MODIFICATION OF VERBAL BEHAVIOUR

BY

ACADEMIC GAMES

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ABSTRACT
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Modification of Verbal Behaviour by Academic Gaming

An academic game was developed to improve the use of two-verb tenses by students of English as a second language. Using a pre- and post-test control design, the academic game was played three times by one experimental group (E2), one time by the other experimental group (E1), while a "control" group followed a special remedial program (C2), and a second "control" group took the regular course (C1). "t"-tests for the significance of the difference between means and the McGuanj 'G' ratio were used to analyze the students' scores. The experimental groups showed an increase over their pretest scores (E1, p<.05, G=0.2; E2, p<.001, G=0.4); although no group showed a statistically significant increase greater than any other. C2 (following a special remedial program) also showed an increase over the pre-test scores (p<.001, G=0.4). The control group C1 did not show an increase (p>.05).

Results validate the game developed for this project. It is suggested that didactic games may be more efficient temporally than traditional remedial programs, as the remedial program took 50% more time than the game to achieve similar results. It is also suggested that repeated playing of this game is needed to achieve maximum results.
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I also want to express my appreciation to all my co-teachers for the help they gave me in the form of feedback and actual participation in the experiment.
CHAPTER 1

1. Introduction

A. Background

It was ever thus. Some long accepted instructional approaches downplayed the joy of learning. Seemingly, schools and teachers treated learning as a serious business. However, with the increasing realization of the role of motivation in learning, a search began (and is still continuing) for methods which would incorporate motivational factors, thereby facilitating the learning process as well as making learning enjoyable.

B. Development of Project

Academic games and simulations are perhaps the most innovative of these methods and for this reason not as widely used. To date they have been mostly employed in the fields of social science, history and some of the sciences. (Gillespie in Learning through Simulation Games - Gillespie 1973) lists or describes 10 or 15 games, all of which deal with such topics as inter-governmental relationships, European colonization, institutional long range planning, etc.

I work in the field of second language teaching. When I became interested in the use of games and simulations, I searched for some in this area. Unfortunately, I found that this approach has barely been tried. For example, Ahmad, in A Look at Recent ESL Course Material for Adults (Ahmad 1975) notes that a special feature of two new courses is their use of language games. But, these games, although they are a nice change for the students, are not carefully structured models of the language being practiced; they are adaptations of children's games. Rees, in Games and Question Practice (Rees 1975), lists 12 games for providing practice in question making. These again, have many extraneous variables.
and an uncontrolled environment.

Therefore, I proposed: a) to devise a game which would deal with a language difficulty frequently found amongst French Canadian students of English as a second language; b) to evaluate its effectiveness as a teaching tool; and c) to evaluate the effectiveness of repeated playing of the game.

2. Language Learning and Games

A. Problems in Language Learning

Teachers of second languages face two major problems, especially when teaching adults: (1) to provide enough practice for students to speak correctly and confidently;

(2) to maintain their interest and motivation long enough to complete training, as language learning necessarily involves many long hours of tedious repetition and practice of structures. This practice is usually provided by the boring repetition of cues drills or dialogues.

Although these drills are expedient, it is extremely difficult for the student to maintain a high level of incentive or motivation over this long period of time while so little progress appears to be made. This problem is mentioned again and again in articles dealing with second language teaching. To wit:

More important, perhaps, than any linguistic goal of initial foreign language instruction is the need to develop in the student both confidence in his ability to learn a foreign language and interest in continuing the study long enough for him to acquire functional mastery (Newmark 1967, p. 244).

It is the student's good or poor attitude that makes life easy or difficult in the foreign language classroom (Smith 1971, p. 82).
Motivation of foreign language students poses special problems for the teacher (Disick 1972, p. 417).

It is the teacher's responsibility to help maintain a high level of motivation while at the same time providing the necessary drills and practice. Many teachers have tried a variety of things: pass/fail grading, small group activities and individualization of content (Disick 1972) as well as audio-visual aids, stories, games and songs (Newman 1967), to lighten the mood of the class.

The more mature student is often so eager to tackle light activities that one wonders whether in every grown-up there does not lurk an irrepressible little boy who must be appeased from time to time (Rees 1975, p. 136).

Although these activities may provide fun and thereby increase interest and motivation, they do not necessarily provide additional language practice. Further:

The fact that students are having fun in the classroom, while it may be useful in generating interest in a topic, is not in itself evidence that significant learning is taking place (Park and Henchey 1972, p. 1).

B. Academic Games

It would be useful to find an activity that generates interest and at the same time is designed specifically to provide additional learning and practice. In the opinion of a number of educators academic games can meet both these objectives:

It is unquestionably true that games can generate great interest and involvement... But we also believe
that games in themselves teach, that the players learn from their very participation in the game. (Boocock and Schild 1968, p. 19).

Games reinforce the skills and concepts mastered. (Abt 1970, p. 40).

An educational game's objective is to educate, not to entertain. Entertainment becomes an instrumental value, rather than the design objective (Boocock and Schild 1968, p. 72; italics added).

Fun and excitement, in language learning as in most adventures, can be profitable and very much in place. (Lee 1965, p. 1).

Games are ideally suited to learning because they force the student to focus on the concepts being taught by removing extraneous and distracting details which occur in the natural environment, while at the same time demanding active participation.

(Simulation games) ... allow participants to examine complex systems of interaction in their complexity, rather than as isolated entities, to engage in rational decision-making procedures... Emphasis is placed on the development of analytical approaches and organized concepts... (Gillespie 1973, p. 4).

There are apparently certain aspects of games that especially facilitate learning, such as their ability to focus attention, their requirement for action rather than merely passive observation, their abstraction of simple elements from the complex confusion of reality and the intrinsic rewards they hold for mastery (Boocock and Schild 1968, p. 29).

Academic games also provide an additional bonus. They free the teacher for student counselling, individual remedial work, observation of students, etc.
Although the use of academic games appears to provide many benefits, both for the student and the teacher, they are not yet widely used. This may be due to the fact that classroom games in general have often suffered disapproval. This arises in part from

lack of observation and knowledge of how pupils learn as thoroughly on occasion by means of what is called play as by means of what is called work. And indeed, what great difference is there between 'work' and 'play' when concentration is sharply focused and the learner's energies stretched to the full? (Lee 1965, p. 1).

Perhaps this is also the reason for the scarcity of educational games. In particular, there is a dearth of games designed specifically for language learning. A limited number of games however, are available.

The word, spelling and pronunciation games in Lee's book, Language Teaching Games and Contests (Lee 1965) are very helpful; however, they require the constant attendance of the teacher and put a great deal of stress on competition. Furthermore, the majority of Lee's games do not require decision-making on the part of the student; they merely require repetition of the formula. In other words, they are an interesting way to do drills.

Parlez Anglais is a card game designed specifically to teach English but it is inadequate in many respects - uncontrolled, lack of specific objectives, no correction procedure. However, students enjoy playing it.

Many commercial games, although designed primarily for entertainment or for use in the humanities can be adapted by the language teacher for use in the language training situation, particularly at the more advanced levels. Of note for all language levels are word and spelling games (e.g., Perquackey, Password,
Lexicon, Scrabble). At more advanced levels, the teacher may use such games as An
Aspect of Choice or Values, Sroc or Ghetto, as well as management simulation games
(e.g. Interviewing and the Supervisor’s Survival Kit).

In these games, however, the approach to ‘playing the game’ is open
ended. Little attention has been given to the creation of a well-organized, system-
atic approach that meets the specific needs of language training, that is, control
of language structures.

A game that would meet the specific needs of language training would/
must necessarily include: systematic, step by step instructions, cumulative (vocabu-
larly and/or structural) decision-making, extensive practice in the use of the vocabu-
larly or structures being taught, etc. (cf. Mitchell 1973).

3. Problem(s) in Learning English as a Second Language

In teaching French-Canadians English as a second language, I have
found that the interference of French verb forms and their variable translation in
English creates many problems for the student (e.g. present perfect vs simple past,
past continuous vs used to, simple past vs past continuous, simple present vs
present continuous).

The last problem (simple present vs present continuous) is particu-
larly acute. Francophones have trouble differentiating between the simple present
tense and the present continuous tense because in French the habitual activity and
the single ‘now’ event in the present time are expressed by one verb tense. (See
Figure 1).
**FIGURE 1**

Comparison of English and French Present Tenses

<table>
<thead>
<tr>
<th>English</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>simple present</td>
<td>I <em>eat</em> an apple every day.</td>
</tr>
<tr>
<td>present continuous (progressive)</td>
<td>I <em>am eating</em> an apple now.</td>
</tr>
</tbody>
</table>

This problem is not isolated to teaching Francophone students.

Little is done in most course books to bring progressive tenses as a group in relation to simple tenses, in order to give the student a picture of what a progressive tense is, or what a simple tense is (Heathcote 1955, p. 35).

One must understand the distinctions made in the use of these two tenses in order to understand the problem faced by a student of English as a second language. R.A. Close suggests the following dichotomy:

**Simple**

A1. Complete acts (including acts seen as a whole):
   - Jones gets up, looks out of the window, and sighs.
   - Aeneas rescues his father. (Picture heading).

A2. Permanent State or Activity:
   - Water changes to steam at 100°C.
   - He smokes too much.

**Progressive**

B1. Incomplete acts or activities:
   - I am writing.
   - Outside the sun is shining.

B2. Temporary State or Activity:
   - He is smoking too much.
   - These days.
It is important to note that categories (1) and (2) are not mutually exclusive, but different aspects of the same thing. The difference lies not between A1 and A2, but between A(1 and 2) and B(1 and 2) (Keachute 1965, p. 36).

Hayden, Pilgrim and Haggard (1956) give perhaps the most detailed and useful (from a teacher’s point of view) analysis of the uses of these two tenses.

The simple present tense is used to express:

- a) perception, feelings or states that occur or exist at the moment of speaking, e.g.:
  
  I smell something burning.

- b) activities (states, condition, feelings, etc.) that extend for varying lengths of time beyond the moment of speaking . . . the beginning and the ending are unknown or unimportant, e.g.:
  
  He teaches zoology.

- c) activities which have occurred at intervals before and will probably continue to occur at intervals after the moment of speaking, e.g.:
  
  I play almost every Sunday morning.

- d) activities that are relatively permanent.
  (Some of the statements are general truths), e.g.:
  
  Water freezes at 32°F.

- e) activities that will take place in future time, e.g.:
  
  They leave tomorrow.

The present continuous tense is used to express:

- a) activities that are in actual progress at the moment of speaking, e.g.:
  
  I’m washing the dishes.

- b) activities that began a relatively long time before and that will probably end a relatively long time after the moment of speaking, e.g.:
  
  I am having a lot of trouble this semester.

- c) activities that will take place in future time, e.g.:
  
  I’m going to Peru.

(Hayden, Pilgrim and Haggard 1956, p. 71-76).

Except for future time activities, there is a definite division in the use of these two tenses.
This difficulty of differentiating between the two tenses is a problem which has plagued both teachers and students for years. Could there be some new way of tackling the problem which would help the students?
CHAPTER II

1. Developing an Educational game to Improve Student's use of the Simple Present and Present Continuous Tenses

A. Background

Two years ago, I was teaching a class of 'level one' (beginners) adult students. We had finished the units on the simple present and the units on the present continuous as well as the one unit which compared and contrasted these two tenses. As I had found with previous classes, the distinction between these two tenses still had not been mastered. In considering what approach to use in developing new instructional materials, I had to consider the student's usual lack of motivation\(^1\) as well as their antipathy to the course's methodology, which consisted largely of drills, drills and more drills. In other words, I had to find a new approach which would not only interest or motivate the students, but also one which would provide the needed practice which the drills in the program were designed to provide.

For some time, I had been using commercial, but non-instructional games, e.g. Sensitivity, Smog, in my advanced classes. Since I had found them to be interesting to the students in the advanced classes, I tried to find a game that emphasized the production of these two tenses, but with enough game complexity to make the activity interesting and also with the potential flexibility for use elsewhere in TESL. There was none available, so I decided to create a game of my own.

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\(^1\)This problem exists because these students are sent to the school, even if they are not interested. This situation is further intensified in the older students (the farther they are from school experience, the more difficult they find the classroom situation).
E. Initial Attempt at Creating a Game

The first game I developed is modelled on 'Snakes and Ladders'. The material includes one pack of cards, a playing board, tokens, dice and an answer sheet. The playing procedure is simple. In turn each student takes a card, reads the statement aloud, filling in the blank with either the simple present or the present continuous tense, and checks the answer. If the student is correct, he stays where he is on the board, unless he is at the foot of the ladder in which case he goes up it. If he is incorrect, he goes back to the end of the snake that he is on. The student is always 'punished' for an error because he is expected to know the answer. He is occasionally rewarded (by chance) for a correct answer to make the game a bit more interesting.

I tried the game with my students and they enjoyed it. Although the game was relatively satisfactory, there were a number of areas where improvement was called for: a) penalties and rewards - In this game they are completely arbitrary. Perhaps a controlled penalty or reward would be better? b) task differentiation - Here no differentiation is made between statements, questions or tag endings. c) remedial work - The game provides no opportunity to (re)-learn a concept not already understood. d) participation - After the student has taken his turn, there is no way for him to participate in the game until his next turn (except by watching). e) design of game - It is not systematically designed with a controlled environment for didactic purposes. f) basic approach - Although a game format is used, the approach is still basically aural-oral, i.e. the repetition of a structure until (hopefully) it is internalized. The aural-oral approach is the
basic method used in the standard school programme and it has not proved highly successful. Therefore, the new game should try to use another approach based on the cognitive code theory of learning, that is, giving the student a conceptual model on which to build rather than giving the student many examples and depending on him to extrapolate the underlying model (aural-oral). This explicit cognitive code method appears on the basis of recent research to be slightly more effective with adults than the implicit oral-aural method (Oskarsson 1973).

"..... the overall results seem to permit the general conclusion that adult learners acquire grammatical competence in a foreign language better by a cognitive method than by a method built exclusively on habit-forming principles" (Oskarsson 1973, p. 261).

"What we must not do is take for granted that the audio-lingual method, which seemed at one time to hold all the answers, is the method....." (Pearce 1975, p. 49).

"Chomsky reiterates that the creative aspect of language is quite incompatible with the idea that language is a habit structure. Habit structure cannot be innovative; yet language is innovative. He says that the stimulus-response method of teaching language is unprincipled—that it is not based on an understanding of the nature of language, which he says is based on abstract formal principles and operations of a complex kind" (Pearce 1975, p. 50).

C. Proposed Solution

This thesis represents an attempt to develop a game which has greater complexity, includes a remedial program, introduces greater control and is validated on a sample of the population. This game is intended to have multiple objectives.

It should provide:  
a) practice in discriminating between the simple present and present continuous tenses;

b) practice in discriminating between the different uses of the present continuous and simple present;

c) practice in reading comprehension;

d) practice in listening comprehension;

e) practice in reading orally.
In other words, it attempts to link together both the oral and written forms of the two tenses. This game is also to be completely student centered, so that teachers needn't be involved in the game.

D. Game Description

1) Structures

There will be three levels of difficulty in the game based on:

a) experience with students' difficulties of the structures, and,
b) degree of usage of the structures.

The easiest level involves statements, the medium level, questions and the most difficult, tag endings. See Figure 2.

FIGURE 2

Categories of Sentence Structures in the Game

<table>
<thead>
<tr>
<th></th>
<th>Simple Present</th>
<th>Present Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement - Neg.</td>
<td>He doesn't write every day.</td>
<td>He isn't writing now.</td>
</tr>
<tr>
<td></td>
<td>He writes every day.</td>
<td>He's writing now.</td>
</tr>
<tr>
<td>- Pos.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question - Neg.</td>
<td>Doesn't he write every day?</td>
<td>Isn't he writing now?</td>
</tr>
<tr>
<td>- Pos.</td>
<td>Does he write every day?</td>
<td>Is he writing now?</td>
</tr>
<tr>
<td>Tag Ending - Neg.</td>
<td>He doesn't write every day, does he?</td>
<td>He isn't writing now, is he?</td>
</tr>
<tr>
<td></td>
<td>He writes every day, doesn't he?</td>
<td>He's writing now, isn't he?</td>
</tr>
<tr>
<td>- Pos.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thus, there will be twelve basic structures included in the game. Samples of items which require negative or positive statements are presented in Figure 3. Figure 4 presents samples of negative and positive questions and Figure 5 presents samples of negative and positive tag endings.
FIGURE 3

Sample of Items which require Statements

a. "What's the weather like around here in the winter?" asked the tourist from Europe.
   "Not too bad," answered the Canadian, "But it (to snow) a lot."

b. "Do you like flowers?"
   "Oh, yes. But we don't see them too often during the winter."
   "True. Flowers (not/to grow) well during the winter."

c. Harry meets Jack in the elevator early Monday morning.
   "Why are you here so early, Jack?"
   "I'm here because I like my work," Jack replies. "I (to work) hard all the time."

d. Question: Do you know how to get ten Montrealers into a Volkswagen?
   Answer: Tell them the Volkswagen (to leave) Toronto.

FIGURE 4

Sample of Items which require Questions

a. Doug knocks at the bathroom door. He calls to his wife, "Are you taking a bath?"
   "No," she answers. "I'm combing my hair. (not/to know) I take a bath only after you leave for work."

b. Bill goes to the same tavern each day for a quart or two or three. The same policeman is always at the same corner where the tavern is located. One day he stops Bill and asks him: "(to go) to the same tavern every day for lunch?"

c. Tom calls his girlfriend to make a date. He says to her: "What (to do) tomorrow?"

d. Mary sees her friend Ann standing at the corner of Peel and Pine. She knows Ann lives in Senneville. She says to Ann: "What (to do) here? Don't you live in Senneville?"
FIGURE 5

Sample of Items which require Tag Endings

a. You _____ (to need) to buy a 12 lb. roast to serve 20 people, _____ you?

b. Jim knocks at the bathroom door. He calls to his wife: "Are you taking a bath?"
   "No, I'm brushing my teeth," she answers. "You _____ (to know) I take a bath only after you leave for work, _____ you?"

c. Tom says: "My plane for Toronto leaves at 11:00, so I should leave here by 10:15." Dick answers: "You _____ (to leave) before 10:15, _____ you? It takes at least an hour to get to the airport."

d. Tom is planning a trip out west. He is telling his friend, Harry, about it. Tom says: "I want to see the Stampede and the Rockies." Harry says: "You _____ (to want) to see Banff also, _____ you?"

The discriminations which the students must make are based on the outline of the use of tenses adopted from Hayden (1956). See Figure 6.

FIGURE 6

Uses of the Simple Present and Present Continuous Tenses as Presented in this Game

Simple-Present

1. perception, feeling, state
e.g. It tastes good.

2. habitual action, at intervals
e.g. I eat breakfast every morning.

3. relatively permanent truth
e) general truth
e.g. Water freezes at 32°F.
b) personal situation (time unimportant)
e.g. He plays the violin well.

4. standard procedure
e.g. Then you add the eggs to the batter.
Present Continuous

1. activity in actual progress (now)
   e.g. I'm washing the dishes.

2. activity not necessarily taking place at moment of speaking, but continuing over a period of time with a beginning and an end.
   e.g. The organization is collecting funds this month.

3. future activity (time usually indicated)
   e.g. He is giving a party next week.

The use of the simple present tense for the future is left out as the present continuous can always be used in this case. Thus there is no discrimination problem. There is an additional category — standard procedure or commentary — which isn't covered well by any of Hayden's categories. Finally, one category — a relatively permanent truth — has been subdivided into two classifications; a) general truth, and b) personal situation. See Figure 6.

At each difficulty level, there is a decision point to test the student on the structure being practiced; the player follows a short remedial program if he cannot meet the requirements as stated (cf. Mitchell 1973). See Figure 7 for an illustration of the remedial program followed if the player fails the initial criterion test for tag endings.

FIGURE 7

Sample of items for Remedial Sequence for Tag Endings

These questions will help you to understand the difference between the 'simple present' (I eat every day) and the present continuous (I am eating now). Each time it's your turn take the top two cards from the envelope, read the two examples on each and then write the proper form of the verb in the third sentence, plus your reason for choosing the tense you did. Check your answers with the ones on the back of the card.
Side 1  a. Example 1: You aren't driving to Halifax today, are you?

of card

Example 2: He doesn't enjoy typing very much, does he?

They _____ (not/to travel) very much, _____ they?

Reason

Side 2

Answer: They don't travel very much, do they?

of card

- personal situation, relatively permanent, time unimportant.

Side 1  b. Example 1: He doesn't enjoy football very much, does he?

of card

Example 2: She isn't visiting her mother today, is she?

They _____ (not/to leave) right now, _____ they?

Reason

Side 2

Answer: They aren't leaving right now, are they?

of card

- activity in actual progress.

There are also two optional fast routes if the player meets the
requirements stated on the board at the beginning of the routes. One is a bonus
reward for a correct answer; the other is a shorter route than the regular one but
it consists of only tag ending questions, the hardest. See Figure 8 for a sche-
matic diagram of the playing board. The letter code is used to indicate the colour
of the square on the playing board.

11) Presentation Medium

The game board is approximately 28 inches long and 18 inches wide.

There are 29 green spaces, 23 yellow spaces, 10 red spaces and 6 chance spaces;
as well as 3 sets of 4 remedial spaces, and 1 fast route of 4 spaces. (See sche-
matic diagram of playing board, Figure 8.) There are 26 red cards (each card is
one language task), 36 yellow cards, 44 green cards and 12 chance cards (these are
FIGURE 8

Schematic Diagram of Playing Board

G = green = statement
Y = yellow = question
R = red = tag ending
☐ = criterion test
ΟΟΟΟΟΟ = remedial program
>< = decision point for fast routes
C = chance

[Diagram of the playing board with various colored squares and arrows indicating the flow of the game.]
arbitrary rewards or penalties). Each remedial program (there are three) consists of 8 cards; each card having two examples and a language task, similar to the examples on it. The answer is on the back of the card.

The game is designed so that each player should have completed approximately 3 statements, 7 questions and 5 tag ending questions by the end of the game, if he or she follows the regular route, i.e. does not do any remedial programs or take the fast route. However, because of the challenge sequence, the student will have heard and thought about approximately another 24 statements, 21 questions and 15 tag ending questions (with 4 players).

11) Method of Play

The players use a die to control advancement along the path from 'START' to 'HOLE'. Each turn the player is required to read aloud and complete an item which is controlled by the square on which he has landed. See Appendix A for game rules. Other players must either agree with or challenge the player's answer before the contingent stimulus is presented to the player. If he is correct, this consists of advancing along the route to 'HOLE'. For an incorrect response, the player does not advance and will not be permitted to move until he has performed correctly on a subsequent turn(s).

14) System of Payoffs

The size of the payoff for completing the task correctly is commensurate with the difficulty of the task. (See Figure 9 for a payoff table), and is a move of a specified number of steps forward. There is no penalty per se; the penalty is a lack of reward.
FIGURE 9
Payoff System for Game

<table>
<thead>
<tr>
<th></th>
<th>correct</th>
<th>incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>+ 3 steps</td>
<td>Do not move. On your next turn, take a card from the same pile as before. If you complete it correctly, take your reward. You may not leave the square you are on until you complete a card correctly.</td>
</tr>
<tr>
<td>Yellow</td>
<td>+ 2 steps</td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>+ 1 step</td>
<td></td>
</tr>
<tr>
<td>Challenger</td>
<td>stay where you are</td>
<td>- 1 step</td>
</tr>
</tbody>
</table>

Tag endings are idiolectic. They are also the most difficult for the student to learn. Therefore he will receive a payoff of +1 step if he is correct. The question structure is based on the statement and is of medium difficulty. Accordingly, a correct response is followed by advancing +2 steps. Statements are the basic language structure and the easiest, so only +1 step is granted.

If the student is incorrect, he stays where he is until he completes a card correctly during his next turn. This provides the student with additional practice in the structure which he finds difficult, and he may stay there for several turns.

v) Challenges

To keep all the players involved in the game, there is a challenge sequence in the game. Each turn, after the player gives his answer, all the other players (on an individual basis) must either agree with or question the player's answer. If a player disagrees with, i.e. challenges, he or she must explain why the other tense should be used. The challenger receives no reward for challenging correctly, and in order to keep players from challenging indiscriminantly, there is
a small 'penalty' (-1 step) for challenging incorrectly. Finally, the players check the answer on the answer sheet, and take their reward or punishment.
CHAPTER III

1. Formulation of Hypotheses

a. Theoretical Hypotheses

TH₁ - If English (as a second language) students play a didactic game (based on a basic English tense differentiation), then these students will show an improvement on the basis of an achievement test, greater than that of control students who do not play the game.

TH₂ - The more often English (as a second language) students play the game, the greater their improvement - as demonstrated by an achievement test.

b. Operational Hypotheses

OH₁ - If English (as a second language) students play the didactic game, Stoplight, during a 3 week period; the difference of the means of their pre- and post-test scores will be greater than the difference of the means of the pre- and post-test scores of control subjects from the same population who do not play this didactic game; their G ratio will also be greater than the G ratio of the control subjects.

OH₂ - Students who play the didactic game, Stoplight, 3 times, will achieve a greater difference between means of their pre- and post-test scores than those who play it only once; they will also achieve a greater G ratio than those who play the game only once.
2. Population

The subjects were 85 French-speaking adults employed by the Federal government. They were all attending compulsory English language courses. They were divided into groups (classes) on the basis of a placement test administered to all students entering the course. There were 46 students in the control group; 40 students in the experimental group.

3. Evaluation Design

All the subjects were pre-tested at the beginning of the 3 week session, half of each class completing either Form A or Form B of the Tense Differentiation Test. (See the section on Measuring Devices.) During the next 3 weeks all the students continued to attend regular classes.

The subjects were divided by class into a control group and an experimental group. The experimental group was further subdivided into 2 groups. Each group consisted of 2 or more TESL classes.

\[ E_1 \quad (1 \text{ play}) \quad n=18 \quad (2 \text{ classes}) \]
\[ E_2 \quad (3 \text{ plays}) \quad n=22 \quad (3 \text{ classes}) \]
\[ C \quad \text{(control)} \quad n=46 \quad (6 \text{ classes}) \]

\( E_1 \) - An experimental group of 18 subjects who were given a regular classroom presentation of the uses and forms of the present continuous and simple present tenses and who has also played the didactic game once. The complete lesson (presentation and game) took approximately 2 hours.

\( E_2 \) - An experimental group of 22 subjects who were given a standard classroom presentation of the uses and forms of the present continuous and simple present tenses and who played the didactic game 3 times. The complete lesson took approximately 5-6 hours.
Originally, $E_1$ was to play the game 3 times and $E_2$ 6 times. The game was played only once by the 18 subjects in $E_1$ and only 3 times by the 22 subjects in $E_2$, because the teachers participating in the experiment felt they didn’t have enough time in a 3 week period to meet their other teaching objectives, and play the game 6 times.

C - It was intended that the control group of 46 students would be given a standard lesson which would include a presentation of the uses and forms of the present continuous and simple present tenses, some exercises, plus a short contextualization period, i.e. attempting to use the two tenses in imaginary, but real-life situations. This combined lesson was to take approximately 2-3 hours.

However, one of the teachers participating in the experiment, with a group of 28 control subjects, upon seeing the results of the pre-test, felt it necessary to develop a program of remedial work for them. This program included a presentation of the uses of the simple present and present continuous tenses plus:

1) drill cards - The students worked in pairs drilling each other orally, and then wrote out the sentences, having their partner check them.

2) ‘Baseball Game’ - A form of drill where the student wins runs for a correct answer, i.e. The student is given a sentence and told to make it negative or interrogative.

3) flip charts - Similar to (1), but done orally as a class.

4) written exercises - This exercise was done individually, but the correction was done orally - with a challenge and explanation sequence similar to the one in the game.

5) other written and oral exercises.
vi) The teacher told the students jokes which employed the two tenses.

This lesson took approximately 10 hours.

Thus the experiment was redesigned:

\[ E_1 \text{ (1 play)} \ n=18 \ (2 \ classes) \]
\[ E_2 \text{ (3 plays)} \ n=22 \ (3 \ classes) \]
\[ C_1 \text{ (control)} \ n=18 \ (3 \ classes) \]
\[ G_2 \text{ (remedial)} n=28 \ (3 \ classes) \]

At the end of the 3 week period all the control and experimental subjects were retested, half of each class completing either Form A or Form B. (Students who did Form A at the beginning did Form B at the end, and vice versa.)

The evaluation design is schematically presented below.

**Evaluation Design**

<table>
<thead>
<tr>
<th>Group</th>
<th>Day 1</th>
<th>Days 2-14</th>
<th>Day 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>E_1 - 1 play</td>
<td>Pre-test</td>
<td>DG</td>
<td>Post-test</td>
</tr>
<tr>
<td>E_2 - 3 plays</td>
<td>Pre-test</td>
<td>3XDQ</td>
<td>Post-test</td>
</tr>
<tr>
<td>C_1 - control</td>
<td>Pre-test</td>
<td>TA</td>
<td>Post-test</td>
</tr>
<tr>
<td>G_2 - remedial</td>
<td>Pre-test</td>
<td>EM</td>
<td>Post-test</td>
</tr>
</tbody>
</table>

DG designates didactic game.
TA designates traditional approach, that is, they followed the regular program on days 2-14. For some, this would have included the standard units on the simple present and present continuous.
EM designates remedial program.
4. Measuring Devices

Tense Differentiation Tests - Forms A and B

A pre-test and post-test were administered. See Appendix B. Each test contained 48 items. In order to complete each item, the student had to insert the proper form of either the simple present tense or the present continuous tense. The 48 items which were randomly ordered on the two test forms included examples of all the twelve (12) forms of the two tenses as well as the eight (8) uses of the 2 tenses. All the items were chosen by the author from the following books:


Dixson, R.J., Regents and CEC English Workbook, Bk. 1, Centre Educatif et Culturel, Inc., Montreal 1945, p. 9, 10, 16, 27, 28, 30, 36, 37, 40, 60, 61, 62, 72, 73, 75, 76.


The reliability and validity of the McAlpine Tense Differentiation Test will be discussed in Chapter IV.

Although playing the game requires discrimination with both visual and oral senses, e.g. the student reads his own answers, but listens to the other
5. Statistical Analysis

The means of pre- and post-test scores were submitted to a ‘t’ test, in-order to determine whether there was a difference between the groups. ‘G’ ratios were also analysed and compared to determine if the improvement was greater in one group than another. Null hypothesis was projected if $p < .05$.

On each test form there were 48 items. Each correct response (1 per item) received one point.

The scores on the pre- and post-tests were computed and the means for each group calculated. See Table 1. Fifteen sets of comparisons were executed using the test for the significance of the difference between two means for independent samples (hereafter referred to as SODIS) following the steps outlined in Ferguson (1959, p. 167-169):

1) comparison of the difference of pre-test means between
   a) $(E_1 + E_2)$ and $(C_1 + C_2)$
   b) $E_1$ and $E_2$
   c) $E_2$ and $C_2$
   d) $E_1$ and $C_1$
   e) $E_1$ and $C_2$
   f) $E_2$ and $C_1$
   g) $C_1$ and $C_2$

2) comparison of post-test means between
   a) $(E_1 + E_2)$ and $(C_1 + C_2)$
   b) $E_1$ and $E_2$
   c) $E_2$ and $C_2$
d) $E_1$ and $C_1$
e
3) comparison of means of Test Form A and Test Form B

Six sets of comparisons were executed using the test for the
significance of the difference between two means for corre-
lated samples, hereafter referred to as SODCS, following the
steps outlined in Ferguson (1959, p. 169-171);

b) $E_2$

c) $C_1$

d) $C_2$

e) $(E_1$ and $E_2$)

4) comparison of the difference of pre- and post-test means of

f) $(C_1$ and $C_2$)

The McGuigan 'G' ratio was computed for

5) a) $E_1$

b) $E_2$

c) $C_1$

d) $C_2$

The Kuder Richardson reliability test was computed for

6) a) Test form A

b) Test form B
CHAPTER IV

1. Results

A. Comparison of Experimental and Control Groups (Pre-test Scores)

   a) $(E_1 + E_2)$ and $(C_1 + C_2)$

   Although it was assumed that the groups were matched as all the classes were formed solely on the basis of placement test score, the experimental pre-test scores seemed to vary to a considerable degree. Therefore, the means of the control subjects $(C_1 + C_2)$ and the experimental subjects $(E_1 + E_2)$ were submitted to a $t$ test.

   Group | Mean Score on Pre-test
   ------|------------------------
   $C_1 + C_2$ | 27.5
   $E_1 + E_2$ | 30.8

   Using SODIS, '$t$' was calculated as 1.569 which is not statistically significant at .05. (Critical Values of '$t$', Ferguson, p. 406). Therefore it was concluded that the control group and the experimental group were matched on the basis of their pre-test scores.

   b) $E_1$ and $E_2$

   The pre-test means of $E_1 + E_2$ were as follows:

   Group | Mean Score on Pre-test
   ------|------------------------
   $E_1$ | 31.8
   $E_2$ | 29.9

   The scores were submitted to a '$t$' test using SODIS. '$t$' was calculated as 1.302 which is not statistically significant at .05. Therefore it was concluded that $E_1$ and $E_2$ were matched on the basis of pre-test scores.

   c) $E_2$ and $C_2$

   The pre-test means of $E_2$ and $C_2$ were as follows:

   Group | Mean Score on Pre-test
   ------|------------------------
   $E_2$ | 29.9
   $C_2$ | 24.4

   Using SODIS, '$t$' was calculated as 2.137 which is statistically significant at .05. Therefore it was concluded that $E_2$ and $C_2$ were not matched on the basis of pre-test scores.
d) $E_1$ and $C_1$

The pre-test means of $E_1$ and $C_1$ were as follows:

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score on Pre-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>$E_1$</td>
<td>31.8</td>
</tr>
<tr>
<td>$C_1$</td>
<td>32.5</td>
</tr>
</tbody>
</table>

Using SODIS, 't' was calculated as 0.217, which is not statistically significant at .05. Therefore it was concluded that $E_1$ and $C_1$ were matched on the basis of pre-test scores.

e) $E_1$ and $C_2$

The pre-test means of $E_1$ and $C_2$ were compared as follows:

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score on Pre-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>$E_2$</td>
<td>31.8</td>
</tr>
<tr>
<td>$C_2$</td>
<td>24.4</td>
</tr>
</tbody>
</table>

Using SODIS, 't' was calculated to be 2.594, which is statistically significant at .05. Therefore it was concluded that $E_1$ and $C_2$ were not matched on the basis of pre-test scores.

f) $E_2$ and $C_1$

The pre-test means for $E_2$ and $C_1$ were as follows:

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score on Pre-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>$E_2$</td>
<td>31.8</td>
</tr>
<tr>
<td>$C_1$</td>
<td>32.5</td>
</tr>
</tbody>
</table>

Using SODIS, 't' was calculated as 0.94, which is not statistically significant at .05. Therefore it was concluded that $E_2$ and $C_1$ were matched on the basis of pre-test scores.

g) $C_1$ and $C_2$

The pre-test means of $C_1$ and $C_2$ were computed as follows:

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score on Pre-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>$C_1$</td>
<td>32.5</td>
</tr>
<tr>
<td>$C_2$</td>
<td>24.4</td>
</tr>
</tbody>
</table>
Using SODIS, 't' was calculated as 2.597, which is statistically significant at .05. Therefore it was concluded that C₁ and C₂ were not matched on the basis of pre-test scores.

B. Comparison of Experimental and Control Groups (Post-test Scores)

a) \( (E₁ + E₂) \) and \( (C₁ + C₂) \)

The post-test means for \( (E₁ + E₂) \) and \( (C₁ + C₂) \) were:

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score on Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>( E₁ + E₂ )</td>
<td>36.3</td>
</tr>
<tr>
<td>( C₁ + C₂ )</td>
<td>34.3</td>
</tr>
</tbody>
</table>

Using SODIS, 't' was calculated as 1.092, which is not statistically significant at .05. Therefore it was concluded that \( (E₁ + E₂) \) and \( (C₁ + C₂) \) were matched on the basis of post-test scores.

b) E₁ and E₂

The post-test means for E₁ and E₂ were:

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score on Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>E₁</td>
<td>35.1</td>
</tr>
<tr>
<td>E₂</td>
<td>37.2</td>
</tr>
</tbody>
</table>

Using SODIS, 't' was calculated as 0.819, which is not statistically significant at .05. Therefore it was concluded that E₁ and E₂ were matched on the basis of post-test scores.

c) E₂ and C₂

The post-test means for E₂ and C₂ were:

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score on Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>E₂</td>
<td>37.2</td>
</tr>
<tr>
<td>C₂</td>
<td>35.0</td>
</tr>
</tbody>
</table>

Using SODIS, 't' was calculated as 1.382 which is not statistically significant at .05. Therefore it was concluded that E₂ and C₂ were matched on the
basis of post-test scores.

d) $E_1$ and $C_1$

The post-test means for $E_1$ and $C_1$ were:

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score on Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>$E_1$</td>
<td>35.1</td>
</tr>
<tr>
<td>$C_1$</td>
<td>34.7</td>
</tr>
</tbody>
</table>

Using SODIS, 't' was calculated as 0.087, which is not statistically significant at .05. Therefore it was concluded that $E_1$ and $C_1$ were matched on the basis of post-test scores.

e) $E_1$ and $C_2$

The post-test means for $E_1$ and $C_2$ were:

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score on Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>$E_1$</td>
<td>35.1</td>
</tr>
<tr>
<td>$C_2$</td>
<td>34.0</td>
</tr>
</tbody>
</table>

Using SODIS, 't' was calculated as 0.677, which is not statistically significant at .05. Therefore it was concluded that $E_1$ and $C_2$ were matched on the basis of post-test scores.

f) $E_2$ and $C_1$

The post-test means for $E_2$ and $C_1$ were:

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score on Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>$E_2$</td>
<td>37.2</td>
</tr>
<tr>
<td>$C_1$</td>
<td>34.7</td>
</tr>
</tbody>
</table>

Using SODIS, 't' was calculated as 0.739, which is not statistically significant at .05. Therefore it was concluded that $E_2$ and $C_1$ were matched on the basis of post-test scores.

g) $C_1$ and $C_2$

The post-test means for $C_1$ and $C_2$ were:
Group  Mean Score on Post-test
\[ \begin{align*}
C_1 & \quad 34.7 \\
C_2 & \quad 34.0
\end{align*} \]

Using SODIS, \( t \) was calculated as 0.238, which is not statistically significant at .05. Therefore it was concluded that \( C_1 \) and \( C_2 \) were matched on the basis of the post-test scores.

C. Comparison of the Difference of Pre- and Post-test Mean Scores

1) Tests of the Significance of the Difference between Two Means

**TABLE 1**

Comparison of Pre- and Post-test Mean Scores for \( E_1, E_2, C_1, C_2 \)

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Difference</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( E_1 ) 1 play</td>
<td>31.8</td>
<td>35.1</td>
<td>+3.278</td>
<td>2.359</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>( E_2 ) 3 plays</td>
<td>29.9</td>
<td>37.2</td>
<td>+7.318</td>
<td>4.784</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>( C_1 ) control</td>
<td>32.5</td>
<td>34.7</td>
<td>+2.223</td>
<td>0.978</td>
<td>&gt;.05</td>
</tr>
<tr>
<td>( C_2 )</td>
<td>24.4</td>
<td>34.0</td>
<td>+9.642</td>
<td>5.210</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

* statistically significant
a) $E_1$

The pre- and post-test means for $E_1$ were as follows:

- Pre-test Mean Score: 31.8
- Post-test Mean Score: 35.1

Using a test for the significance of the difference between two means for correlated samples (SODCS), $t'$ was calculated as 2.359, which is statistically significant at .05. (Critical Values of $t$, Ferguson, p. 406). Therefore it was concluded that an increase had occurred.

b) $E_2$

The pre- and post-test means for $E_2$ were as follows:

- Pre-test Mean Score: 29.9
- Post-test Mean Score: 37.2

Using SODCS, $t'$ was calculated as 4.784, which is statistically significant at .001. Therefore it was concluded that an increase had occurred.

c) $C_1$

The pre- and post-test means for $C_1$ were as follows:

- Pre-test Mean Score: 32.5
- Post-test Mean Score: 34.7

Using SODCS, $t'$ was calculated as 0.978, which is not statistically significant at .05. Therefore it was concluded that no increase had occurred.

d) $C_2$

The pre- and post-test means for $C_2$ were as follows:

- Pre-test Mean Score: 24.4
- Post-test Mean Score: 34.0

Using SODCS, $t'$ was calculated as 5.210 which is statistically significant at .001. Therefore it was concluded that an increase had occurred.
e) \((E_1 + E_2)\)

The pre- and post-test means for \((E_1 + E_2)\) were:

Pre-test Mean Score \(39.8\)

Post-test Mean Score \(36.3\)

Using SODCS, \(t\) was calculated as \(5.363\), which is statistically significant at .001. Therefore it was concluded that an increase had occurred.

f) \((C_1 + C_2)\)

The pre- and post-test means for \((C_1 + C_2)\) were:

Pre-test Mean Score \(27.5\)

Post-test Mean Score \(34.3\)

Using SODCS, \(t\) was calculated as \(4.428\), which is statistically significant at .001. Therefore it was concluded that an increase had occurred.

ii) The Mcguigan \(G\) Ratio

This ratio compares real gain to possible gain. (McGuigan & Peter's 1965.)

The G ratio compares how much students learned in relation to how much they could learn (as shown by the test). If we let \(K\)=possible score, \(T_1\)=pre-test score, and \(T_2\)=post-test score, then we can write:

a) gain \(= T_2 - T_1\)

b) possible gain \(= K - T_1\)

c) and hence, \(G = \frac{T_2 - T_1}{K - T_1}\)

This ratio is useful because in its calculation it takes into account the fact that a person who has a high pre-test score cannot make as great a gain in raw score on a post-test as a person who scores low on a pre-test score, and yet the person with the higher score has 'learned' more, i.e., Student A, who scores 40/50 on a pre-test and 45/50 on a post-test has only increased his raw score by 5 points.
whereas student B, who scores 20/50 on a pre-test and 30/50 on a post-test increases his raw score by 10. However, Student A has learned half of what remained to be learned and Student B has only learned a third. McGuigan considers 0.5 as an acceptable G for publication; the higher the ratio, the better. (There is nothing comparable to p.)

TABLE 2.

Comparison of Pre- and Post-test scores by G Ratio for E₁, E₂, C₁, C₂

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Possible Score</th>
<th>Pre-test Mean</th>
<th>Post-test Mean</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>E₁</td>
<td>18</td>
<td>48</td>
<td>31.8</td>
<td>35.1</td>
<td>.202</td>
</tr>
<tr>
<td>E₂</td>
<td>22</td>
<td>48</td>
<td>29.9</td>
<td>37.2</td>
<td>.404</td>
</tr>
<tr>
<td>C₁</td>
<td>18</td>
<td>48</td>
<td>32.5</td>
<td>34.7</td>
<td>.143</td>
</tr>
<tr>
<td>C₂</td>
<td>28</td>
<td>48</td>
<td>24.4</td>
<td>34.0</td>
<td>.403</td>
</tr>
</tbody>
</table>

The McGuigan G ratio was determined as noted in Table 2. E₁ scored G=0.2, a limited gain, but higher than C₁, which scored G=0.1. E₂ scored G=0.4, twice the rate of E₁, and a modest gain within McGuigan's framework. C₂ also scored G=0.4.

D. Hypotheses 1 and 2

1) H₁

The group, C₂, was not matched with the others on the pre-test, so it will not be included in the following, but will be considered separately.

H₁ stated that same players would show a greater difference between means than none same players, also that they would achieve a greater G. It was concluded that H₁ could be accepted based upon the fact that:

a) The difference between means for E₁ and E₂ was greater than the difference between means for C₁.
b) Both E₁ and E₂ showed a statistically significant increase in their post-test scores, while E₁ showed no statistically significant increase in its post-test score.

c) The G score by E₁ and E₂ was higher than the G of C₁. Although H₁ is accepted, the results provide only weak support for the efficacy of the game.

E₂ predicted that the group which played the didactic game 3 times would achieve a greater difference between means, and also a greater G than the group which played the game only once. It was concluded that H₂ might be accepted based on the fact that:

The G ratio in E₂ was twice as much as the G ratio in E₁.

However, because there was no significance of the difference between means for E₁ and E₂, we conclude that playing the game 3 times was not more effective than playing it once.

E. Comparison of Test Form A and Test Form B

i) Test Validation

The measuring devices were developed by the author such that they should be of equal difficulty. To confirm this, the mean number of errors of all the test scores of Test Form A and the mean number of errors of all the test scores of Test Form B were submitted to a 't' test.

<table>
<thead>
<tr>
<th>Test Form A</th>
<th>Mean Number of Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Form B</th>
<th>Mean Number of Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.5</td>
<td></td>
</tr>
</tbody>
</table>

Using SODIS, 't' was calculated as 1.544, which is not statistically significant at .05. (Critical Values of t, Ferguson, p. 406). Therefore it was concluded that the two tests were of equal difficulty.
11) Test Reliability

Based on the 48 items in each test form, Kuder-Richardson reliability was computed. (Tuckman 1972, p. 139). The resulting $r_{K-R}$ was

- 0.896 for Test Form A,
- 0.907 for Test Form B.

Both of these results are acceptably reliable even for commercially available standardized tests.
CHAPTER V

1. Conclusions

It would appear that the use of the didactic game either for one or three plays improved the students' understanding and use of the two tenses, present continuous and simple present; whereas the traditional approach yielded no significant improvement. The remedial program also improved the students' use of the two tenses. However, it is interesting to note that the remedial program which took approximately 10 hours of class-time increased the students' post-test scores by an average of 9.6 points; whereas the game played three times, took only 5 to 6 hours and increased the students' post-test mean score by 7.3. Since both groups had the same G of 0.4, it would appear, although it isn't substantiated, that the game is a more effective teaching tool than the more time consuming remedial program. However, it could also be that the amount learned is a function of the time spent learning, regardless of the method.

It is also interesting to speculate on the effect of playing the game six times as originally planned (but which was not practical). E1, which played the game once showed an improvement of 3.3 points and a G of 0.2; E2 which played the game three times showed an improvement of 7.3 points and a G of 0.4. It is probable that the improvement of students after playing the game six times would be significantly greater than the improvement in any other group. This is an area for further research.

In considering the results of the use of this didactic game, one must also consider its effect on the students who play it. Overall, they seemed to enjoy it and found it a nice change from the usual class work. See 2. Student
Comments for players' reactions to the game. The comments from the students were solicited after playing the game. They were obtained by the teacher who simply asked the students who were interested to write down any comments they had concerning the game. Of 15 comments received, the following seem representative.

2. Student Comments

Here are some student comments which emphasize the interest students take in this sort of activity:

1. 'I think it's better game than drill. It's more entertaining. We feel more interested to follow the game.'

2. 'The value of the method we have used during the last week was interesting. It gave us the opportunity to understand in a better way different situation of grammar, by taking the time to think and to look at it. With a group who tried to correct you, frustrated you less than the teacher. The students are at the level than you and in that way you will make an effort to be compare with them. In a certain manner, the rule is better understood and for sure we won't forget the rule. When that test is done seriously is worth for us.'

3. 'I think that we learn more in playing than in drilling or filling sheets. It's more interesting.'

4. 'Valuable Game' - With this kind of game we can say that it requires a constant attention of the player particularly in the challenge. Each players are more confident in their own answers because all of them are forming a group.

The 'formule' of the game is well expressed and everyone can get his goals.
As a challenge, everyone wants to reach the end first and with that they pay attention to everyone and all the time they search for the good answers.

The game rules are well made and I imagine that it required a lot of work to achieve it. So I hope that other students will play it and sure make their own learning profit with it.

5. 'I think that each card that I had to answer was stuck in my mind more than drill.

If you do an error in drill you don't have penalty but in the game you think twice because you want to avoid penalties.'

3. Results Compared with Accepted Views

The results of this experiment compare favourably with the present views of language training specialists:

a) it is difficult to find out anything statistically worthwhile about the comparative value of different methods in a school system due to the large number of uncontrolled variables.

Dr. W.B. Currie expressed this well in a paper delivered at the Conference on Second Language Teaching, May 1975.

Casey's results (comparing audio-lingual and cognitive code methods) reflect the difficulties of finding out anything significant about methods by clinical experimental approaches in schools. It appears that we just cannot plug the holes.

b) there is no one approach to language teaching that is 'best'.

Two recent carefully conducted experiments illustrate this point.

Casey (1968) and Levin (1969) both had equivocal results:

Thus the experiment has not shown that any difference exists between the three teaching methods. (Levin 1969, p. 77).
...Pupils in the experimental group... constructed more complicated oral dialogue than the control group, but in no case was the difference statistically significant. (Casey 1968, p. 36)

As a result of these types of conclusions, there appears to be a return to the 'middle of the road' approach in second language teaching. Educators are attempting to provide a mixture of many different approaches. In such a situation, didactic games used with discretion could be a valuable tool, as their structure provides an opportunity for combining two approaches:

i) cognitive code approach - These games encourage the organization of concepts into a complete system. ii) situational approach - These games provide examples of possible reactions to situations, and b) the opportunity to react to these situations.

4. Implications for Educational Technology

It would appear that there are two basic implications for educational technology:

a) Didactic games can be a useful educational tool and therefore more time and effort should be spent on developing, testing and refining this exciting approach to learning. Science, language (first or second) or geography would be interesting and worthwhile areas in which to develop these games.

b) Educators would do well not to put all their 'eggs into one basket'. Based on recent experiments, it would appear to be more advantageous to improve and upgrade several approaches to learning rather than expend energy on attempting to prove the relatively greater value of one method as compared to another. Perhaps the growing number of educational resource centers
shows a new awareness of this philosophy.

5. Suggestions for Further Research and Development

As well as following up this experiment with a 'mini' experiment; the testing of a group of students who play the game six times, a few changes should be made to the game.

The game should be limited to a maximum of four players. Although I encouraged the participating teachers to do so, some preferred to have only one game with the whole class participating. This decision brought the only negative comment from students, that is, that a large number of players makes the game move too slowly, and thereby limits the number of cards each person does. Students who played the game without the 'assistance' of its creator, occasionally found the spaces (on the board) confusing, i.e. they didn't know whether to stop on the 'stop' space or the instruction space. This problem was created by the design of the board rather than any inherent problem in the progression of the game, and can be easily remedied without changes to the format of the game.

Also, two cards in the game should be changed as they do not use standard English.

As the format of the game is not confined to this particular problem, i.e. differentiating between the simple present and present continuous tenses; it would be interesting and useful to make up different sets of cards comparing perhaps: a) simple past and present perfect; or b) simple past and past continuous.

I would also hope that other users would feel free to modify the game so as to meet their own particular needs.

In conclusion, in the strictest sense, the results provide weak support for the first hypothesis and none for the second hypothesis set forth in this study to the extent that a) students who played the didactic game
showed i) a greater increase in their Tense Differentiation Test scores and ii) a higher G than the control group ($C_1$); and b) students who played the game three times showed i) a non-significant increase in their Tense Differentiation Test scores and ii) a higher G than those who played it only once. It must be remembered that the similarity between all post-test scores suggests that the observed improvement might not be consistent. On the other hand, if all game players had played in small groups as recommended, the observed improvement could well have been significantly greater than the control.
APPENDIX A

Rules for playing STOPLIGHT

- a game for 2-5 players (more people can play, but the game moves more slowly).

The aim of STOPLIGHT is to provide practice in discriminating between and using the following two tenses: the simple present (i.e. I walk) and the present continuous (i.e. I am walking).

Equipment
playing board
1 dice
6 tokens
4 sets of cards - 1 red (pink)
  1 yellow
  1 green
  1 vari-coloured
6 red envelopes with cards inside
6 yellow envelopes with cards inside
6 green envelopes with cards inside
6 pencils

See Notes to the Teacher for a more complete explanation.
Preparation

1) open the board and put the sets of cards in the indicated places.

2) place the tokens on the starting square.

3) each player rolls the dice; the person with the highest number starts, and the play moves to the left.

Method of Play

1) each player in turn rolls the dice and moves the indicated number of steps. More than one player may be on the same step at the same time.

   a) if he lands on a green space, he picks up a green card and reads it aloud, filling in the blank with the verb in the proper tense. Only the simple present tense (I walk to school every day) or the present continuous tense (I am walking to school now) may be used.

   b) if he lands on a yellow space, he picks up a yellow card and proceeds in the same way.

   c) if he lands on a red space, he picks up the red (pink) card and proceeds in the same way.

   d) if he lands on a STOPLIGHT ( 0 ) space, he picks up a STOPLIGHT card and follows the directions on it.

   e) if he lands on a STOP space, he reads the instructions on it and follows them. *** no one may go over a STOP space. (If he rolls 6 and a STOP space is only 4 steps ahead, the player may only move 4 steps.)

   f) if he is following a detour, he completes two cards each turn for four turns. He reads his cards to the other players. They may disagree with his answer, but they must explain why. Then he checks his answers (and those of the others) with those on the back of the cards.

2) If a player lands on a red, yellow or green square, he takes a card and reads it aloud, completing it with the proper tense of the verb. The other players listen and must either agree or disagree with him. If they disagree with him, they must give their reason for wanting to use the other tense. Every player must state his position. Then one of the players checks the answer on the answer sheet.
- if the challengers are incorrect, they must move back one space.

- if the challengers are correct, they stay where they are.

- if the player is incorrect, he stays where he is until his next turn and tries a card of the same colour again. He must stay on that space until he gets a card correct.

- if the player is correct, he moves forward the number of spaces indicated on the following chart.

<table>
<thead>
<tr>
<th></th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED</td>
<td>move forward three spaces</td>
<td>Do not move. On your next turn, take a card from the same pile as before. If you are correct, take your reward. You may not leave the square you are on until you complete a card.</td>
</tr>
<tr>
<td>YELLOW</td>
<td>move forward two spaces</td>
<td></td>
</tr>
<tr>
<td>GREEN</td>
<td>move forward one space</td>
<td></td>
</tr>
<tr>
<td>CHALLENGER</td>
<td>stay where you are</td>
<td>Move back one square</td>
</tr>
</tbody>
</table>

This is the end of the player's turn.

He returns the card(s) to the bottom of the pack (unless otherwise stated).

3) First player HOME wins.

4) Continue the game until all the players finish. Players who are already home may continue to challenge. If they challenge incorrectly, they receive no penalty.
APPENDIX B
Test Form A

Fill in the blanks in the following sentences using either the simple present (e.g., I write a letter every day) or the present continuous (e.g., I'm writing a letter now). Do not use any other tense. You can have as much time as you want to complete the test.

E.g. Study the examples:

Pierre knows (to know) all of the new words very well.
John is flying (not to travel) to England tomorrow.

1. He _______ (to seem) to be very busy, _______ he?
2. _______ you _______ (not to need) my identification?
3. _______ I _______ (to fill) out the form first?
4. _______ you _______ (to make) many mistakes in spelling?
5. _______ this book _______ (not to belong) to her?
6. _______ the sun _______ (not to give) us light?
7. _______ birds _______ (to fly) south in the winter?
8. _______ the children _______ (not to sleep) for two hours every afternoon?
9. She _______ (not to smoke) cigarettes, _______ she?
10. Water and oil _______ (not to mix).
11. _______ you _______ (not to remember) the name of that book?
12. _______ she usually _______ (to sit) in the third row?
13. _______ you _______ (to want) cream and sugar in your coffee?
14. If you _______ (not to understand), tell me.
15. Then you _______ (to wash) your hands.
16. Mr. Walker _______ (not to teach) English or Mathematics.
17. The waitress always _______ (to wash) the dishes carefully, _______ she?
18. The U.S. ________ (to consist) of fifty-two states.
19. We ________ (not/to listen) to the radio every night.
20. I ________ (to go) to the office every day.
21. The teacher ________ (to wish) to speak to you.
22. These exercises ________ (not/to seem) very difficult.
23. He ________ (to speak) several foreign languages.
24. They ________ (not/to hold) the dance tonight, ________ they?
25. Mr. Reese ________ (to go) on a trip this weekend, ________ he?
26. The birds ________ (to fly) south for the winter, ________ they?
27. The men ________ (to come) into the room now, ________ they?
28. He ________ (not/to do) very well in his English, ________ he?
29. ________ the instructor ________ (not/to give) the book to John this afternoon?
30. We ________ (not/to do) exercise thirteen right now, ________ we?
31. ________ you ________ (to read) an interesting book?
32. ________ they ________ (to eat)
33. ________ Mr. Borden ________ (not/to give) fencing lessons this year?
34. ________ Mr. Wilson ________ (not/to talk) to the boss right now?
35. We ________ (not/to leave) until Sunday.
36. They ________ (to meet) us on the corner at 10:00.
37. John ________ (not/to do) well in his studies this year.
38. They ________ (to build) many new highways in Quebec this year.
39. The two girls ________ (not/to write) letters now.
40. Mr. and Mrs. Smith ________ (to teach) English, ________ they?
41. ________ she ________ (to go) on a trip this summer?
42. You ________ (not/to write) the answer down, ________ you?
43. You ________ (to tell) the student about the test before the interview, ________ you?
44. It _______ (to snow) often during the month of January, _______ it?

45. This _______ (not/to seem) very difficult, _______ it?

46. I _______ (to sit) at my desk at this moment.

47. They _______ (not/to attend) church every Sunday, _______ they?

48. Flowers _______ (not/to grow) when it’s cold, _______ they?
Fill in the blanks in the following sentences using either the simple present (e.g., I write a letter every day) or the present continuous (e.g., I'm writing a letter now). Do not use any other tense. You can have as much time as you want to complete the test.

1. Pierre ___ ___ ___ (to know) all of the new words very well.
2. John ___ ___ ___ ___ (not/to travel) to England tomorrow.

1. The train ___ ___ ___ (to leave) in 5 minutes, ___ ___ it?
2. The train ___ ___ ___ (not/to arrive) until midnight, ___ ___ it?
3. Mr. & Mrs. Smith ___ ___ ___ (to build) a new home in the suburbs, ___ ___ they?
4. You ___ ___ ___ (not/to learn) many new words from that course, ___ ___ you?
5. It ___ ___ ___ (not/to rain) very hard right at the moment, ___ ___ it?
6. John and Frank ___ ___ ___ (to write) letters at the moment, ___ ___ they?
7. The leaves ___ ___ ___ (not/to begin) to fall from the trees yet.
8. ___ ___ ___ you ___ ___ ___ (not/to spend) the weekend in Alexandria?
9. ___ ___ ___ he ___ ___ ___ (not/to listen) to the radio, right now?
10. Mr. Evans ___ ___ ___ (not/to write) any articles at the moment.
11. They ___ ___ ___ (to leave) for Mexico soon.
12. What ___ ___ ___ you ___ ___ ___ (to do) tonight?
13. Mr. & Mrs. Smith ___ ___ ___ (not/to build) a house on Maplewood Ave.
14. ___ ___ ___ she ___ ___ ___ (to sit) in the fourth row today?
15. The men ___ ___ ___ (not/to talk) right now.
16. That woman ___ ___ ___ (not/to come) from Europe, ___ ___ she?
17. She ___ ___ ___ (to ask) many questions, ___ ___ she?
18. The sun _______ (to rise) later in December than in June, _______ it?
19. You _______ (not/to give) the stimulus more than once, _______ you?
20. _______ Mr. Johnson _______ (to dictate) to Miss Peters now?
21. The sun _______ (not/to revolve) around the earth.
22. The leaves _______ (to begin) to fall from the trees.
23. Mary _______ (not/to play) the piano as well as Jane.
24. The men _______ (to fix) the floor in the hall right now.
25. I _______ (to mark) the answer on a scale of 1 to 5, _______ it?
26. He _______ (not/to prepare) his homework carefully all the time, _______ he?
27. You usually _______ (to meet) your friends at the corner; _______ you?
28. You _______ (not/to like) coffee very much, _______ you?
29. It _______ (to look) like rain, _______ it?
30. _______ you _______ (not/to write) you S.I.N. here?
31. My friend _______ (to enjoy) hamburgers very much.
32. _______ I _______ (to write) my name here?
33. _______ we _______ (to use) many books during the semester?
34. _______ they _______ (not/to sell) newspapers there?
35. _______ the sun _______ (not/to warm) the air?
36. _______ birds _______ (to build) their nests in the summer?
37. _______ you _______ (to read) many books every year?
38. _______ Mr. Brown _______ (not/to pay) his bills once a month?
39. _______ Charles and Mary _______ (not/to like) that English book?
40. I _______ (not/to hear) anyone in the hall now.
41. You _______ (not/to add) the butter until the mixture is warm.
42. _______ the students _______ (to need) help with their lessons?
43. The information you _______ (to give) during the test is not important.
44. Mr. Wilson _______ (to have) a private office.
45. The sun always _______ (to rise) in the east.
46. Iron ______ (not/to float) on water.

47. The men ______ (not/to eat) at that cafeteria all the time.

48. We ______ (to work) from 9:00 to 5:00, 5 days a week.
BIBLIOGRAPHY


Ahmad, F. "A Look at Recent ESL Course Material for Adults". TESL Talk, Vol. VI, No. 1 (Jan., 1975).


