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## CRITICAL THINKING - AUTONOMOUS LEARNING AND METACOGNITIVE STRATEGIES ESSENTIALS IN ENGLISH FOR SPECIFIC PURPOSES (ESP)

### Abstract

Many students have trouble making the transition to the more independent learning required at university compared with their previous study. University study requires students to take responsibility for their own learning, to be more self-directed, to make decisions about what they will focus on and how much time they will spend on learning both inside and outside the classroom. This transition may be especially difficult for international students who may be used to more support and direction and even 'parent-like' relationships with their teachers at university. It will be useful for them to know precisely how they are responsible for their learning in their new setting. This will require them to understand that they need to play a more active role in their own learning and will require greater self-motivation and organization and greater self-awareness (metacognition) of their learning needs and behaviors. Therefore, it is important that this pivotal concept of independent learning is explained to students so that they know what is required of them within their new context and discipline.

Key words: critical thinking, independent learning, university, active, students

### Introduction

Metacognition starts with a conscious awareness of what it is you know and what you don't know. It is a critical step in beginning to decide what it is you need to learn. Conscious awareness is the first step; you cannot effectively determine what you need to know until you understand what you do know and don't know. Once you have an awareness of what you need to learn, the second part of metacognition would be to begin to identify strategies that would help you learn more effectively. Strategies are presented under the topics of motivation, acquisition, retention, and performance. Identify and try some strategies to see which ones work for you. The third and last part of metacognition focuses on how effective the strategies you try are working. After assessing the effectiveness of a strategy, you then need to make

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conscious choices as to the next steps: continue to use the new strategy, modify the strategy, try a different strategy.

Metacognition is the key to choosing which study strategies to try and which study strategies to use. Various study strategies are listed here under the four topics of motivation, acquisition, retention, and performance. Motivation incorporates attitudes, purpose, and time management as you approach learning situations. Though not truly sequential, motivation can enhance or inhibit learning aspects of each of the categories below. Brown (2000) makes the point that both integrative and instrumental motivations are not necessarily mutually exclusive. Learners rarely select one form of motivation when learning a second language, but rather a combination of both orientations. He cites the example of international students residing in the United States, learning English for academic purposes while at the same time wishing to become integrated with the people and culture of the country.

Acquisition incorporates understanding new information being learned. Strategies for success include study reading, note-taking, and connecting new information to previous knowledge (constructivism). Negative motivators can inhibit acquisition of new information. Negative aspects of acquisition likewise can inhibit retention and performance of new information. Linguistics and foreign language methodologies are tightly connected and based on the nurturist's facet of the language acquisition. Therefore it follows that what we acquire must be somehow retained.

Retention is the ability to access new knowledge learned. Retention incorporates time management, note-taking, study-reading, memory, and vocabulary strategies. Practice, review, understanding, and time in contact with new information enhance retention of new information. Lack of retention will inhibit performance. Performance is the aspect of understanding new information and being able to apply new information appropriately. Performance incorporates retention, test-taking, and anxiety-reduction strategies.

### Metacognitive strategies and writing in ESP

Kaplan, in his essay on cultural thought patterns and rhetoric, brought to light that L2 students need instruction in writing beyond the traditional focus on grammar and syntax (1966). He stressed that "the teaching of reading and composition to foreign students does differ from the teaching of reading and composition to American students, and cultural differences in the nature of rhetoric supply the key to the difference in teaching approach" (p. 1). Kaplan pointed out that it is a fallacy to assume that "because a student can write an adequate essay in his native language, he can necessarily write an adequate one in his second language" (p. 3) as rhetorical structures differ among cultures.

Kaplan suggests several activities meant to raise the students' awareness of the rhetorical patterns of English compositions. Studies have shown that texts produced by L2 authors "vary from those produced by native speakers across almost every imaginable dimension (e.g. lexical variety, syntactical choices, cohesion and

coherence, global rhetorical structure, etc)” (Silva, 1993, as cited in Ferris, 2001, p. 299); in short, L2 writers simply need “more of everything” (Raimes, 1985, as cited in Ferris, 2001, p. 299), (e.g. instruction in rhetorical patterns, grammar, cohesive devices, etc). Giving L2 writers “more of everything” poses several problems for the instructor given the task of systematically exposing L2 students to the facets of writing an effective text in English, most notably that there is not enough time in a typical course, IEP or otherwise, to cover every aspect of writing.

Furthermore, doubts have been cast on whether such a “one-size-fits-all” approach to writing instruction actually provides individual learners with the information needed to complete writing tasks successfully (Devine et al., 1993). Recent research points out that “writing is a process guided by strategic knowledge—the goals writers set, the strategies they invoke, and their awareness of these processes” (Chien, 2004).

## Strategies

Learning strategies can best be defined as “specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations” (Oxford, 1990, as cited in Baker & Boonkit, 2004, p. 300). A further defining quality of a learning strategy is that it has to be employed deliberately by the learner in order to achieve a goal (Wellman, 1988, as cited in Carrell et al., 1998, p. 97). In regards to writing, Baker and Boonkit (2004) set forth that strategies involve the “particular techniques or methods by the writer to improve the success of their writing” (p. 301) and list six sets of learning strategies:

- memory strategies
- cognitive strategies
- compensation strategies
- metacognitive strategies
- affective strategies
- social strategies.

It is important, however, to note that a high level of declarative (what it is) and procedural (how to use it) knowledge of learning strategies does not necessarily correspond with a high rate of task success; simply knowing a strategy and how to put it into practice does not mean that a learner will enjoy success with that strategy. A study by Anderson (1991, as cited in Carrell, 1998) highlights that “the use of certain reading strategies does not always lead to successful reading comprehension, while the use of other strategies does not always result in unsuccessful reading comprehension.” What was indicative of the success of the reader, however, was when the reader had an array of strategies at his disposal. Even then, comprehension isn’t simply “a matter of knowing what strategy to use, but the reader must also know how to use it successfully and orchestrate its use with other strategies” (p. 99).

## Cognition versus Metacognition

While it is a fine line between cognition and metacognition, particularly in terms of strategy training, the distinguishing factor between the two is how the strategy is used (Flavell, 1978; Chien, 2006; Schraw, 1998). In short, cognitive strategies are strategies which are used to solve problems, whereas metacognitive strategies are employed in order to monitor, evaluate, control and understand these strategies (Chien, 2006). Metacognition is defined by Weinert (1987) as “second-order cognitions: thoughts about thoughts, knowledge about knowledge, or reflections about actions (1987, as cited in Hartman, 1998, p. 1) and is differentiated from cognition “in that cognitive skills are necessary to perform a task, while metacognition is necessary to understand how the task was performed (Garner, 1987, as cited in Schraw, 1998, p. 113). Or, in short, “metacognition is the regulation of cognition. That is, learners need to link these metacognitive awareness with their strategic knowledge about what they know (declarative), how they will use the knowledge (procedural), and when and why they can use the knowledge (conditional)” (Tapinta, 2006, p. 14).

The benefits of metacognitive knowledge are not disputable. Rubin (1975) identified self-monitoring as a strategy employed by good language learners. Flavell himself postulated that “metacognitive knowledge can have a number of concrete and important effects on the cognitive enterprises of children and adults. It can lead you to select, evaluate, revise, and abandon cognitive tasks, goals and strategies in light of their relationships with one another and with your own abilities and interests with respect to that enterprise” (1979, p. 908), and others (Carrell et al. (1998); O’Malley et. al. (1985); Schraw (1998) have pointed that metacognitive knowledge is essential not only for being aware when comprehension is breaking down, but also for a greater understanding of the demands of the task and one’s own personal limitations; or, as Carrell explains, “if a reader is aware of what is needed to perform efficiently, then it is possible to take steps to meet the demands of a reading situation more effectively” (p. 100). Hartman (2001) claims that metacognition can “make or break student academic success (as cited in Wong & Storey, 2006, p. 283).

Other benefits of metacognitive knowledge include compensation “for low ability or lack of relevant prior knowledge...and contributes to successful problem solving over and beyond the contribution of IQ and task-relevant strategies” (Schraw, 1998, p.117), as well as strengthening learners’ procedural knowledge of strategy application (Tapinta, 2006). While great efforts have been made to illustrate the disparities between cognitive and metacognitive strategies, it’s important to note that these strategies are not in opposition to each other; they are, in fact, related (Schraw, 1998, 113).

To sum up, the difference between a cognitive and metacognitive strategy lies in the focus of the immediate activity: a cognitive approach is focused on the completion of the task at hand and prepares learners to tackle similar problems in a similar manner in the future. A metacognitive strategy is focused on how the task was completed, how effective this strategy was, what might the learner do differently the next time when confronted with a similar task.

## Application of Metacognitive Strategies to Writing Instruction

All writers enter the writing process with some metacognitive knowledge in place. Studies by Devine et al. (1993) have shown that “all writers (L1 and L2) could be characterized as having a metacognitive knowledge base which contributed to their cognitive model of the writing process (p. 213) and which subsequently had implications on the performance of the writers on the written tasks. Several studies (Kasper, 1997; Chien, 2004) have found correlations between the extent to which students employed metacognitive strategies and their writing performance.

How, then, do we go about increasing metacognitive awareness and knowledge among our students? Both Wenden (1998) and Schraw (1998) recommend that students need strategies, both cognitive and metacognitive, modeled for them by a teacher as well as knowledge related to the types of strategies available, the “conditions under which these strategy [sic] are most useful, and a brief rationale for why one might wish to use them as one method which can be used to promote metacognitive knowledge” (Schraw, p. 119).

Another method is to give the students extended practice and reflection, which together “play important roles in the construction of metacognitive knowledge and regulatory skills” (p. 118). Although research into the use of metacognitive strategy training in L2 writing is limited, what research has been conducted seems to support Wenden’s and Schraw’s recommendations.

A number of studies looked at the use of learning diaries and/or journals as a means of measuring metacognitive knowledge. A study by Chien (2006), though limited in sample size, found a strong correlation between metacognitive reflection and achievement among Chinese ESL students. In the study, students with high task achievement attended more in review, editing and evaluation (i.e. in metacognitive processes) than students with low achievement. Wong & Storey (2006) found that the use of reflective journals before and after actual writing is “useful for arousing and increasing students’ awareness of effective writing skills and is significantly related to writing performance” (p. 297).

Further studies have indicated the value of reflective tasks in sensitizing students to the demands of writing for specific discourse communities (Hirvela, 1997). A wealth of studies, reviewed by Winograd and Hare (1998, as cited in Carrell et. al), reported significant gains in the specific use of the cognitive strategy taught (Adams, Carnine & Gersten, 1982; Alexander & White, 1984; Baumann, 1984; Garner, Hare, Alexander, Haynes & Winograd, 1984; Hare & Borchardt, 1984; Patching, Kameenui, Carnine, Gersten & Colvin, 1983). Overall, these studies support Mayer’s (1998) sweeping statement: “Students who receive writing strategy training show improvements in the quality of what they write” (p. 55).

## Approaches in Writing Instruction: Product, Process, Genre

Over the past 30 years, product and process approaches have been the chief methods of writing instruction in EFL classrooms (Badger & White, 2000). The product-oriented writing approach is typified by establishing a context, modeling, noticing, and analysis of the features (moves, functions, etc) of these models, information transfer, followed by comparisons between the texts. From this point the students can be given controlled practice activities, which would ultimately lead to the learners producing drafts independently. (Reid, 1988, as cited in Flowerdew and Peacock, 2001). Badger and White (2000) provide a more concrete example of a typical sequence of the product-approach a typical writing class might involve the learners familiarizing themselves with a set of description of houses, possibly written especially for teaching purposes, by identifying, say, the prepositions and the names of rooms used in a description of a house...they might produce some simple sentences about houses from a substitution table. The learners might then produce a piece of guided writing based on a picture of a house and, finally... a description of their own home. (p. 153).

A process-oriented writing cycle, on the other hand, typically contains the following steps: taking preliminary decisions, composing a rough draft, revising the rough draft, preparing a second draft, further revisions and reworking of drafts, further evaluation and writing the final draft. (Flowerdew and Peacock, 2001, pg. 188). Or, as Badger and White again express more concretely A typical prewriting activity in the process approach would be for learners to brainstorm on the topic of houses...they would select and structure...to provide a plan of a description of a house. This would guide the first draft of a description of a particular house. After discussion, learners might revise the first draft working individually or in groups. Finally, the learners would edit or proof-read the text. (pg. 154). For a time, the process approach gained much popularity in ESL writing classroom, prompting both criticism of its shortcomings, most commonly that the process approach fails to account for “the many forces outsider of an individual writer’s control which define, shape, and ultimately judge a piece of writing (Horowitz, 1986, p.446) as well as a general recognition of the virtues of a product approach: most notably its explicit instruction in structure and the opportunities it provides the students to improve the basic, mechanical skills needed to write effectively (Rodriguez, 1985).

More recently, the genre approach, focusing much of its attention on the situation and purpose of writing, has gained popularity in writing instruction (Badger and White, 2000). Typically, a genre-approach will begin with an analysis of authentic examples of the target text. This analysis focuses on the macrostructures of the text (i.e. identifying both the obligatory and optional elements and how these are ordered), identifying the cohesive devices employed in the text as well as an analysis of how the register is encoded in the writer’s choice of grammar and vocabulary (Thornbury, 2005). While a genre approach does share many features with a product-cycle, the fundamental difference is in the genre approach’s explicit focus on the purpose of the writing, which includes both the author and the author’s purpose for writing the text, as well as the reader and why he/she is reading the text.



As one can see, a genre-approach differs from the product approach largely through its use of authentic materials, most notably the use of a concordancer to analyze both the vocabulary and grammatical structures in the text. This fact alone, in my point of view, is undoubtedly an improvement over the product model: if we're going to ask students to imitate texts, then the use of authentic texts is of the utmost importance. Critics of the genre-approach, however, typically focus on a different feature, or, in this case, the lack thereof: while a genre-approach does provide the structure and scaffolding for the learner to ultimately achieve the task at hand, it does not account for the skills needed in the process of editing, reformulating, and improving written work (Badger White, 2000, p. 157). In other words, it is found lacking in that which the process-approach emphasizes: the actual processes involved in the composition of a text.

Metacognitive strategies with intermediate-level students in ESP courses and the efficiency of these strategies in ESP classes can be summarized in students' comments:

1. Now, I think my brain is more active in reading as if, I read with my brain rather than my eyes.
2. After previewing I can decide how I will deal with any particular text, and which other strategies I am going to follow to have better comprehension.
3. The strategies you applied made me conscious and active I used to read a text word for word until then, being afraid to misunderstand the contents. Now I'm trying to skip as many words as possible even when I am going to read about something not familiar, and I am going to deal with the text I have already had quite a few knowledge.
4. There are many positive aspects of using predictions. Firstly, immediately thinking about the topics help us to understand contents of articles. Secondly, we can improve our reading speed by predicting the following contents. Thirdly, we can associate our knowledge we have concerning the topics and it can help to make our learning much easier.
5. Finding key words in any text was an interesting technique. I think relying on Key words is more helpful than relying on the structure in reading a text.
6. I think it is easier to ask question when I read something I have prior knowledge with because I have something to base in to ask question.
7. Now, I have a critical reading and I can use my background knowledge.

## Conclusion

Having analyzed some data and having reviewed some references, the following conclusions could be drawn:

1. The practice of metacognitive strategies teaching leading to student self-assessment carries the possibility of creating a dynamic, interactive environment on several levels: between student and teacher, learner and learning, learning and knowledge, and knowledge and action.
2. Self-directed ESP studies foster reflective thinking when students take responsibility for their actions.

3. Reflective thinking should be fostered and encouraged by the teacher.
4. Learning diaries, journals, portfolios are the best techniques to help students to foster their reflection and metacognitive awareness.
5. There should not be too much of teachers intervention in the learning process as well designed and structured studies lead students to less responsibility and discourage reflection.

To sum up, there are several methods which can be used to raise students' metacognitive awareness in the classroom. Firstly, teachers should explicitly model both their cognitive and metacognitive thought processes for their students. Secondly, students should be given explicit instruction into the demands of the writing task in question. This in turn will aid the students in their attempts to self-monitor. Finally, students should be given extensive opportunities both to practice these skills and reflect back upon them.

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## KRITIČKO MIŠLJENJE – NEZAVISNO UČENJE I METAKOGNITIVNE STRATEGIJE

### Apstrakt

Mnogi studenti imaju probleme sa nezavisnim učenjem, odnosno sa novim strategijama učenja na univerzitetskom nivou jer u ovakvom periodu tranzicije odnosno prelaza iz srednje škole na univerzitet, studenti moraju sami da donose odluke kako i koliko će učiti, a to je naročito teško stranim studentima, koji zavisno od kulture kojoj pripadaju imaju drugačije navike i stilove učenja, pa stoga očekuju veliku podršku prilikom učenja i zaštitnički odnos svojih nastavnika. Ali za njih će biti mnogo značajnije ako odmah na početku studija dobro znaju šta se od njih očekuje, i kolika je njihova odgovornost prema ispunjenju postavljenih zadataka. Studenti moraju shvatiti važnost svojih novih strategija učenja koje će zahtevati povećani stepen samomotivacije, samoregulacije odnosno metakognicije koja će determinisati njihovo učenje i ponašanje. Stoga je od ogromne važnosti koncept nezavisnog učenja jasno definisati od samog početka i sa tim upoznati studente na početku njihovog studiranja.

*Ključne reči:* Kritičko mišljenje, nezavisno učenje, univerzitet, aktivni, studenti