The place of cognition and metacognition in the Algerian EFL Middle School Course in receptive, productive skills and grammar

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Introduction

The educational reform which has been launched in the 2000's brought a big shift in the Algerian educational learning process, a shift which has brought a focus on cognition, metacognition, critical thinking and knowledge construction. Among the competencies that have been given due concern, the intellectual competency is regarded as central in the recent educational reform movement.

In the present study, we shall attempt to give prominence to the way the process of inquiry learning is tackled in traditional receptive and productive skills (listening, speaking, reading and writing), and grammar lessons, in an EFL Algerian Middle School manual. We shall go over Spotlight on English book three, a textbook designed to the third college school classes, to illustrate how the discovery/ inquiry- based process is implemented. Our choice of MS3 textbook is determined by the belief that this manual is used in periods when learners are less affected by the need to adapt to a new subject (English) or exam stress (BEF exam).

Our hypothesis is that the Algerian designers will find it hard to make a sharp sweep from model teaching to the use of metacognition and cognition in language learning. This hypothesis has its basic premise in the fact that, during the period that preceded the reform, the Algerian syllabi and textbooks have always been rooted in a subject-centered orientation with a predetermined content and linear and cumulative procedure, on the one hand, and that the Algerian teacher

education has always espoused the teacher-training model at the expense of teacher development, on the other hand.

The key concern of the this article is to clarify some major considerations tied to the present study, among which: the process of making hypotheses (generating and testing hypotheses) along with the way through which such a learning process develops students' cognition (understanding of grammar use) and students' construction of learning strategies through metacognition (learning to learn). We shall base our inquiry on a practical analysis of the textbooks learning process.

Our study will be made with reference to textbooks' activities related to grammar and the four traditional skills. We shall focus first on the textbook content which serves as a stimulus for learners to become thinkers who grasp and apply concepts. Then we shall try to examine the different instructions, techniques and processes that the learners are asked to follow to construct their autonomy.

Review of literature

It is generally admitted that active learning relies on trial and error. Practitioners argue that putting a learner in recurrent processes of generating hypotheses and relying on his background knowledge (experience) are the best ways for activating his/her mind. Brooks and Brooks (2000), for example, state that in effective teaching adequate materials, such as problem-solving activities are provided in the classroom to lead learners to reflection.

This learning process is well explicated by Charles Sanders Peirce, the father of pragmatism, who states: "If a man burns and sets himself to comparing his ideas with experiential results in order that he may correct those ideas, every scientific man will recognize him as a brother, no matter how his knowledge may be". Within this perspective, the author believes that the process of **induction**, should be referred to as a scientific method with its three phases. It starts with abduction which is a conjecture or hypothesis about what actually is going on. Then, by means of deductive inference, conclusions are drawn from the hypothesis. Finally, hypothesis-testing is performed by seeking experimentally to detect the result. The entire procedure of hypothesis testing is also called **retroduction**. In the same train of thought, J. Bruner (1973) defines learning as an active process in which learners select and transform information, construct hypotheses and make decisions relying on current/past knowledge.

To construct hypotheses, John Dewey highlights the role of the individual's experience. According to him, the connection between thinking and experience is built on the basis of interaction. He explicates that: "to 'learn from experience' is to make a backward and forward connection between what we do to things and what we enjoy or suffer from things in consequence. Under such conditions, doing becomes a trying; an experiment with the world to find out what it is like; the undergoing becomes instruction-discovery of the connection of things" ( ).

The process of "reflective inquiry" proposed by Dewey gave birth to inquiry learning explained by Sneldecker, (1974: 425) in the following words: "The discovery learning mode requires that the student participates in making many of the decisions about what, how, and when something is to be learned and even plays a major role in making such decisions." The "reflective inquiry" put forward by Dewey, which emphasizes the process rather than the product, gave birth to inquiry learning which involves students in the process of formulating a problem or question, researching the issue, formulating and testing hypotheses, and generating their solutions to other problems. Inquiry learning is not dissimilar to problem solving inasmuch as both processes start with the identification of a problem before dealing with research work to gather appropriate data. Next learners formulate hypotheses and test them. Finally, the tentative solution is to put into application convergent and divergent real life problems and questions.

A major characteristic of inquiry learning is this connection between experience, thought and problem-solving. Dewey touches on this very issue when he asserts that thinking occurs when things are uncertain or doubtful or problematic. Because the situation in which thinking occurs is a doubtful one, thinking becomes a process of inquiry, of looking into things, of investigating. Acquiring is therefore secondary, and instrumental to the act of inquiry.

Being rooted in discovery and inquiry-based learning, the construction of the intellectual competency represents, thus, the cornerstone of education. In an effort to explain the hardcore of inquiry learning in education, Jacques Boisvert, (1999:10) who refers to Reboul (1984), writes: "tout enseignement véritable se doit

d'inclure la formation de la pensée critique, qui vise à favoriser le développement de l'autonomie de la pensée chez les élèves. ».

Fogarty and Mc Tighe (1993, cited in Jacques Boisvert, (1999:32) clear the ground of the critical thinking teaching process. They state that it followed a three phase evolution. The first phase started in the early eighties and focuses on thinking abilities related to classifications and comparisons. The second phase, which was set in the middle of the eighties, is in direct connection with problem solving, decision making, and creativity. The third phase, which started in the beginning of the nineties, represents the last phase of the learning process. This phase is concerned with the transfer of skills and thinking process from school to real life environments via metacognition (learning to learn) and reflection.

In this respect, it is worth mentioning Black and Mc Clintock's ICON Model which comprises seven elements: observation, interpretation construction, cognitive apprenticeship, collaboration, multiple interpretations, and multiple manifestations.

Our belief is that the four first steps of the ICON Model materializes the main steps that lead to the construction of metacognition to favor the development of learners 'autonomy. It is interesting at this point to describe how the ICON model is processed. At the outset, learners start encountering authentic situations in which authentic artifacts are observed for a given purpose. Then they begin to construct their arguments and propose interpretations. To refine their arguments and validate their interpretations, learners have access to their experience and a diversity of contextual materials. They are guided and tutored to master the processes of observation, interpretation, and contextualization, and they need to collaborate in observation, interpretation, and contextualization phases. By being exposed to multiple interpretations, collaboration, and cognitive apprenticeship, learners gain flexibility. Multiple manifestations of the same interpretation allow learners to gain transferability to other contexts and situations.

The model described above highlights the idea that effective learning necessitates putting learners in a recurrent process of generating hypotheses. Through this model, learners are immersed in a process of continuous quest for answers to the hypotheses they make when encountering problem-solving situations. The process of interpretation

implies a need to know the premise. Interpreting or inquiring is not much seeking the right answer but rather seeking appropriate resolutions to questions and issues. A course based on interpretations or inquiry learning implies emphasis on the development of inquiry skills for the sake of enabling learners to construct their autonomy to transfer abilities, attitudes and knowledge to everyday life. Lessard-Clouston (1997:3) states: "teachers who train students to use language learning strategies can help them become better learners".

To explicate more the process of hypotheses making, we resolve to refer to O'Malley and Chamot's (1990) paradigm for classification of language learning strategies: (1) Elaboration, (2) cooperation, (3) questioning for information, (4) self-monitoring, and (5) self-evaluation.

(1) Elaboration is classified as a cognitive strategy. It is defined by O'Malley and Chamot (1990:138), as "relating new information to prior knowledge, relating different parts of new information to each other; making meaningful personal associations to information presented. This strategy is used in the ICON second stage related to interpretation construction which appeals to the individual's experience. O'Malley and Chamot (1990:45) add that elaboration "may be a general category for other strategies such as imagery, summarizations, transfer and deduction".

O'Malley and Chamot (1990:139) define (2) cooperation as a social strategy which sets constructivist study support environment favorable for learners to work "together with one or more peers to solve a problem, pool information on oral or written performance, check a learning task, model language activity or get a feedback". This strategy is used in the ICON fifth stage related to collaboration.

(3) Questioning for information is a "socio-affective strategy" O'Malley and Chamot (1990:120). Learners use it for eliciting from a teacher or peer additional explanations, rephrasing, examples or verifications. This strategy is used in the ICON fourth and sixth stages related respectively to cognitive apprenticeship and multiple interpretations.

(4) Self-monitoring is a metacognitive strategy related to the checking of one's understanding during performance of the activity. (Ibid, 1990:119). This strategy is used when learners access prior experience and a diversity of contextual materials to facilitate

interpretation and argumentation. This strategy is used in the ICON third stage related to contextualization.

(5) Self-evaluations relate to a metacognitive strategy which serves for "checking the outcomes of one's own language learning against a standard after it has been completed" (ibid). This strategy is used in the ICON stage related to collaboration.

Results

The Third Year Middle School Education (MS3) syllabus expresses distinctly the underlying philosophy of the methodology adopted by the Algerian Ministry of Education which relies on cognition and leaning to learn.

The detailed study of the linguistic content reveals the place provided to critical thinking in Spotlight on English Book Three. The first distinguishing mark of Pierce's **retroduction** process and the ICON model is provided at the outset of the file which opens with the first instruction given to students: **Observe**, which prepares learners to start a thinking process which prepares the use of the elaboration strategy mentioned earlier, a strategy that helps students to link the new knowledge to the old (experience).

Then, learners begin to build interpretations and construct arguments. They use the Elaboration cognitive strategy to relate the new information presented in the Observation Phase to their prior knowledge by first connecting different parts of the new information to each other, and then by making meaningful personal associations to the information presented (O'Malley and Chamot (1990). The instructions used in the textbook are very explicit. Here is a sample of instructions used to help learners use cognition and metacognition strategies.

a- listening skill: *Listen and check your answer; Look at the picture, the table, the advertisement, the photos…*

b- speaking skill: *"Look at the picture, the table, the advertisement, the photos… and answer the questions; prepare a dialogue; fill in the speech bubbles Look at the TV announcements above. Which programme do you like? Why?*

c- reading skill: *Read the tips below and do the exercises that follow; Look at the picture, the table, the advertisement, the photos… fill in the table, , the blanks; correct the statement and do the task; read the letter and answer the questions Before you listen, look at these film announcements, then talk about today's TV programme; read and discuss*

d- writing skill: *Read the text and answer the questions, then read it again and say whether statements A-D below are true or false, correct the false ones; find in the text whose definitions are as follows.*

e- Grammar: *Mark the intonation with an arrow and justify your answer; Listen and cross out the word which does not have the vowel sound on the left; read the strong and weak forms in questions and do the exercises below. Write the correct pronunciation of the items in bold then listen to your teacher and check your answers; Do the exercises and draw the rule.*

We note from the start that the traditional skills and grammar have been used in an integrative way in asmuch as more than one skill have been combined to practice cognition and metacognition in one specific skill. The second remark lies in the combination of cognition and metacognition to construct strategies leading to learners' autonomy. They first **observe** before being asked to **interpret** the situation and give the correct or appropriate answer.

In the next stage, the designers provided further linguistic and communicative material to help learners to narrow their interpretations of the situation. It is not until stage that the teacher intervenes to facilitate learners' processes of observation, arguments construction, and interpretation. In the next stage, learners start collaborating with peers and get additional linguistic and communicative materials to trigger hypotheses. The collaboration phase has been conducted within what the designers have named Discussion, in the textbook.

In short, In the *Listen and Speak, say it clear, read and write* rubrics, the textbook designers have actually taken into account the (1) observation, (2) interpretation construction, (3) contextualization, and (4) cognitive apprenticeship phases. Learners are asked to predict language functions, the lexis related to the topic, and then to the

situation, through the same range of material by using the illustrations provided in the section. Then, learners check their hypotheses by using the self-evaluation strategy.

Discussion

The conclusion, to which we are led, as regard the use of cognition and metacognition in Spotlight on English Book Three, is that the learning process overarches learners' construction of the linguistic and communicative competencies. The significant findings indicate clearly that the designers have not borrowed the constructivist principle as a linear process; instead, they implemented it as a cyclical one. Accordingly, the ICON model has not been adopted on the basis of the set of graded phases, but adapted instead since the "hypotheses testing" phase has been put ahead of the "cognitive apprenticeship" phase. Said differently, the "formulating and testing hypotheses" phase is used, as a cognitive learning strategy at the service of the whole process. Clearly, three main motives are called in mind to explain the reason behind the choice made by the designers to adapt the model in the textbook:

-**First**, the syllabus gives prominence to predicting/ guessing/ setting and checking hypotheses, as learning strategies.

-**Second**, the designers' intention was arguably to choose a type of constructivist orientation that gives preference to guidance rather than autonomy from the start. In other terms, put in front of two alternative choices:

(1) to start the lesson from the outset by a presentation phase which paves the way for further learning stages, or

(2) making abstraction of the presentation phase to leave learners autonomous from the start, the textbook designers made the first choice.

In other terms, confronted to the sharp distinction between the BIG (Beyond Information Given) constructivist orientation, in which content and linguistic manipulations are presented to the learners, prior to knowledge construction, and the WIG (Without Information Given) constructivism which starts, at the outset, with knowledge construction, the choice was made for the second version. The choice of the weak version of constructivism made by the designers seems to be motivated by the fact that, as mentioned earlier in this article, the

Algerian teachers and learners have always been used to being imbued with the weak version of the communicative approach subsequent to the behaviorist and the situational-structural approaches that gained ground in the Algerian educational system in the 80's and 90's.

Conclusion

Having examined the learning process implemented in the *Listen and speak*, R*ead and write, Say it clear (Do the exercises and draw the rules)* sections of Spotlight on English Book Three, File one, though not exhaustive, we have revealed the designers' orientation as regards Pierce's retroduction process, the use of the first phases of the ICON model, and O'Malley and Chamot's (1990) paradigm of language learning strategies. There is some evidence that emphasis is put on hypothesis making on the basis of inferences, a strategy which has been widely used in the oral, writing, and grammar skills. The sharp distinction between the original ICON Model and the adapted model is that the former is overarched by process whereas the latter is under the banner of strategy.

To understand the full impact of the designers' choice, we must refer however to an additional feature of the ICON Model. To conclude, one may say that, Spotlight on English Book Three designers escaped the ICON Model as a whole entity, as they focused mainly on the use of cognition and metacognition processes (guessing, inferring, connecting pieces of information, using background knowledge, assembling cues, distinguishing between sounds and meanings…) to learn discrete points of language (grammar, information getting and giving).

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