Deductive & Inductive Lessons for Saudi EFL Freshmen Students

Mohammed Y. Al-Kharrat
ykharrat [at] yahoo.com
King Khalid University, Institute of English & Translation (Abha, Saudi Arabia)

Abstract

The importance of students' active involvement in the learning process is increasingly growing in this era of information explosion. Educators continue to unravel ways to assist learners in developing their cognitive potential. Deductive learning and inductive learning which help students articulate their mental processes seem to incorporate many of the research studies propounded by ESL practitioners. These approaches have proved to give students the ability to rationalize what information is needed and, thereby, to make them conscious of the intent and content of the lessons presented to them.

Although these kinds of learning appear to be widely used across age groups, reported evidence of their use in college classes has rarely been found. This article describes the implementation of deductive and inductive methods for two lessons I actually observed of 30 Saudi freshmen students who participated in this study. This paper discusses the identification of the instructional goals along with the cognitive tasks by which students internalize the concepts taught. The study concludes with some pedagogical recommendations for ESL teachers to consider.

Introduction

Research into language learning has considerably enriched our understanding of the processes that take place in the classroom and the factors that influence them. Most researchers agree that, for optimal learning to occur, students need to exert a conscious effort to learn. Their teachers should activate the students' minds spontaneously and involve them in problem solving and critical thinking (Stoller, 1997). According to Anderson's (1990) cognitive theory, learners are better able to understand details when they are subsumed under a general concept. Anderson further states that the quality of learning depends on how well the basic concept is anchored. In short, greater stability of the basic concepts results in greater learning.

A number of research studies have reported that learners need ample opportunities for communication use so that they can integrate separate structures into given concepts for expressing meanings. Spada & Lightbown (1993) hold that thinking skills operate effectively when students voice their analysis and take part in the learning process occurring in the classroom. Methodologists also argue that learners in the classroom should experience creative reflections through which the teacher probes their understanding to elicit answers for the questions he or she poses. In this way, students can lay the foundations for their internal representation of the target language, which can allow effective learning to function properly (Pica, 1994). Many researchers such as Chaudron (1988) further document the benefits of involving students in the learning process. These investigators found that students taught by teachers who actively involved them in lessons achieved at higher rates than those in traditional classes.

The effectiveness of **deductive** and **inductive** approaches, aiming at maximizing the students' opportunity to practice thinking skills, has been investigated in empirical studies. *Deductive* learning is an approach to language teaching in which learners are taught rules and given specific information about a language. Then, they apply these rules when they use the language. This may be contrasted with *inductive* learning in which learners are not taught rules directly, but are left to discover - or induce - rules from their experience of using the language (Richards et al, 1985). Harmer (1989) ascertains that these two techniques encourage learners to compensate for the gap in their second language knowledge by using a variety of communication strategies. A number of research studies, likewise, has reported that successful learners often adopt certain learning strategies such as seeking out practice opportunities or mouthing the questions put to other learners (Peck, 1988). Inductive and deductive models offer this chance to learners because these two models foster a cooperative atmosphere among students. According to Celce-Murcia et al (1997), the communicative classroom provides a better environment for second language learning than classrooms dominated by formal instruction.

Thus, it is not at all surprisingly that deductive and inductive approaches have met with such enthusiasm; they are intuitively very appealing. Students can learn best once they have achieved basic comprehension and can accept feedback in the form of their production in meaningful discourse. There must be opportunities when students in the classroom use language to communicate ideas and not just listen to their teachers. Learning deductively and inductively is among the communicative approaches that encourage students to communicate fluently.

In Section 1 and 2 that follow, I report briefly on the process of two lessons; one an inductive grammar lesson, the other, a deductive grammar lesson. This is then followed in Section 3 with a pedagogical overview of issues that arose from my observation of these two lessons.

1. The Features of the Inductive Technique Used in a Grammar Lesson

The lesson begins by confronting the students with a stimulating problem, and they are then told to find out how it can be resolved. The confrontation is initiated first verbally, then the teacher writes a group of words on the board linked to the oral discussion he conducts. As the students react, the teacher draws their attention to the significant points he wants to present through his questioning. When the students become interested in, and committed to the lesson, and begin to offer reasoned interaction amongst themselves and with the teacher, the latter is able to lead them towards formulating and structuring the problem for themselves. Finally, the students analyze the required concept and report their results. <3>

1.1. The Lesson Plan

a. Concept to be developed:
>   How adding "-*ing*" to an English word consisting of one syllable can change its spelling.

b. Instructional Goals
  - ❍ (i) Students will construct the rule that when adding "-*ing*" to words, the final consonant is doubled if preceded by a short vowel sound, but not if preceded by a long vowel sound.
  - ❍ (ii) Students will provide the teacher with examples that show their understanding of the rule.

1.2. Report on the Cognitive Underpinnings of the Lesson

a. Concept Formation
>   **Introduction**
>   **Step 1:** The teacher started his lesson with a warm-up exercise making students recognize the difference between a short vowel sound and a long vowel sound. He gave examples of short vowels like: /e/ as in g<u>e</u>t, /i/ as in b<u>i</u>n, /A/ as in b<u>u</u>t, and long vowels /ee/ as in m<u>ee</u>t, /oo/ as in m<u>oo</u>n, /ai/ as in m<u>y</u>.
>   **Data presentation**
>   **Step 2:** The teacher continued the lesson by writing relevant words on the board that contain short vowels and long vowels such as:
>   - *cut, wed, map*
>   - *yawn, fight, tour*
>
>   He prompted the students to respond to what he had written by asking several questions, such as:
>   - *Phonetically speaking, can you tell me something about these words?*
>   - *Which words belong together? Why? How would you group these words?*
>   - *What did you notice?*
>
>   These open-ended questions got all the students to participate; thus, students' attention was constantly maintained.

b. Interpretation
>   **Step 3: Identifying Critical Relationship:** The teacher posed questions that were focused on the notion that all the verbs concerned had one syllable, some of which contain short vowels whilst others contain long vowels. After eliciting good answers for the questions posed, he then added additional letters to the written words that, again, led the students to reconsider their decisions. The list on the board appeared as follows:
>   - *cut**ting**, wed**ding**, map**ping***
>   - *yawn**ing**, fight**ing**, tour**ing***

Again, the teacher generated new observations and discussion that made the students see the difference and identify the critical relationship between words containing short vowels and their spelling in their present participle form. Some of the probing questions he asked were as follows:

- *What happened to the words after adding "-ing"?*
- *What does this tell us? What can we conclude about similar verbs?*

As the lesson proceeded, the process of observing and describing evolved naturally into making comparisons and inferences. Thus, the students reached the desirable conclusion their teacher wanted them to comprehend and apply.

c. Applications of Principles

Step 4: Having made students understand the rule, the teacher instructed them to relate what they found out in the lesson and to give him examples of their own. Then, he divided the class into several groups and had them ask each other to verify the rule and give reasons for their verification. Finally, an assignment was given to be turned in and discussed for the next day. This assignment consisted of a short story containing numerous examples of the structure concerned, and students were asked to identify the relevant verbs, explain their meanings, and present them in various forms (first person present continuous, gerund, third person past continuous, see *figure* 1 and cf. Azar, 1993).

Common Uses of the Structure
to bet, to feel

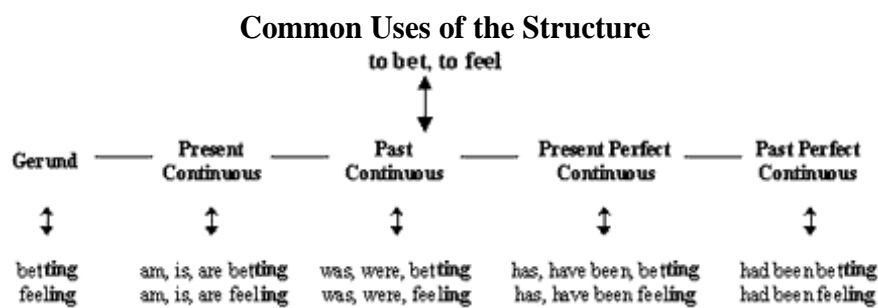| Gerund	Present Continuous	Past Continuous	Present Perfect Continuous	Past Perfect Continuous
betting	am, is, are betting	was, were, betting	has, have been, betting	had been betting
feeling	am, is, are feeling	was, were, feeling	has, have been feeling	had been feeling

Figure 1

2. The Features of the Deductive Technique Used in a Vocabulary Lesson

This model is the inductive model's counterpart. The lesson begins by a presentation in which the teacher introduces the concept to be taught directly. The students should not have difficulty digesting the concept due to the teacher's clarification of it. To reinforce students' understanding and make sure that the students are following, the teacher writes examples and non-examples of the concepts on the board. An explanation is offered as to what the rule entails, and students are given the task of identifying the correct examples. Finally, the teacher asks students to generate their own examples, and report back their findings to the class.

2.1. The Lesson Plan #2

a. Concepts to be Developed:

The definition of antonyms and synonyms, and the difference between them.

b. Instructional Goals:

- (i) Students will compare word pairs, namely antonyms and synonyms, and the distinction between them.
- (ii) Students will provide the teacher with examples that show their understanding of the concepts.

2.2. Report on the Cognitive Underpinnings of the Lesson

a. Presentation of the abstraction

Step 1: In this phase, the teacher stated the objective of the lesson clearly by defining the concepts and applying them to adjectives with which the students were familiar. The definition were like this:

- Synonym is a word pair that means the same. (wealthy, rich)
- Antonym is a word pair that means the opposite. (strong, weak)

Next, he displayed the following structural outline on the overhead projector to capture the students' attention, (see *figure 2*).
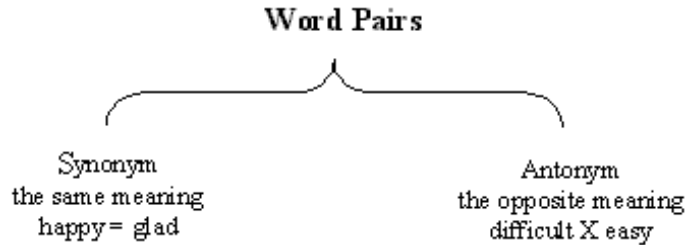
Figure 2

b. Interpretation

Step 2: The abstraction was further illustrated with a number of examples. The teacher first wrote words on the board in two columns, using adjectives like *famous, cause, confused, alive, upset, wonderful, reason, well-known, dead, calm, lost,* and *terrible.* These words represented a variety of adjectives which could be sorted out into synonym or antonym word-pairs. He then proceeded to ask students whether the words belonged - or did not belong - to the concepts of antonym and synonym as had been explained at the beginning of the lesson. He asked students to use their knowledge to match the adjectives, asking questions like:

- Do these two words "reason", "alive" *belong together?*
- What matches the word lost*?*
- What can we say about words like famous *and* well-known*?*
- *Using our new understanding of word-pairs, what can we deduce about a word-pair like* dead *and* alive*?*

c. Applications of the Abstraction:

Step 3: This phase is identical to the application phase of Step 4 in the inductive previous lesson. Students were asked to provide additional examples of the concepts on their own. The teacher asked the students saying:

- *Who can give me more examples of synonyms?*
- *Who can give me more examples of antonyms?*

Step 4: The lesson ended with the teacher asking the students to sum up what they learned throughout the lesson saying:

Today, we have learned about word pairs which are divided into ... and ... . Synonyms mean ... and antonyms mean .... Examples of synonyms are ... ,... and examples of antonyms are ...,... .

Finally, an assignment was given to them to be turned in next day. This consisted of a story written by the teacher, rich in similar and contrasting adjectives. The students were asked to find the synonyms and antonyms contained in the story, and to match them.

3. Pedagogical Considerations

It was obvious that the development of thinking and linguistic skills was the major pedagogical goal of both techniques, inductive and deductive. As the teacher embarked on the lesson and classified examples, students were encouraged to hypothesize, compare, construct, and generate. Students' participation in both models indicated their comprehension of the information being presented. Hence, it is possible to proclaim, in the light of the above study, that these two strategies can spur students to have confidence in their target language and exploit it for communicative ends. Both techniques relied on clear examples and both depended on the active involvement of the teachers in guiding their students' learning. If used properly, both strategies would play an efficient role in helping learners develop both fluency of behavior and understanding of the foreign linguistic system.

However, it is safe to say that an inductive method involves students more in an *analytical* study of the language than the deductive method does. In addition, from my observation of the lesson in question, this method seems to be highly motivating and extremely beneficial for the students' understanding of the materials presented to them. The thinking skills that students employed in the inductive model were far more demanding than those used with the deductive model. This observation brings with it the issue of whether or not it requires more experienced and advanced students. Its effectiveness also counts on the teacher as an active leader in guiding students when they process the information.

The deductive model, on the other hand, is less open-ended than the inductive model, and, consequently, it sacrifices some of the motivational characteristics inherent in an inductive technique. It seemed to me, from my comparison of the process and the product

of the two lessons that the attraction to a sense of the unknown - which is intrinsic within the inductive method - is lost in the deductive model. Hence, it was difficult, sometimes, for the teacher to recapture the attention of the student who had momentarily wandered.

But the above conclusions do not negate the fact that both techniques, inductive and deductive, are worth consideration by all language teachers. Effective use of these strategies would enable teachers to experiment with their teaching methods in order to seek improved performance by their students.

References

- Anderson, J. (1990) *Cognitive Psychology and its Implications.* New York: W. H. Freeman.
- Azar, B.S. (1993) *Chartbook: A Reference Grammar • \ Understanding and Using English Grammar (2nd Edition).* Prentice Hall Regents.
- Celce-Murcia, M., Dornyei, Z., & Thurrell, S. (1997) *Direct Approaches in L2 Instruction: A Turning Point in Communicative Language Teaching?* TESOL Quarterly, 31: 141-152
- Chaudron, C. (1988) *Second Language Classroom*, Cambridge Applied Linguistics.
- Harmer, J. (1989) *Teaching and Learning Grammar*. Longman.
- Peck, A. (1988) *Language Teachers at Work*, Prentice Hall: International English Language Teaching.
- Pica, T. (1994) *Questions From the Language Classroom: Research Perspective*. TESOL Quarterly, 28(1): 49-79.
- Richards, J., Platt, J., & Weber, H. (1985) *Longman Dictionary of Applied Linguistics.* Longman.
- Spada, N., & Lightbown, P. (1993) *Instruction and Development of Questions in the L2 classroom.* Studies in Second Language Acquisition, 15:205-224.
- Stoller, F. L., (1997) *Project Work: A Means to Promote Language Content.* English Teaching Forum. Vol. 35/4.