Appendix

● Grammar Points along with the Teaching Models

UNIT/ LESSON	GRAMMAR TITLE	TEACHING MODELS
1-1	Present Continuous	
1-2	Present Simple	Advance Organizer & Thinking Inductively
1-3	Present continuous or Present Simple	Advance Organizer & Thinking Inductively
1-4	Present Tenses with future meaning	Advance Organizer & Thinking Inductively
2-1	going to	Advance Organizer & Thinking Inductively
2-2	will (1)	Advance Organizer & Thinking Inductively
2-3	will (2)	Advance Organizer & Thinking Inductively
2-4	will or going to	Advance Organizer & Thinking Inductively
3-1	will be doning and will have done	Advance Organizer & Thinking Inductively
4-1	Past Simple	Advance Organizer & Thinking Inductively
4-2	Past continuous	Advance Organizer & Thinking Inductively
5-1	Present Perfect (1)	Advance Organizer & Thinking Inductively
5-2	Present Perfect (2)	Advance Organizer & Thinking Inductively
5-3	Present Perfect (3)	Advance Organizer & Thinking Inductively
6-1	Present Perfect continuous	Advance Organizer & Thinking Inductively
6-2	Present Perfect continuous or Present Prefect Simple	Advance Organizer, Thinking Inductively, & Concept attaining
6-3	present Perfect with how long, for and since	Advance Organizer, & Thinking Inductively, Conlept atlaining
6-4	Present Perfect with how long and Past simple with when, since or for	Advance Organizer thinking Inductively, & Concept attaining
7-1	Past Perfect	Advance Organizer & thinking Inductively
7-2	still and yet, anymore/any longer/no longer	Advance Organizer & Concept attaining
8-1	to... (I want to do) and-ing (I enjoy doing)	Advance Organizer & thinking Inductively
8-2	say and tell	Advance Organizer & Concept attaining

indicates that Information Processing models results in better learning of grammar in comparison with Drill and Practice method which is somehow dominant in our country. It should be discussed here that IPM, by teaching students how to learn (reason) in a certain fashion, how to think and learn in a certain way, how to reason independently, increases students' power to teach themselves and thus to share the power of the instructional situation. As students reach out and build new ideas, we can guide them so that they develop better ideas. However, we cannot teach students to reason inductively and then reject the ideas they develop. Encouraged to think creatively, students will develop solutions we have not thougth of (Joyce, et al. 1992). Teaching thinking requires a commitment to solid instruction in the models of teaching that engender those types of thinking and the willingness to persist until the students become effective in their use. Thus, application of IPM is also beneficial, as far as long-term educational aims are concerned.

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Table 4.1: Paired T-test in Control Group (Practice and Drill Method)

	N	X	S.D	d.f	t-ob.
Pre. T.	30	29.33	7.69	29	
Post. T.	30	33.43	8.73	29	*10.42

P≤05 t critical 2.04

grammar learning

As evident in Table 4.1, the mean of the students in the pre-test for control group is 29.33, while at the post-test the mean is 33.43 which shows an improvement. In fact, with one degree of freedom at a probability level of P≤.05, the t-observed is 10.42 that exceeds the t-critical of 2.04.

Table 4.2: Paired T-test in Experimental Group (IPM)

	N.	X	s.d	d.f	t-ob.
Pre.T.	30	29.50	6.38	29	
Post.T.	30	39.40	6.02	29	16.46

P≤05 t critical 2.04

The results given in table 4.2 is the paired T-test of the means in the experimental group. As it is evident, t-observed is 16.46 which far exceeds the t-critical is 2.04. Therefore, at this stage of analysis the null hypothesis is safely rejected.

As presented above and is shown in tables 4.1, and 4.2, we might come to the conclusion that IPM is better than drill and practice, as far as students' grammar learning is concerned. However, this does not scientifically prove the rejection of null hypothesis. There should be a more dependable criterion for our judgment. To do so, an independent T-test was conducted on the means of the students in two groups. The results are given in Table 4.3.

Table 4.3: Independent T-test for Control and Experimental Groups

Groups	N	X	S.D	d.f	t-ob.
Con.	30	33.43	8.73		
Exp.	30	39.40	6.02	58	*3.08

P≤05 t critical 2.00

The figures given in the table show that the t-observed of 3.08 at a probability level of P ≤.05 with a degree of freedom of 58 also exceeds the t-critical of 2.00. So the null hypothesis is also rejected here, meaning that IPM significantly differs from drill and practice method in improving Iranian students' grammar learning.

Discussion

The rejection of the null hypotheses

present actions happening at the time of speaking".

At the other stage, which is *called Interpretation of* Data, the teacher asked questions, and the students had to differentiate and identify critical relationships. Questions were like: "Why did you classify them so?" "What did you find similar or different?", etc.

The third stage was *Application of principles*. At this stage students were to explain new phenomena (predicting consequences from conditions that have been established), that is, dealing with new sentences which mainly concerned the use of various tenses. In fact, at this level students should be able to classify and elaborate on any given sentences. Students would be required to expand their capacities to handle information, first developing new concepts, then developing new ways of applying established principles in encountering new sentences.

Attaining Concepts

Concept attainment is the search for and listing of the attributes that can be used to distinguish exemplars form non-exemplars of various categories.

First the teacher selected some examples of interested grammar points. These became the "positive exemplars" and some that not, (those became the "negative exemplars"-the ones that do not have the attributes of the category. The grammar exemplars were presented to the students in pairs. The grammar points were presented in the sentences of provide more information. To carry on the models, the teacher needed about 20 pairs in all.

The process began by asking the students to scrutinize the sentences and to pay particular attention to the underlined words (the grammar points), then the teacher instructed them to compare and contrast the functions of the positive and negative exemplars. The positive exemplars had something in common in the work they did in the sentence. The negative ones did a different work.

The teacher asked the students to make notes about what they believed the exemplars had in common. More stes of exemplars were presented and they were asked whether they still would have the same idea. If not, they were asked what they knew then.

The presentation of exemplars continued until most of the students had an idea that they thought would withstand scrutiny. The teacher continued by providing some more sentences and by asking the students to identify the points that belonged to the concept.

When they could do that, they were provided with the name of the concept and they were asked to agree on a definition. The final activity was to ask the students to describe their thinking as they arrived at the concepts and to share how they used the information that had been given.

For homework they were asked to find the specific points in a short story the teacher assigned them to read. The teacher would examine the exemplars they came up with to be sure they had a clear picture of the concepts.

Results

As it is revealed from our statistics, the mean scores of the students show improvement of 4.1, and 8.73 in the post-tests for control and experimental groups respectively. In order to find a more solid basis for our claim that IPM caused the improvement, a T-test was conducted to determine whether the treatment, that is, IPM had any significant impact on student's

procedure and the steps in teaching grammar three at Simin Language Institute (1997) which are taken for the control group.

The teacher's objective was to focus student's attention on the structures used in a natural context in the control group. So, the teacher had to introduce the new forms, for a few minutes, through a variety of activities; i. e., story telling, using pictures, question/answer, etc. For instance, the teacher introduced simple present by talking about his own activities during a day. The teacher went through the following stages and used the following techniques to help the learners:

1. focus practice.
   a. single-slot substitution
   b. multiple-slot substitution
   c. transformation
2. communication practice
3. translation practice

The sequence and the application of the models for the experimental group were as it is illustrated at the appendix.

Teaching Procedure in the Experimental Group

Advance Organizers and Tenses

The purpose of advanced organizers is to integrate what has been learned to what is to be learned (Joyce & et al., 1992, p. 183). In the experimental group the teacther was responsible for organizing and presenting what was to be learned. The learner's primary role was to master ideas and information.

To present the most general ideas of the English tenses, lecturing- and in some occasions asking questions-was used as a means of organizer. The principle category of tenses in English which were **present, future, and past**, were explained. The general presentation was followed by a gradual increase in detail and specificality. Thus, at this step, students were informed of other categories in each tense as continuous and perfect ones. In a further steps, students were informed that they were going to start to learn the present tense. Then, they would move to future and finally they would cover past tenses. The last step was simply done to reconciliate grammar topics of the book with previously learned content. In other words, this was done to organize the sequence of the material so that each successive learning was carefully related to what has been presented before.

Here advance organizer played the crucial role of filling the empty bubbles of students' knowledge or firmly to construct the understanding of the point. At the beginning of the following session, students were informed of the tense classification as an advanced organizer.

Thinking Inductively

Following the presentation of "advance organizer", the students were given a series of sentences, and they were asked of classify them to English tenses. The sentences were chosen among different tenses. This stage is called *"concept formation* which involves(1) identifying and enumerating the sentences that are relevant to a tense, (2) grouping these sentences into categories whose members have common attributes; and(3) developing labels for the categories. It is necessary to mention that the study was done on two levels(1) structure, (2) and use. At structure level, students learned the building components of sentences and their order, and at use level, they found what are the uses and functions of these tenses, i.e., present continuous is used to

final subjects for the study sixty students whose score fell on 2 standard deviations above and 2 standard deviations below the mean of 27.4 were selected. They were, then, randomly put into two groups which were equal in number. The groups were coded as Con. (Control Group), and Exp. (Experimental Group) and were supposed to receive routine method (drill and practice), and treatment (IPM) respectively.

All of the subjects spoke Farsi as their mother tongue, and they were almost homogenous in terms of L1 background.

Materials

The grammatical topics of both groups (experimental and control one) were the same; however, due to the nature of IPM, the type of exercises and homework in the experimental classes were different from those of the control one. The material consisted of eight units, each unit with 1-4 lessons. The grammatical topics were mainly verb tenses with a few other grammatical points.

Design

The purpose of the study was to find out the effect of the nine-session period of teaching on students' grammar ability. In brief, the research hypothesis, "IPM has no significant effect on students' grammar learning.", was considered.

To conduct the research, a true experimental design was applied. The schematic representation of the design is:

R------- EXp. ------- T1 ----*---- T2
R------- Con. ------- T1 --------- T2

each of these letters stands for:
Exp. Experimental Group
Con. Control group
* Treatment
T1 Pre-test
T2 Post-test

Instrument

The following tests were utilized in conducting the research:

1. the 50-item Intermediate Nelson Test (1976) for the purpose of choosing the sample.
2. flap charts and recorded examples in teaching some points
3. pre-test
4. post-Test

As for the pre and post-test the researcher developed two parallel tests of 45 items each; the last 5 items which were sentences to be translated.

Scoring

Each item received one point except translation items which received two points each; therefore, the total score was 50.

In the process of pre-testing, teaching and post-testing, an attempt was made to ensure that all the conditions were controlled and kept the same for both groups. In other words, the time, the place and the teacher variables were exactly the same. In fact, the teacher was the researcher himself.

Procedure

After dividing the sixty students into two classes, one as control and the other as experimental and administering the pre-test, the control class was taught through practice and drill method.

The Teaching Procedure in Control Group

The following is the introduction of teaching

concepts for organizing information and to help them become more effective at learning concepts. It includes an efficient method for presenting organized information from a wide range of areas of study to students at every stage of development.

Inductive thinking

The ability to create concepts is generally regarded as one of the basic thinking skills. Joyce, etal. (1992) explored inductive processes with both relatively rigid and flexible students; they found that flexible students made the greatest gains initially. More important, they found that practice and training increased effectiveness and that the students could learn to carry on inductive activity independently.

The model presented here is from the work of Hilda Taba (1966). Its tasks induce students to find and organize information; to create names for concepts; and to explore ways of becoming more skillful at discovering and organizing information and at creating and testing hypotheses describing relationships among sets of data. The model has been used in a wide variety of curriculum areas and with students of all ages.

Advance Organizers

During the last twenty years this model, formulated by David Ausubel (1968), has become one of the most researched in the information processing family. It is designed to provide students with a cognitive structure for comprehending material presented through lectures, readings, and other media. It has been employed with almost every conceivable content and with students of every age. It can be easily combined with other models-- for example, when presentations are mixed with inductive activity.

As models for teaching, they seem to have special capacity on presenting the grammatical concepts, particularly when they are used inclusively to provide enough variety to attract students.

Research Hypothesis

To be on the safe side about the effect of IPM on Iranian English language learners, and about the differential nature of the effect of it in the improvement of grammar, the following question and null hypothesis were formulated:

Q: Do the Information Processing Models have any effect on Iranian student's grammar learning?

Ho: The Information Processing Models have no effect on Iranian student's grammar learning.

To carry out this study classes were selected at Simin Institute. In one (control group) grammar was taught through the routine procedure of practice and drill and in the other (experimental group) through IPM. At the analysis stage, through the comparison of the pretest that had been taken at the early session and the post - test at the end (paired and in dependent T-test), the possible effect of the method was shown.

Method and Design Subjects

The population for the study was from Iranian high school and university students of English. So, two classes of male students at Simin Educational Institute comprising a total of 94 subjects were initially selected as samples. A fifty item intermediate Nelson test was administered to the subjects. To select the

Abstract

While the research on how students learn to think is not promisingly complete at all, there are various models which equip student's to increase their quest of commanding over their information (Bruner, Goodnow, and Austin 1967), to profit direct instruction through readings, lectures, and instructional systems (Ausubel 1980), and to create concepts (Taba 1966). In this study, it was tried to investigate the role of Information Processing Models (IPM), that is, advance organizer, thinking inductively and concept attainment (Joyce, Weil, & Showers, 1992) on English grammar learning of Iranian students. To do this, two grammar classes were randomly selected from Simin Language Institute. In one, grammar was taught through the routine procedure of practice and drill, and in the other, through IPM. At the analysis stage, through application of paired and independent t-test, the effect of the method was depicted.

Key Words: Information processing models, English Grammar, Learner's accuracy, learning concepts.

Introduction

Grammar has had a bad impression over the last couple of decades. This has not prevented language teachers in many parts of the world from continuing to teach grammar, either in ways hallowed by time or in new and interesting ways. And, judging from the number of recent publications dealing with the issue (see, e.g., Dirven 1990; Odlin 1994; Bygate, Tonkyn, and Williams 1994), there is now a noticeable revival of interest in grammar teaching. Sharwood (1981) and Rutherford (1987) claim that drawing the learner's attention to properties of second language by focusing on its form or grammar can improve the learner's accuracy in the second language. They argue that providing a variety of grammatical consciousness - raising activities facilitate second language learning by "Grammatical Consciousness-Raising", that is the deliberate attempt to draw the learner's attention specifically to the formal properties of the second language.

The six articles of the International Phonetic Association, which are brief declaration of principles of L2 teaching, emphasize the fact that in the early stages of language learning grammar should be taught inductively focusing on the general language facts observed during reading. Therefore a more systematic study of grammar should be postponed to the advanced stages of the course (Stern, H.H. 1987, P.P. 88).

Marianne Celce-Murcia (TESOL, 25: 3,1991), on the support of importance of Grammar to be taught, holds that existig researches strongly suggest that some focus on form may well be necessary for many learners to achieve accuracy as well as fluency in their acquisition of a second or foreign language... (see also, Rutherford, 1987 and Sharwood, 1981).

However, there remains a widespread uneasiness in the profession about the way of presenting grammar in the second or foreign language teaching.

In this study, try has been made to investigate the role of IPM on English grammar learning of students at Simin Language Institute. IPM comprises a set of three models.

Concept Attainment

This model, built around the studies of thinking conducted by Bruner, Goodnow, and Austin(1967), is designed to help students learn

Effect of

Information Processing Models on Learning Grammar by Iranian Students

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چکیده فارسی

با آن که تحقیق دربارهٔ «چگونگی فکر کردن دانش آموزان» ابداً رضایت بخش نبوده است، اما مدل هایی وجود دارد که معلمان با استفاده از آن ها، دانش آموزان را یاری می دهند تا بر اطلاعات خود تسلط بیش تری بیابند (برونو، گودتو، و آستین، ۱۹۶۷) و با تعلیم مستقیم از طریق خواندن، خطابه و دیگر سیستم های آموزشی به یادگیری آن ها نظام بخشند (آزبل، ۱۹۸۰) و سرانجام، مفاهیم درسی را در ذهن آن ها روشن سازند (تابا، ۱۹۶۶).

در این تحقیق، سعی بر آن بوده است تا تأثیر مدل های اطلاعات پردازی شامل پیش سازمان دهنده، تفکر استقرایی و دریافت مفاهیم روی یادگیری دستور زبان انگلیسی دانش آموزان ایرانی در «مؤسسه سیمین» بررسی شود. برای این کار، دو کلاس دستور به طور تصادفی انتخاب و در یکی از آن ها دستور به روش معمول «تمرین و تکرار» و در دیگری به کمک «الگوهای اطلاعات پردازی» (IPM) تدریس شد. سپس در مرحلهٔ تجزیه و تحلیل، نتایج به دست آمده از پیش آزمون و آزمون نهایی با به کارگیری آزمون «مقایسهٔ میانگین ها» (Paired and Independent t-tests) بررسی و تأثیر روش مورد نظر نشان داده شد.