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An overview of metacognitive awareness and L2 reading strategies

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Introduction

In the context of second language acquisition (SLA), strategies are generally defined as learning techniques, behaviours, problem solving or study skills which make learning more effective and efficient (Oxford & Crookall, 1989). These strategies are believed to be mental processes and personal preferences (Chamot, 2005), which are generally termed learning strategies (Oxford, 1996). Although a distinction is made between strategies that make learning more effective and strategies that improve comprehension, it is important to acknowledge that language learning strategies can be used to facilitate learning or comprehension (Singhal, 2001). In the area of reading, strategies indicate how readers conceive a task, how they make sense of what they read, and what they do when they do not understand (Block, 1986). Much research has been conducted into language learning strategies (LLSs) in L2 learning and recent research has shifted to language learners’ metacognitive awareness and use of strategies (Zhang, 2001). This awareness or knowledge possessed by learners themselves can help them to transform their outward strategic behaviours which cannot be made available into observable ones; that is to say, learners themselves conceptualise, perceive and know what particular strategies they are, as well as when and where to use them for learning or problem solving to promote self-control over the activity of learning language (Wenden, 1998). In the context of L2 learning, reading has not been given sufficient attention, particularly with regard to L2 readers’ metacognitive knowledge of how they conceptualise their reading processes for meaning-making (Zhang, 2001). If strategies are understood as learners’ conscious and active efforts towards language improvement or comprehension (Bialystok & Ryan, 1985; McLeod & McLaughlin, 1986; Oxford, 1996), then this neglect needs to be addressed in order that L2 readers’ successful and effective reading strategies can be elicited and imparted to less successful readers (Zhang, 2001).

Inquiry into the area of reading comprehension and strategy awareness stems from the areas of either metacognition or executive control within the information processing model.
Metacognition and executive control are both relevant here although they have a different focus, as researchers consider both knowledge and control as metacognition regarding reading strategy selection and execution. In this regard, if metacognition includes the executive control or self-control mechanism, meta-strategic reading and text comprehension, then it is important to discuss the conceptual overlap between metacognition and executive control in terms of regulatory function or executive control of strategic knowledge and use, that is, conscious monitoring of cognitive success and failure of text interpretation and use of strategies to remedy the perceived failures from learners as readers (Garner, 1987a; Schmitt & Sha, 2009).

Most research in this area focuses on learners’ awareness of and use of strategy, which demands attention to learners’ subjective thoughts about strategic reading, and one useful way to gain learners’ subjective thoughts is the think-aloud method. This is not to demerit other methods. Instead, the choice is out of consideration of the purposes of appropriateness and effectiveness since this approach relies on the student as the direct source of information to minimise a substantial amount of guesswork. As Lau (2006) has indicated, instead of inferring strategy use, the think-aloud method provides both product data (the reading text result) and process report (the thinking process involved in strategic reading) that may help researchers tap into the reasoning underlying sophisticated cognitive processes.

Based on the above considerations, this chapter discusses the reading process and reading strategies in L2 learning, taxonomies of LLSs, and the influence of reading proficiency levels on strategy awareness and choice. This chapter also explores the link between executive control and metacognition regarding strategy awareness and selection and considers the advantages and disadvantages of the think-aloud method and the solutions to the problem commonly associated with this approach. In the last section, we present a brief conclusion by reviewing previous studies on metacognition and reading comprehension in L2 in order to come up with further research, recommendations and pedagogical implications in terms of meta-strategic learning and reading comprehension achievement.

**Reading process and reading strategy in L2 learning**

The reading process involves learners as readers acquiring, storing and retrieving information in order to comprehend by means of activating the materials, resources, efforts and strategies available for decoding the printed page (Gagne, 1985). Reading is generally understood as an interactive process involving both top-down and bottom-up approaches. Readers construct the meaning of the text through interaction of a variety of mental processes while working at different levels, such as using the bottom-up process to identify the meaning and grammatical category of words, sentence syntax and text details (Aebersold & Field, 1997), and using the top-down process to draw meaning out of the text based on their linguistic and extralinguistic knowledge as well as the input from the text (Birch, 2002; Wallace, 1992). As noted by Baker and Boonkit (2004), “[T]he reading process gives rise to the issue of reading strategies. EFL/ESL learners usually use a number of language learning strategies during their reading process” (p. 303). Those strategies that language learners use to improve comprehension within the context of learning to read involve six types of sub-strategies (O’Malley & Chamot, 1990; Oxford, 1990) (see a summary in Table 22.1).

**Metacognition and strategy awareness in L2 learning and reading**

Traditionally, as we have seen, reading has been viewed as a cognitive task, and reading research has generally centred on such cognitive processes as ‘language, memory and attention’, and their influence on reading skills. This restricted view of reading as an interplay of decoding and comprehension has been replaced by a concept that also takes readers’ awareness and control of their cognitive activities into account, known as metacognition (Schneider, 1988, p. 53). In other
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Table 22.1 Strategies associated with reading activity

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Definition</th>
<th>Example or techniques in practice</th>
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<tbody>
<tr>
<td>Cognitive strategies</td>
<td>Strategies learners use to transform or manipulate the language.</td>
<td>Note taking, formal practice with the specific aspects of the target language such as sounds and sentence structure, summarising, paraphrasing, predicting, analysing and using context clues.</td>
</tr>
<tr>
<td>Memory strategies</td>
<td>Strategies learners use to remember or retrieve information.</td>
<td>Creating mental images through grouping and associating, semantic mapping, using keywords, employing word associations and placing new words into a context.</td>
</tr>
<tr>
<td>Compensation strategies</td>
<td>Strategies learners use to make up for an inadequate repertoire of grammar and, especially, of vocabulary.</td>
<td>Inferencing, guessing while reading or using reference materials such as dictionaries.</td>
</tr>
<tr>
<td>Metacognitive strategies</td>
<td>Strategies undertaken by learners to plan, arrange and evaluate their own learning.</td>
<td>Directed attention and self-evaluation, organisation, setting goals and objectives, seeking practice opportunities, self-monitoring and correction of errors and so forth.</td>
</tr>
<tr>
<td>Affective strategies</td>
<td>Strategies undertaken by learners to gain control over the affective factors.</td>
<td>Self-encouraging behaviour, to lower anxiety, encourage learning, and taking the reader’s emotional temperature.</td>
</tr>
<tr>
<td>Social strategies</td>
<td>Strategies used by learners to develop the idea of communication between people or among people.</td>
<td>Cooperation with peers, questioning, asking for correction and feedback.</td>
</tr>
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</table>

words, recent research into reading has begun to focus on metacognition, which is “metacognitive awareness of, or perceptions about, strategies and the relationships among awareness or perception of strategies, strategy use, and reading comprehension” (Waxman & Pardon, 1987; Pardon & Waxman, 1988; Barnett, 1988; Carrell, 1989; cited in Carrell et al., 1989, p. 648).

The term “metacognition” was first introduced by John Flavell (1979), who defined it as an individual’s knowledge and control of the cognitive learning process. Metacognitive knowledge refers to the acquired knowledge about this cognitive learning process; metacognitive control refers to the knowledge learners bring to orchestrate the cognitive learning process. According to Flavell (1987), metacognitive knowledge is classified into the following three characteristics: (1) person knowledge is concerned with learners’ perception of themselves; (2) task knowledge demands knowledge about the purpose and task; (3) strategy knowledge is concerned with learners’ knowledge about strategies, what they are, when and how to use them, and why they are useful. There are several reasons why the concept of metacognition is important in L2 reading comprehension and strategy use:

1 In second or foreign language learning research, the concept of metacognition has made it possible and easier for other researchers to analyse L2 learner’s strategies (O’Malley & Chamot, 1990; Wenden, 1998) and their metacognitive knowledge of strategy use (Goh, 1998; Zhang, 1999, as cited in Zhang, 2001).
2 Strategies are defined in this context as conscious and active efforts directed by learners themselves for learning a language or meaning-making (O’Malley & Chamot, 1990; Wenden, 1998). They are not considered a single event, but rather a creative sequence of events actively used by learners (Oxford, 1996).

3 Reading is “not merely a passive process of extracting meaning from the pointed page, but rather an active and interactive process in which the reader uses knowledge of the language to predict and create meaning based on the text” (McLeod & McLaughlin, 1986, p. 114).

4 Monitoring the metacognitive awareness of readers can easily distinguish skilled from unskilled readers (Mokhtari & Reichard, 2002; Mokhtari & Sheorey, 2002).

In essence, Sheorey and Mokhtari (2001) put forward the view that strategic awareness and checking of the comprehension process are very important components of metacognition, which can be regarded as the knowledge of readers’ cognition about the reading process and the self-control mechanisms employed to monitor and increase understanding.

**Metacognition, executive control and strategy use in L2 learning and reading**

Metacognition is closely related to executive control because it is linked to the active monitoring and regulation of cognitive processes in order to produce voluntary action, such as strategy execution and selection to achieve a particular goal, and it presents the executive control system that many cognitive theorists have included in their theories, for instance, the information processing and metacognitive models (Fernandez-Duque, Baird, & Posner, 2000). Strategies used by learners to improve their language comprehension are best understood by references to the information processing model because there is a link between language learning strategies and information processing theory in cognitive science. As O’Malley and Chamot (1990) stated in their work on learning strategies and second language acquisition, “the role of learning strategies in the acquisition of information generally can be understood by reference to the information processing framework for learning” (p. 17). These strategies are regarded as knowledge and stored in the long term memory (LTM) as either declarative knowledge or procedural knowledge. The former is concerned with knowing which strategies to use, while the latter is concerned with how, when and why to use the known strategies. In other words, strategies begin as declarative knowledge and operate as procedural knowledge with repeated practice because these perceived strategies are activated by a production system that involves the ability to execute and control the cognitive information processing necessary to produce strategic actions. This production system consists of a series of steps that include a condition and an action, which involves an executive control mechanism overseeing the utilisation of strategies to achieve a language learning comprehension goal. Strategy applications resemble production systems with a condition (IF) and one more action (THEN) clauses, as in the following example: if the goal is to comprehend a concept in a written text, and I know the concept is not at the beginning, THEN I will scan through the text to locate the concept (O’Malley & Chamot, 1990, p. 52). It is therefore clear that if metacognition is closely related to executive control, as suggested by Fernandez-Duque et al. (2000), these aforesaid processes are similar to the metacognitive executive process because strategy applications involve learners actively monitoring and regulating their cognitive process (metacognitive control) in order to use strategies.

The reason for this is that if metacognition includes executive control involving the active monitoring and regulation of cognitive processes, as suggested by Flavell (1992), readers are engaged in metacognitive control over their strategic process because strategies that enhance
comprehension or meaning-making are regarded as cognitive processes and stored in the LTM as either declarative knowledge or procedural knowledge. These strategic processes will not become conscious actions and steps unless learners have conscious access to them through executive control to achieve a goal (O’Malley & Chamot, 1990).

However, it is also worth pointing out that a link can be made between metacognition and executive control, which is associated with the information processing model. Whereas metacognition emphasises the knowledge that learners successfully or unsuccessfully bring to learning situations, executive control emphasises the control that learners successfully or unsuccessfully bring in orchestrating knowledge (Cavanaugh & Perlmutter, as cited in Garner, 1987a). Research on reading tends to discuss the interplay between knowledge and control (metacognition) in both metacognition and executive control research, despite the different theoretical origins of these two lines of inquiry.¹ The focus is placed on monitoring of cognitive success and failure and the use of strategies to remedy perceived failures when it comes to strategic reading comprehension and meta-cognition. According to Garner (1987b):

1. Both areas emphasise metacognitive knowledge because they stress the conscious accessing of cognitive resources.
2. Both areas stress strategies used by learners deliberately and conditionally.
3. Both areas involve the active monitoring and control of cognitive processes to achieve a goal.

To conclude, it is clear that both components of knowledge and control (metacognition) are equally important even though they are concerned respectively with what readers know about their cognitive resources and their regulation. The regulation of reading includes one’s knowledge of strategies, which in turn entails strategy selection and execution to achieve a “reading comprehension goal” regardless of the boundaries between information processing and metacognition in relation to strategic deployment.

**Metacognitive awareness and use of reading strategies in EFL/ESL contexts**

Schmidt (1993) indicates that research into learning strategies is another way of understanding language learners’ conscious awareness about language learning. Wenden (1998) claims that L2 learners’ metacognitive knowledge of language learning can allow researchers to learn about the important information in relation to learners’ conceptualisation of the language-learning process. Perhaps inspired by this thought, recent research has shifted its focus onto the investigation into L2 learners’ metacognitive awareness/knowledge of learning strategies in relation to reading proficiency levels so as to ascertain or establish the possible links between learners’ knowledge and use of strategies and L2 reading proficiency (Zhang, 2001).

Zhang (1999) investigated 312 Chinese EFL readers’ perceived use of reading strategies through an EFL reading strategies inventory. His findings were consistent with those of Carrell’s (1989) in that the Chinese students’ preferences for global strategies were specifically related to L2 proficiency levels. Low proficiency EFL readers failed to activate the effective and global strategies that researchers and effective readers prefer (Anderson, 1991; Block, 1986; Carrell, 1989). High proficiency learners reported using global strategy types of “guessing meaning through inferences” more frequently. In contrast, the low proficiency learners reported using the local strategy types of “detailing word meanings”. Likewise, Zhang (2001) based his study on Favell’s (1978) framework to investigate EFL learners’ meta-cognitive knowledge of reading strategies. Ten Chinese EFL readers selected from a sample of 312 participants were divided into two groups of five according to their proficiency level. A semi-structured interview guide was employed in Chinese
to examine their metacognitive strategies. The metacognitive knowledge employed by the participants corresponded to the variables of person knowledge (learner’s knowledge of oneself as a reader), task knowledge (learner’s knowledge of the nature of the reading task), and strategy knowledge (learner’s knowledge of strategies regarded as useful for comprehension). This result confirmed what was proposed by Flavell (1979, 1987). The meta-strategic knowledge also differed in the two groups according to the readers’ EFL proficiency levels. The high proficiency learners reported a high awareness of using the global strategies such as anticipating text contexts, monitoring comprehension, skimming for main ideas and guessing the meaning from the context through inferences. By contrast, the low proficiency learners focused on decoding the linguistic data such as translating into L1, using dictionaries and re-reading. However, both groups showed an awareness of the importance of background knowledge in reading comprehension. Zhang concluded that both linguistic knowledge and strategy knowledge are important for low proficiency readers if they are to become meaning-getters and vetters. Their high proficiency counterparts had stronger metacognitive knowledge of the utility of the “global” strategies such as “skimming”, “guessing though inferences” and “anticipating”, and they tended to have a strong awareness of using them.

Yayli (2010) investigated which cognitive and meta-cognitive reading strategies Turkish university students majoring in English language teaching used with narrative and expository texts. Twelve students were divided into two equal groups of high and low proficiency readers (HPRs and LPRs respectively). Qualitative data were obtained through the think-aloud and retrospective protocols in order to elicit data on their strategy types and the frequencies of strategy use. The results revealed that both groups used similar cognitive and meta-cognitive strategies during reading but the HPRs in general used both cognitive and metacognitive strategies more frequently than the LPRs in dealing with both types of texts. The LPRs tended to focus on the surface structure when faced with difficulty in comprehending deep-level semantic relations. Yet, noticeably, the LPRs were as active as the HPRs in both texts while monitoring their performances. The main reason for this might have been the fact that the biggest problem for both groups was unfamiliar vocabulary. Lexical difficulty was also highlighted by Jimenez, Garcia and Pearson (1996) who reported that their participants repeatedly referred to unknown vocabulary as a hindrance to their comprehension in the verbal reports. In essence, this highlights the fact that reading ability in a language is largely reflected in the proficiency of that language as a function, and deep-level processing strategies such as inferencing, prediction and contextualisation will not operate smoothly unless language proficiency develops in order for linguistic cues to be instantiated efficiently to do so, especially for LPRs (Perkins & Brutten, 1992; Oded & Walters, 2001).

Li and Munby (1996) explored two Chinese ESL learners’ metacognitive reading strategies, using think-aloud techniques, in-depth interviews and learning journals. The results showed that they demonstrated a substantial control and awareness of their cognitive activities during reading by using the strategies of “translating L2 into L1”, “using background knowledge”, “predicting”, paying attention to topic sentences and so on. The participants also used strategies that were transferred from L1 reading, which is consistent with the contention of Block (1986) that some aspects of reading ability are ready to be transferred from one language to another. Significantly, the participants revealed the mismatch between strategy use and the task they tried to tackle while using the strategy they learnt in English classes, which gives rise to the issue of the link between strategy use and its range if learners would like to have a productive outcome for better reading comprehension (Carrell, 1991).

Methodological concerns in reading strategy awareness research

The think-aloud protocol is commonly used to access the process of reading (Ericsson & Simon, 1993). Researchers using this method generally provide a reading task and ask the participants...
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Table 22.2 The solutions to the problems associated with the think-aloud procedures

<table>
<thead>
<tr>
<th>Problems</th>
<th>Solutions</th>
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</thead>
<tbody>
<tr>
<td>(1) Respondents may produce unreliable verbal reports.</td>
<td>1. Provide pre-training.</td>
</tr>
<tr>
<td></td>
<td>2. Tap mental event information while it is still available.</td>
</tr>
<tr>
<td></td>
<td>3. Ask the respondents to describe, rather than explain or interpret, what is in their mind.</td>
</tr>
<tr>
<td></td>
<td>4. Ask the respondents to report only information being attended to in their STM.</td>
</tr>
<tr>
<td>(2) Verbal reporting has intrusive effects.</td>
<td>1. Provide training practise.</td>
</tr>
<tr>
<td></td>
<td>2. Create task conditions that resemble as closely as possible those of the verbal report.</td>
</tr>
<tr>
<td></td>
<td>3. Ask the respondents to perform in the way they would normally perform, without a verbal report.</td>
</tr>
<tr>
<td></td>
<td>4. Use simple reporting tasks that do not require excessive concentration and effort.</td>
</tr>
<tr>
<td>(3) Respondents may differ in their ability to verbalise.</td>
<td>1. Give clear instructions before verbal reporting.</td>
</tr>
<tr>
<td></td>
<td>2. Provide information training – warm-up trials of similar tasks.</td>
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<tr>
<td>(4) Weaker students may find it difficult to verbalise in L2.</td>
<td>1. Give the participants a choice of language.</td>
</tr>
<tr>
<td></td>
<td>2. Allow the use of more proficient language for reporting.</td>
</tr>
<tr>
<td>(5) The respondents may be too engrossed in the task and forget to verbalise.</td>
<td>1. Provide regular reminders such as red dots, beeps, etc.</td>
</tr>
<tr>
<td></td>
<td>2. Verbalise after each sentence and episode, at signalled spots, every two minutes, or at the end of the text.</td>
</tr>
<tr>
<td>(6) The respondents may be unable to remember mental events after the performance and may engage in faulty reporting.</td>
<td>1. Prompt without leading.</td>
</tr>
<tr>
<td></td>
<td>2. Minimise the time between the process and report.</td>
</tr>
<tr>
<td></td>
<td>3. Prompt respondents by using concrete examples and contextual cues.</td>
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</tbody>
</table>

to say aloud everything that comes to their mind while performing the task. There are many advantages in using the think-aloud method to collect information about strategy use (Garner, 1987b; Henk, 1993; Pressley & Afflerbach, 1995). Instead of inferring this through their performance in a reading test or their answers in an interview, the think-aloud method directly assesses it in a specific reading task. It provides both product data (the reading test results) and a process report (the think-aloud protocol), which enable the researcher to access the reasoning underlining sophisticated cognitive processes. The delay between process and report is only a few seconds so it avoids the problem of memory failure. Although the think-aloud protocol is a powerful method for exploring people’s “invisible” cognitive processes, its limitations should not be overlooked. Since the measure highly relies on the participant’s verbal report during the think-aloud procedure, the results may be hindered by several factors, including limited verbal ability, inadvertent cueing, unnatural environment, process disruption and inaccessibility of unconscious thinking (Garner, 1987b; Henk, 1993; Singhal, 2001). Regardless of the inherent disadvantages of this method, most researchers do believe that a great deal can be learned about the interplay between the reading comprehension process and participants’ thinking by making them think aloud about definite problems if the procedures of a think-aloud study is carefully planned and conducted to ensure validity (Pressley & Afflerbach, 1995; Singhal, 2001). Zhang, Gu and Hu (2005, p. 283) offer comprehensive solutions to minimise the commonly mentioned problems associated with the think-aloud data collection procedures (see Table 22.2).
Careful planning and training on the think-aloud method is recommended in order to reduce the intrusive effect that is most associated with the inherent limitations of this measure (Cohen, 1998). This is what Ericsson and Simon (1993) recommend as a “warm up” activity conducted before an actual think-aloud task. Since most people seldom report their thinking processes while reading a text, they will probably feel uneasy about doing so. Garner (1987b), Hartman (1995), and Block (1992) recommend that researchers allow participants to practise how to think-aloud prior to using it for formal data collection to minimise this problem. Practice does not only give the participants an opportunity to familiarise themselves with thinking aloud, it also gives the researcher an opportunity to train the participants to stick to verbalising their thoughts and not to interpret them (Someren, Barnard, & Sandberg, 1994). If the participant offers interpretations and starts analysing his or her own problem-solving processes, the researcher has to intervene and explain what they are supposed (not) to do. In addition, while the think-aloud method does directly probe students’ strategy use during a specific reading task (Lau, 2006), few researchers have relied on think-aloud transcripts as their only source of data gathering (Charter, 2003) and multiple methods should be considered for gathering convergent information about the measured cognitive processes (Garner, 1987b; Winne & Perry, 2000). In this regard, special attention needs to be paid to the problem of incomplete, unclear or sub-vocalised think-alouds since that “the think-aloud method requires concurrent verbalization and discourages interpretation on the part of the subject” (Someren et al., 1994, p. 23). Thus, a retrospective protocol or interview should be conducted directly after the think-aloud session, which can be used to complement the think-aloud method to achieve a more comprehensive understanding of people’s cognitive processes during reading (Lau, 2006). The retrospective protocol or interview can be used to capture information on thought processes that think-aloud could not reveal, especially to those that not voiced by the participants and pauses in the think-aloud sessions or fragments of the think-aloud session that sounded incomprehensible, incomplete or odd (Someren et al., 1994).

Singhal (2001) has also enlisted some methodological recommendations, following Ericsson and Simon (1993) and Garner (1987b), about verbal report data collection:

1. Avoid asking about processes that are engaged in automatically and which are therefore inaccessible upon reflection. Complex, difficult, and novel tasks may provide more information than much-practised simple tasks.
2. Reduce the interval between processing and reporting.
3. Use multiple methods to assess knowledge and use of strategies (interview questions, questionnaires, data from verbal-reports and think-alouds).
4. Avoid general questions or asking participants to provide a generalised description of their processing as this may fail to reflect processing accurately.
5. Reiterate that reporting should reflect exactly what comes to their mind.
6. Provide instructions to participants that promote intermediate and final products of processing rather than descriptions of explanations of processing.
7. Use reliable categories to code verbal and think-aloud reports.
8. Recognise individual differences in the ability to provide think-aloud reports and in thinking.

Finally, piloting is also strongly recommended as part of think-aloud data collection procedures since the think-aloud method involves participants to say aloud whatever comes to their mind while performing a given task. Regarding the investigations into strategic reading process and comprehension, piloting allows the researcher to assess the appropriateness of the difficulty level.
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of the reading passages designated to the participants based on the data produced or elicited. That is because their processing system may become overloaded, possibly resulting in a complete or near complete breakdown of comprehension processes (Afflerbach & Johnson, 1984) if they are given extremely difficult texts to read. On the other hand, a simple task may also be unsuitable as “the closer readers’ activities come to automaticity, the more problematic it may be for readers to describe these automatic or near-automatic happenings” (Pressley & Afflerbach, 1995, p. 132). This is why Akyel and Kamisli (1996, as cited in Charter, 2003) recommend that think aloud tasks require “cognitively demanding language use” beyond mere word recognition level so that participants cannot rely on automaticity to perform the task (pp. 15–16).

In brief, Ericsson and Simon (1993) conclude that verbal reports such as those from think-aloud data are a “thoroughly reliable” source of information about thought processes (p. 247). In sum, before designing a reading research plan which involves think-aloud methods, researchers need to decide the type and difficulty level of the reading task, the degree of prompting which is appropriate, the use of other data to support inferences from think-aloud protocols. The reason is that this approach is not exempted from its own inherent limitations (ibid.). Nevertheless, with respect to investigations into reading comprehension and strategy awareness, think-aloud is particularly important as it enables researchers to gain insight into this relatively idiosyncratic phenomenon of strategic reading processes. It relies on the learners as direct sources of data, which minimises a substantial amount of guesswork that is necessary when we are observing behaviours or conducting analysis of the final product presented by learners (Young, 2005).

Pedagogical concerns and classroom implications

Several pedagogical implications arise from the empirical evidence reviewed above. Zhang (2001) suggests that possessing metacognitive strategic knowledge helps learners think about their learning processes although it does not promise that expected achievement goals will be met. Thus, learners could be taught to use think-loud and trained to use metacognitive strategies regardless of their EFL proficiency levels. In this case, learners are allowed to have a chance to reflect on their thinking processes, clarify their views of reading and their use of strategies while processing the text information, which might, in turn, prompt learners to share their thoughts with their peers so as not only to turn the classroom into a meta-strategic learning environment out of their metacognitive growth but also to impart the meta-strategic knowledge to less successful readers and allow them to select the strategies which are foreign but of value to them. Schmitt and Sha (2009) indicated that meta-strategic knowledge and meta-cognitive control develop over time and the control possessed by students over their own learning can prepare them to discover those strategies that are most significant and personally relevant to them during their strategic reading comprehension process even though knowledge develops at a faster rate in comparison (William & Burden, 1997; Lehtonen, 2000).

Next, L2 learners’ reading ability and proficiency levels seems closely related to their metacognitive awareness and use of strategy for meaning construction. Thus a practical concern for many teacher-researchers is how to balance their teaching of both proficiency and strategies. Teachers can incorporate some elements of strategy and grammar instruction into their L2 reading instruction, especially for the low proficiency readers. Carrel (1991) proposes that weak readers can improve their reading ability leading to potential improvements in their overall English proficiency in the long run after they have received the strategy instruction for problem-solving. Moreover, the inclusion of both components of grammar and strategy instruction is important. That is, before learners are likely to employ deep-level strategies such as inferencing,
prediction and contextualisation, they have to reach the linguistic threshold in order to activate
the linguistic cues if they hope to do so (Gu, Zhang, Rao, & Hu, 2007).

As noted earlier, unfamiliar vocabulary and lack of background knowledge are obstacles for
learners regardless of proficiency level. Several researchers confirm that vocabulary, background
knowledge, and reading comprehension are closely related (Joshi & Aaron, 2000; Hammadou,
2000). Therefore, increasing student’s lexical knowledge is important. For example, the teacher
can provide or encourage learners to do extensive reading beyond classroom requirements.
When students engage in this, they will be able to acquire new vocabulary and background
knowledge in different domains. This will in turn help them with their reading comprehen-
sion (Nassaji, 2003; Qian, 2002). Teachers should also spend time in class doing activities that
develop vocabulary development from explicit vocabulary instruction or have students do more
extensive reading. In addition, the instruction in learning strategies for improving comprehen-
sion, such as reading around the unknown words and making guesses are still valuable skills.
After all, as we have seen, strategies are effective techniques that all language learners learn
to use, especially when they encounter difficulties in language comprehension (O’Malley &
Chamot, 1990), but vocabulary knowledge is something that language learners acquire through
the personal act of reading and studying (Chou, 2011).

Further, as noted above, there exists a mismatch between strategy use and its range (Carrell,
1991). It might be a good idea for EFL/ESL teachers to include training and practice of strategy with
specific tasks for learners in order to develop learners’ skills in using strategies with the given task in
an appropriate and effective way.

Finally, as noted by Abdullah, Ismail and Ahmadi (2013), metacognitive reading strategy aware-
ness has long been a neglected or ignored aspect in English language teaching, research, learning
and assessment. This lack of good metacognitive reading strategy or skill exacerbates reading com-
prehension, which is regarded as playing the central role in educational success. One solution to
the problem of poor reading comprehension is the learning of metacognitive reading strategy
skills. Metacognitive reading strategy ability needs to be incorporated into language learning and
teaching. On the basis of strategy-instruction literature (Aebersold & Field, 1997; Garner, 1987b;
Pressley & Afflerbach, 1995, cited in Singhal, 2001, p. 19), the following guidelines for effective
strategy instruction in classrooms are offered in order to enhance L2 learners as readers’ efficacy.

1 Teachers must care about the processes involved in reading and studying, and must be
willing to devote instructional time to them through direct strategy-instruction and
modelling.

2 Teachers must do task analyses of strategies to be taught. In other words, teachers must
think about how a particular strategy is best applied and in what contexts. Teachers can
observe students as they read in order to determine strengths and weaknesses in terms
of strategy use, which in turn will help in providing effective and appropriate strategy
instruction.

3 Teachers must present strategies as applicable to texts and tasks in more than one content
domain so that students can apply the necessary strategies in reading situations and contexts.

4 Teachers must teach strategies over an extended period of time, not just in a single lesson
or unit, thereby allowing strategic instruction to permeate the curriculum.

5 Teachers must provide students with opportunities to practise strategies they have been
taught. And:

6 Teachers must be prepared to let students teach each other about reading and the studying
process.
Conclusions, recommendations and future research

The study of metacognition and reading comprehension in L2 learning will continue to develop so long as second or foreign language researchers, applied linguists, teacher-researchers and practising teachers seek to obtain a better understanding of individual differences of different reading ability in metacognitive knowledge and strategy use. There are several areas of study that would benefit from future research.

First, metacognition and reading comprehension in relation to strategic reading, as we have seen above, places a great deal of emphasis on an active learner who directs cognitive resources to complete the reading task via strategy execution. However, although the reviewed empirical studies above reveal useful information on learners’ metacognitive awareness and use of reading strategies in learning to read an L2, the distinction between strategy knowledge and strategy use has been neglected (Zhang & Goh, 2006). The meta-strategic knowledge and use elicited from the studies are independent of a given reading task so that further research could look into the link between learner knowledge about strategies and use (perceived or actual) of these strategies since that reader’s strategy knowledge may differ from their actual use of strategies in a reading situation (Kletzien, 1997, p. 70).

Another area of interest is a potential implication for theory and research regarding the use of different methods for data collection, based on the studies reviewed above. As a case in point, data about metacognitive awareness and use of strategy in learning to read are learners’ subjective endeavours to comprehension. This necessitates gaining insight into this process by understanding how learners see themselves and their ability as readers, how they understand what are the sources of the difficulty they face in a text, and what strategies they are aware of and use to meet such aims, so data should be collected from several sources, not only one. Administering a standardised self-reporting questionnaire is a traditional and convenient way. Nevertheless, such a questionnaire offers only a limited view of learning strategy type preferences, which is why open-end questionnaires, think-aloud protocols, learning journals and unstructured interviews can be used to collect additional important data that might be overlooked.

When it comes to L2 reading, related research on this field has addressed the issue of whether reading comprehension difficulties relate to learners’ unfamiliarity with the target language (lack of language ability) such as incomplete decoding skills rather than lack of strategic awareness (Malcolm, 2009). However, Zhang (2001) assumes that his participants’ problems in reading were both a language and a reading problem. Therefore a further area of research into metacognition and reading comprehension is to determine whether EFL reading is a language problem or a reading problem.

As in Yayli’s (2010) study, unknown vocabulary was the chief obstacle to the text comprehension for both groups of HPRs and LPRs. Hancock (1998) believes that in reading, comprehension involves understanding the vocabulary, seeing relationships among words, concepts and ideas. Furthermore, as in Zhang’s (2001) study, the importance of background knowledge was perceived by both groups of high and low scorers. Knowing how vocabulary and background knowledge helps reading comprehension would be an important area to explore, as indicated by Chou (2011). This line of inquiry would give teachers new approaches to teaching.

In essence, an individual’s metacognitive knowledge, as we have seen, is his or her personal knowledge or beliefs about language learning (Wenden, 1991, 1998). To date, metacognition has been well recognised as an important factor that has to be considered seriously when planning and executing learner development programmes that are interconnected with language learning/learner strategy (LLS) research (Cohen & Macaro, 2007; Zhang, 2008). This review intends to provide readers with the relevant information needed if they are interested in L2 learners’ reading strategies and metacognition. As suggested above, several questions related to...
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this field still remain to be determined. More studies of reading strategies, metacognition, and reading proficiency levels in L2 learning (especially in EFL instructions) are needed and this field should remain a major focus of L2 reading, especially for reading in English as foreign language, because literature on students’ metacognition in this area is still cursory (Zhang, 2010) even though the past three decades have seen a growing body of research on language learner metacognitive knowledge and learner strategies (Zhang & Gu 2006).

**Note**

1 Metacognition grew out of orthodox Piagetian developmental theory (knowledge emphases); executive control has its roots in the information processing model, grounded in theories of human mind – an emphasis upon input and output from the human cognitive system (control of knowledge emphases).

**References**


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