Their teaching also revealed an awareness of knowledge about text in terms of genre and its relationship to the reading test construct. The analysis of the test-taking and reading strategies underscored the impact the test had on the four teachers' classroom instruction. As illustrated in the interview data above, the study supports Borg's (2006) and Macalister's (2010) models of teacher cognition, where classroom practice derives from cognitions which are powered by beliefs, knowledge, and experience, and which are conditioned by professional context factors. In the specific context of L2 reading instruction, KARI and KAT are the PCK bases which shape practice. They frame the strategies which the teachers consider important for students who are preparing for a high-stakes test and determine what teachers emphasise in planning activities and in managing interaction in the classroom.

The analysis in this study illustrates the complexity of L2 reading instruction in test preparation contexts. Though guided by established lesson stages, skills, and strategies, the instruction shows considerable variation. Although these findings can generate discussion for the training of teachers for test preparation courses, further research is needed. More studies of this kind with other teachers in other test preparation environments would afford a more fine-grained account of the ways L2 reading instruction is shaped by the test format and by general pedagogic principles. Students' experience of test preparation courses like this is another area where research could provide valuable insights. Understanding the teaching of reading in the shadow of test formats is likely to be a way of capturing both teachers' and students' cognitions and practices.

In general, LTC studies have contributed to the development of the constructivist view of teacher education. "L2 educators have come to recognize that teacher learning is socially negotiated and contingent on knowledge of self, students and setting, subject-matter and curricula" (Johnson, 2009, p. 20). Through the practice of preparing students for the test, teachers develop their KARI and KAT. At the same

time they negotiate the social space of the classroom, establishing credibility with students and engaging them with strategies and insights which may benefit them.

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REFERENCES

Alderson, J. C. (1984). Reading in a foreign language: A reading problem or a language problem? In J. C. Alderson & A. H Urquhart (Eds.), *Reading in a foreign language* (pp. 1–27). London, England: Longman.

Andrews, S. (2007). *Teacher language awareness.* Cambridge, England: Cambridge University Press.

Bailey, K. M. (1996). The best laid plans: Teachers' in class decisions to depart from their lesson plans. In D. Nunan & K. M. Bailey (Eds.), *Voices from the language classroom* (pp. 15–40). Cambridge, England: Cambridge University Press.

Bauman, J. F. (1984). The effectiveness of a direct instruction paradigm for teaching main idea comprehension. *Reading Research Quarterly, 20,* 93–97.

Borg, S. (2003). Teacher cognition in language teaching: A review of research on what language teachers think, know, believe, and do. *Language Teaching, 36,* 81–109. doi:10.1017/S0261444803001903

Borg, S. (2006). *Teacher cognition and language education: Research and practice.* London, England: Continuum.

Borg, S. (2012). Current approaches to language teacher cognition research: A methodological analysis. In R. Barnard & A. Burns (Eds.), *Researching language teacher cognition and practice: International case studies* (pp. 11–29). Bristol, England: Multilingual Matters.

Breen, M. P., Hird, B., Milton, M., Oliver, R., & Thwaite, A. (2001). Making sense of language teaching: Teachers' principles and classroom practices. *Applied Linguistics, 22,* 470–501. doi:10.1093/applin/22.4.470

Burns, A. (1996). Starting all over again: From teaching adults to teaching beginners. In D. Freeman & J. C. Richards (Eds.), *Teacher learning in language teaching* (pp. 154–177). Cambridge, England: Cambridge University Press.

Cabaroglou, N., & Yurdaisik, A. (2008). University instructors' views about and approaches to reading instruction and reading strategies. *The Reading Matrix*, *8*, 133–154. Retrieved from http://www.readingmatrix.com

Cambridge Michigan Language Assessments. (n.d.). *Examination for the Certificate of Proficiency in English.* Retrieved from http://www.cambridgemichigan.org/ecpe

Chamot, A. U. (2005). Language teaching strategy instruction: Current issues and research. *Annual Review of Applied Linguistics*, *25*, 112–130. doi:10.1017/S0267190505000061

Cohen, A. (1998). *Strategies in learning and using a second language.* New York, NY: Addison-Wesley Longman.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (5th ed.). London, England: Routledge Falmer.

Council of Europe. (2001). *Relating language examinations to the Common European Framework: Teaching and assessment manual.* Strasbourg, France: Council of Europe, Language Policy Division.

El-Okda, M. (2005). EFL student teachers' cognition about reading instruction. *The Reading Matrix*, *5*, 43–60. Retrieved from http://www.readingmatrix.com

Ellis, R. (2001). Investigating form-focused instruction. *Language Learning*, *5*, 1–46. doi:10.1111/j.1467-1770.2001.tb00013.x

Freeman, D. (2002). The hidden side of the work: Teacher knowledge and learning to teach. *Language Teaching*, *35*, 1–13. doi:10.1017/S0261444801001720

Grabe, W. (2004). Research on teaching reading. *Annual Review of Applied Linguistics*, *24*, 44–69. doi:10.1017/S0267190504000030

Grabe, W. (2007). Reading assessment: Issues and opportunities. In C. Irvine-Niakaris & A. Nebel (Eds.), *Teaching and testing: Opportunities for learning: Proceedings of the 2nd Language and Testing and Evaluation Forum, June 2006* (pp. 52–69). Hellenic American Union: Athens, Greece.

Grabe, W. (2009). *Reading in a second language. Moving from theory to practice.* Cambridge, England: Cambridge University Press.

Grabe, W., & Stoller, F. (2002). *Teaching and researching reading.* Harlow, England: Longman.

Hedgcock, J. S., & Ferris, D. R. (2009). *Teaching readers of English: Students, texts and contexts.* New York, NY: Routledge.

Hudson, T. (2007). *Teaching second language reading.* Oxford, England: Oxford University Press.

Johnson, K. E. (2006). The sociocultural turn and its challenges for second language teacher education. *TESOL Quarterly*, *40*, 235–257. doi:10.2307/40264518

Johnson, K. E. (2009). Trends in second language teacher education. In A. Burns & J. C. Richards (Eds.), *The Cambridge guide to second language teacher education* (pp. 20–29). Cambridge, England: Cambridge University Press.

Kiely, R. (2001). Classroom evaluation: Values, interests and teacher development. *Language Teaching Research*, *5*, 241–261. doi:10.1177/136216880100500304

Kiely, R., & Davis, M. (2010). From transmission to transformation: Teacher learning in ESOL. *Language Teaching Research*, *14*, 277–296. doi:10.1177/1362168810365241

Li, H., & Wilhelm, K. H. (2008). Exploring pedagogical reasoning: Reading strategy instruction from two teachers' perspectives. *The Reading Matrix, 8,* 45–56. Retrieved from http://www.readingmatrix.com

Li, L., & Walsh, S. (2011). "Seeing is believing": Looking at EFL teachers' beliefs through classroom interaction. *Classroom Discourse, 2*(1), 39–57. doi:10.1080/19463014.2011.562657

Macalister, J. (2010). Investigating teacher attitudes to extensive reading practices in higher education: Why isn't everyone doing it? *RELC Journal, 41,* 59–75. doi:10.1177/0033688210362609

Macalister, J. (2011). Today's teaching, tomorrow's text: Exploring the teaching of reading. *ELT Journal, 65,* 16–179. doi:10.1093/elt/ccq023

Macaro, E. (2003). *Teaching and learning a second language: A guide to recent research and its application.* London, England: Continuum.

Meijer, P. C., Verloop, N., & Beijaard, D. (1999). Exploring language teachers' practical knowledge about teaching reading comprehension. *Teaching and Teacher Education, 15,* 59–84. doi:10.1016/S0742-051X(98)00045-6

Nation, I. S. P. (1979). The curse of the comprehension questions: Some alternatives. *Guidelines, 2,* 85–103.

Nation, I. S. P. (2009). *Teaching ESL/EFL reading and writing.* New York, NY: Routledge.

Nuttall, C. (1996). *Teaching reading skills in a foreign language* (2nd ed.). Oxford, England: Heinemann English Language Teaching.

Paran, A. (1996). Reading in EFL: Facts and fictions. *ELT Journal, 50,* 25–34. doi:10.1093/elt/50.1.25

Paris, S. G., Wasik, B. A., & Turner, J. C. (1991). The development of strategic readers. In R. Barr, M. L. Kamil, P. B. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 609–640). New York, NY: Longman.

Phakiti, A. (2006). Theoretical and pedagogical issues in ESL/EFL teaching of strategic reading. *University of Sydney Papers in TESOL, 1,* 19–50.

Sato, K., & Kleinsasser, R. C. (1999). Communicative language teaching (CLT): Practical understandings. *Modern Language Journal, 83,* 494–517. doi:10.1111/0026-7902.00037

Shulman, L. S. (1986a). Paradigms and research programmes in the study of teaching: A contemporary perspective. In M. C. Witrock (Ed.), *Handbook of research in education* (pp. 3–36). New York, NY: Macmillan.

Shulman, L. S. (1986b). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15,* 4–14.

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57,* 1–22.

Stake, R. E. (1995). *The art of case research.* Thousand Oaks, CA: Sage.

Stake, R. E. (2000). Case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 435–454). Thousand Oaks, CA: Sage.

Wallace, C. (1992). *Reading.* Oxford, England: Oxford University Press.

Williams, R. (1986). "Top ten" principles for teaching reading. *ELT Journal, 40,* 42–45. doi:10.1093/elt/40.1.42

Woods, D. (1996). *Teacher cognition in language teaching.* Cambridge, England: Cambridge University Press.