INFORMATION TO USERS

This was produced from a copy of a document sent to us for microfilming. While the most advanced technological means to photograph and reproduce this document have been used, the quality is heavily dependent upon the quality of the material submitted.

The following explanation of techniques is provided to help you understand markings or notations which may appear on this reproduction.

1. The sign or "target" for pages apparently lacking from the document photographed is "Missing Page(s)". If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting through an image and duplicating adjacent pages to assure you of complete continuity.

2. When an image on the film is obliterated with a round black mark it is an indication that the film inspector noticed either blurred copy because of movement during exposure, or duplicate copy. Unless we meant to delete copyrighted materials that should not have been filmed, you will find a good image of the page in the adjacent frame.

3. When a map, drawing or chart, etc., is part of the material being photographed the photographer has followed a definite method in "sectioning" the material. It is customary to begin filming at the upper left hand corner of a large sheet and to continue from left to right in equal sections with small overlaps. If necessary, sectioning is continued again—beginning below the first row and continuing on until complete.

4. For any illustrations that cannot be reproduced satisfactorily by xerography, photographic prints can be purchased at additional cost and tipped into your xerographic copy. Requests can be made to our Dissertations Customer Services Department.

5. Some pages in any document may have indistinct print. In all cases we have filmed the best available copy.

University Microfilms International

300 N. ZEEB ROAD, ANN ARBOR, MI 48106
18 BEDFORD ROW, LONDON WC1R 4EJ, ENGLAND
BENYA, ROSEMARIE ANN

THE EFFECT OF THE PLACEMENT OF GUIDING QUESTIONS FOR LISTENING PASSAGES ON THE RETENTION OF FACTUAL MATERIAL BY THIRD QUARTER COLLEGE SPANISH STUDENTS

The Ohio State University

University Microfilms International 300 N. Zeeb Road, Ann Arbor, MI 48106

Copyright 1980 by Benya, Rosemarie Ann All Rights Reserved
PLEASE NOTE:

In all cases this material has been filmed in the best possible way from the available copy. Problems encountered with this document have been identified here with a check mark ✔.

1. Glossy photographs _________
2. Colored illustrations _________
3. Photographs with dark background _________
4. Illustrations are poor copy _________
5. Print shows through as there is text on both sides of page _________
6. Indistinct, broken or small print on several pages ✔
7. Tightly bound copy with print lost in spine _________
8. Computer printout pages with indistinct print ✔
9. Page(s) _________ lacking when material received, and not available from school or author
10. Page(s) _________ seem to be missing in numbering only as text follows
11. Poor carbon copy _________
12. Not original copy, several pages with blurred type _________
13. Appendix pages are poor copy _________
14. Original copy with light type _________
15. Curling and wrinkled pages _________
16. Other ___________________________________________
THE EFFECT OF THE PLACEMENT OF
GUIDING QUESTIONS FOR LISTENING PASSAGES
ON THE RETENTION OF FACTUAL MATERIAL
BY THIRD QUARTER COLLEGE SPANISH STUDENTS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Rosemarie Ann Benya, A.B., M.A.

** * * * *

The Ohio State University
1980

Reading Committee:

Professor Edward D. Allen
Professor Roger T. Cunningham
Professor Melba D. Woodruff

Approved By

Edward D. Allen
Adviser
Department of Humanities
Education
There are two ways of spreading light:

to be the candle

or the mirror that reflects it.

---Edith Whorton

To:

Melba D. Woodruff

one of the shining candles

of our profession.
ACKNOWLEDGMENTS

I wish to thank the members of my reading committee for their helpful comments and constructive criticisms. To my adviser, Dr. Edward D. Allen, for his confidence in me and for all the things he has taught me. To Dr. Roger T. Cunningham for letting me have free access to his collection of reference materials, and most of all for his patience. To Melba D. Woodruff, whose moral support I sincerely appreciate and whose judgment I value.

I am deeply grateful to my friend, colleague, and "dissertation partner," Michael Evans, without whose help and constant encouragement this dissertation would not be. I also want to thank his wife Hannelore Evans who, with the patience of a saint, endured not only her husband's dissertation but mine as well.

A number of people played varying roles at certain points in this study. It is indeed appropriate that I give them thanks for their help.

To Hovey Cowles for his assistance in the initial stage of the study in setting up both the experiment and the computer programs for analyzing the data.

iii
To Jolaine Scholl who, during the final stages of this study, unselfishly gave of her time in helping with the data analysis and examination of the interactions.

To Deanna Reed and her Spanish students at Wehrle High School and to Bette Stevens and her Spanish students at Ohio Dominican College for their help in developing the distractors to the multiple-choice items.

To Angela Labarca for helping me edit the passages and for recording them.

To Chairman Donald Larson and Professor Mario Iglesias of the Department of Romance Languages and Literature at The Ohio State University for giving me permission to work with their staff and students.

To the instructors of Spanish 103 at The Ohio State University during winter and spring quarters, 1979, for letting me work with the students in their classes.

To the students in Spanish 103 at The Ohio State University during winter and spring quarters, 1979, without whose cooperation and participation this study would not have been possible.

To George Frick and his staff at the Listening Center at The Ohio State University for making sure that no mechanical problems occurred with the equipment in the lab which we used.

To Mary Stovall for assisting me in the lab on the days when I was gathering my data.
I am grateful both to AMSCO School Publications, Inc., for letting me use a passage from Review Text in Spanish Two Years by Nassi and Bernstein and to Scott, Foresman and Company for allowing me to use two selections from Plazas y paisajes by Griffith, Neale-Silva and Briggs.

I also want to express my gratitude to my friends, my sisters and their families, and my fellow Ph.D. candidates in the Foreign Language Education Program at The Ohio State University for their many kind words and deeds, all of which helped make the years of rough going much more tolerable.

Last but not least, I am thankful to my parents, Vincent and Marie Benya, for cheerfully accepting my "going back to school," and for their help in easing the financial burdens of my doing so.
VITA

May 20, 1942 . . . Born - Cleveland, Ohio.

1964 . . . . . . . A.B., Notre Dame College, Cleveland, Ohio.


1968-1974 . . . . Instructor of Spanish, Department of Romance Languages and Classics, Kent State University, Kent, Ohio.

1974-1975 . . . . Part-time Teacher of Spanish, Bishop Watterson High School, Columbus, Ohio.

1975-1977 . . . . Teaching Assistant, Department of Humanities Education, The Ohio State University, Columbus, Ohio.


1978-1979 . . . . Teaching Assistant, Department of Humanities Education, The Ohio State University, Columbus, Ohio.

1979-1980 . . . . Teaching Assistant, Department of Romance Languages and Literatures, The Ohio State University, Columbus, Ohio.
PUBLICATIONS

Behind the Bookcase, with Melba D. Woodruff, L. Michael Evans, Judy Montanero, and Bettye Myer. In preparation.

FLAG: Foreign Language Arts in the Grades, with Melba D. Woodruff, Richard Beery, L. Michael Evans, and Bettye Myer. Under review by a publisher.


"Types of Classroom Questions and Their Uses," with L. Michael Evans. In Helicon, the literary magazine of the Department of Romance Languages, The Ohio State University, Columbus, Ohio, November, 1979.

FIELDS OF STUDY

Major Field: Foreign Language Education

Studies in Foreign Language Education. Professors Edward D. Allen, Gilbert A. Jarvis, and Melba D. Woodruff

Studies in Early and Middle Childhood Education. Professors Roger T. Cunningham, Alexander Frazier, and Martha King
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEDICATION</td>
<td>ii</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>VITA</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>xi</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xii</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>8</td>
</tr>
<tr>
<td>Design and Analysis of the Study</td>
<td>9</td>
</tr>
<tr>
<td>The Variables Examined in the Study</td>
<td>9</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>11</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>12</td>
</tr>
<tr>
<td>Basic Assumptions</td>
<td>13</td>
</tr>
<tr>
<td>Value of the Study</td>
<td>13</td>
</tr>
<tr>
<td>Organization of the Dissertation</td>
<td>14</td>
</tr>
<tr>
<td>II. REVIEW OF RELATED LITERATURE AND RESEARCH</td>
<td>15</td>
</tr>
<tr>
<td>THE LISTENING SKILL</td>
<td>16</td>
</tr>
<tr>
<td>The Nature of the Listening Skill in</td>
<td>16</td>
</tr>
<tr>
<td>General and Its Role in Foreign</td>
<td></td>
</tr>
<tr>
<td>Language Learning</td>
<td></td>
</tr>
<tr>
<td>The Relationship of the Listening Skill</td>
<td>21</td>
</tr>
<tr>
<td>to the Reading Skill</td>
<td></td>
</tr>
<tr>
<td>QUESTIONS AND THEIR ROLE IN NATIVE</td>
<td>28</td>
</tr>
<tr>
<td>LANGUAGE LEARNING</td>
<td></td>
</tr>
<tr>
<td>Questions and Question Types in General</td>
<td>28</td>
</tr>
<tr>
<td>The Question as a Facilitator of</td>
<td></td>
</tr>
<tr>
<td>&quot;Mathemagenic Behavior&quot;</td>
<td>36</td>
</tr>
<tr>
<td>Questions Used in Pre-, Post-, and</td>
<td></td>
</tr>
<tr>
<td>Interspersed Positions to</td>
<td></td>
</tr>
<tr>
<td>Facilitate Reading Comprehension</td>
<td>46</td>
</tr>
</tbody>
</table>

viii
### Questions Used in Connection with Listening Comprehension in the Learner's Native Language

- **QUESTIONS AND THEIR ROLE IN FOREIGN LANGUAGE LEARNING** .................................................. 56
- **Introduction and Discussion of the Role of Questions in Connection with the Reading and Speaking Skills and with Culture**. 56
- **The Use of Questions to Facilitate Listening Comprehension in the Foreign Language** 62

### THE PREPARATION OF LISTENING COMPREHENSION MATERIALS FOR USE IN THE FOREIGN LANGUAGE CLASSROOM

- **III. DESIGN AND INSTRUMENTATION OF THE STUDY** . 71
  - **Introduction** ............................................. 71
  - **Preliminaries: Preparation of the Instruments to Be Used** ............................................. 72
  - **Selection of the Passages** ............................................. 72
  - **Preparation of the Treatment Tapes** ............................................. 73
  - **Generation of Guiding Questions and Test Items** ............................................. 75
  - **Generation of Distractors** ............................................. 75
  - **Selection of the Items** ............................................. 77
  - **The Pilot Study** ............................................. 77
  - **The Study** ............................................. 81
  - **Refinement of the Instruments to be Used: Guiding Questions and Retention Test** ............................................. 81
  - **Implementation of the Data-Gathering Process** ............................................. 82

### IV. FINDINGS AND RESULTS

- **Introduction** ............................................. 83
- **Summary of the Data Gathering Process** ............................................. 84
- **Analysis of the Data Based on Comparisons of the Four Treatments** ............................................. 85
- **Analysis of the Data on a Per Passage Basis** ............................................. 90
- **Analysis of the Data Based on a One-Between One-Within Mixed Design** ............................................. 92
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. SUMMARY, CONCLUSIONS, AND IMPLICATIONS</td>
<td>100</td>
</tr>
<tr>
<td>Overview</td>
<td>100</td>
</tr>
<tr>
<td>Remarks</td>
<td>101</td>
</tr>
<tr>
<td>Recommendations for Further Research</td>
<td>104</td>
</tr>
<tr>
<td>Implications</td>
<td>107</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>108</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>125</td>
</tr>
<tr>
<td>Tape Scripts for Treatments 1, 2, 3, 4</td>
<td>126</td>
</tr>
<tr>
<td>Listening Passages 1, 2 and 3</td>
<td>137</td>
</tr>
<tr>
<td>English Translations of Listening Passages</td>
<td>140</td>
</tr>
<tr>
<td>Memo to Spanish 103 Instructors</td>
<td>143</td>
</tr>
<tr>
<td>Consent Form to Be Signed by Participants in Study</td>
<td>144</td>
</tr>
<tr>
<td>Questions Used in Preliminary Stage of Study--For Passages 1, 2 and 3</td>
<td>145</td>
</tr>
<tr>
<td>Multiple Choice Questions (Used for Item Analysis and Item Selection in Preliminary Stage--For Passages 1, 2 and 3)</td>
<td>149</td>
</tr>
<tr>
<td>Assignment to Treatment: Example Taken from Pilot Study</td>
<td>160</td>
</tr>
<tr>
<td>Seating Plan for Listening Center</td>
<td>161</td>
</tr>
<tr>
<td>Test Booklets Used by Participants--Listening Formats I, II, III, IV (Treatments 1, 2, 3, and 4)</td>
<td>162</td>
</tr>
<tr>
<td>Experimental Data</td>
<td>208</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1. Mean Number of Correct Answers (Out of a Possible of Seven) For Each Trial for Each Group: McDonough's Study</td>
<td>65</td>
</tr>
<tr>
<td>2. Number and Percentage of Subjects Who Had Correct Scores on the Delayed Probe Question: McDonough's Study</td>
<td>66</td>
</tr>
<tr>
<td>3. Mean Scores and Standard Deviations on the Retention Test.</td>
<td>86</td>
</tr>
<tr>
<td>4. Analysis of Variance of Retention Test Scores by Question Placement</td>
<td>88</td>
</tr>
<tr>
<td>5. Mean Scores and Standard Deviations on a Per Passage Basis</td>
<td>91</td>
</tr>
<tr>
<td>6. Analysis of Variance Summary Table for Dependent Variable</td>
<td>96</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Parallel Nature of Aural and Written Language Perception Processes as Presented by Gibson (p. 9)</td>
<td>26</td>
</tr>
<tr>
<td>2. Cunningham's Classification of Classroom Questions</td>
<td>33</td>
</tr>
<tr>
<td>3. Treatment Group Means for the Test of Retention of Relevant Information</td>
<td>89</td>
</tr>
<tr>
<td>4. A Comparison of Treatment Group Means Presented by Passage</td>
<td>93</td>
</tr>
<tr>
<td>5. Interaction Between Passage and Question Position</td>
<td>99</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

People involved in the field of communications contend that we are extremely lax and inefficient in our listening habits. In fact, Lyman Steil, a professor of communications, addresses himself to this very issue in "Experts Claim Most People Listen, But Unfortunately Not Very Well," an article which appeared recently in the Columbus Dispatch (1980):

If you ask someone to listen to a short message that runs ten minutes in length and then ask what the person heard, what was evaluated, retained, and what the person could respond to, he would operate at about the 50 percent mark.

If you come back in 48 hours and test again, he'll drop down to the 25 percent effectiveness level. Without focus and systematic training you're ineffective at listening. (p. 11)

The concerns described here are expressed with regard to people who are listening to messages spoken in their own native languages; both listening to and understanding what is heard become more complex when the message is given in a foreign language.

Today's foreign language curricula cite the development of the listening skill as one of its overall goals. However, according to Chastain (1976), listening comprehension
seems to be the most neglected of the four language skills—listening, speaking, reading, and writing. He believes that this neglect is certainly not justified. Listening comprehension, in his opinion, is at least as important as any of the other skills, and perhaps even more so. As a case in point, Chastain (1976) writes:

The greatest weakness of students who go abroad is not their inability to speak, but their inability to understand the native's answer. They are not accustomed to meeting unstructured oral situations. This is not to say that the students can speak better than they can understand. . . . The point is that students can limit their speech to language they can control; but they must be prepared to understand the unstructured language encountered in the replies. (p. 284)

In order to overcome this deficiency in their students' second-language learning experiences, foreign language teachers should make every attempt to provide classroom activities which give their students the opportunity to function in the foreign language as they would be expected to do if they were in the foreign country. The development of the ability to understand spoken foreign language is not something that takes place overnight; it is a gradual and continuing process. According to Allen and Valette (1977), "It [i.e., listening comprehension] is a skill which must be taught, and that does not happen automatically. One of the teacher's most important tasks is to provide a variety of purposeful listening activities throughout the entire language course" (p. 179).
With this in mind, then, the foreign language teacher must confront and deal with the problem of providing purposeful listening activities for students. Chastain (1976) suggests some possibilities for the foreign language teacher to consider; he believes that many of the aids normally given in promoting reading comprehension can also be used to facilitate the improvement of listening comprehension skills.

In reading, students are given clues that will make reading easier and more enjoyable. ... The students are assisted in making the jump from carefully controlled materials to less structured readings. However, in listening comprehension, little assistance and very few guidelines are provided. The assumption is made that the students will automatically understand the spoken language without specific exercises and practice in that skill. The results in most classrooms would indicate that such is not the case. (p. 285)

One of the techniques or strategies being employed to facilitate reading comprehension is the use of questions in connection with the reading of prose materials. A number of early studies (Bruning, 1968; Frase, 1968a, 1968b; Rothkopf, 1966) have attempted to assess the effects of having the subjects read and answer questions during their reading of prose materials. In general, these studies have shown that reading and answering questions after short segments of prose tend to facilitate immediate posttest performance.

This finding has usually been interpreted in terms of the "mathemagenic hypothesis" first conceptualized by Rothkopf in 1965. "Mathemagenic" is a word coined by
Rothkopf to describe behaviors that give birth to learning, it is derived from the Greek roots mathema—that which is learned, and gignesthai—to be born. The "mathemagenic hypothesis" holds that there are certain behaviors (mathemagenic behaviors) which control the formation of correct associations during learning. In studies by Rothkopf (1966, 1970), Frase (1967, 1968a, 1969, 1970) and Bruning (1968, 1970), questions are thought to function as mathemagenic controls for shaping inspection behavior during reading, thus facilitating learning.

The research done in the area of questions used as mathemagenic controls for shaping inspection behavior during reading, has, up until recently, been confined to the area of native-language reading behavior. In their chapter in Volume 7 of the ACTFL Review of Foreign Language Education, King, Holley and Weber (1975) call for work to be done in the area of questioning techniques and their relation to second language reading behavior.

Ways to use questions in foreign language reading must be researched to see, among other things, under which conditions students comprehend better with prequestions and under which with postquestions. The unfamiliarity of the foreign language learner with both the vocabulary and the cultural background of a text may be a decisive factor in favor of prequestions. (p. 180)

To this end, the renowned foreign language educator and researcher, Evans (1979) has examined the effects of prequestions, postquestions, and interspersed questions on the reading comprehension of foreign students learning English
as a second language. Furthermore, as an extension of his investigations dealing with questions used in connection with reading passages, Evans states that "research examining the effects of the cognitive level and position of questions which are given in conjunction with a listening passage could be very useful to the foreign language learner" (p. 82).

Some work relevant to the use of questions in connection with the spoken language has utilized the native language of the subjects being tested (Bertou, 1972; Furnam, 1974; Hillman, 1972; Tutolo, 1971).

Bertou (1972), in his analysis of the relative efficacy of advance organizers, post organizers, interspersed questions and combinations thereof in facilitating learning from televised instruction, assumed that the listening mode figures prominently in the video-taped presentation dealing with science materials. He found that: 1) the acquisition and retention of knowledge from the video-taped lessons was not significantly affected by the use of advance organizers; 2) the acquisition and retention of knowledge from the video-taped lesson was significantly affected by the use of interspersed questions; 3) the acquisition and retention of knowledge from the video-taped lesson was not significantly affected by post-organizers; and 4) no interaction effects were found between the three experimental factors.
In examining the effects of post-adjunct questioning on learning from written and oral instruction, Furnam (1974) found that while written instruction was significantly more effective than oral instruction, post-adjunct questions seemed to exert a greater effect on oral instruction than on written instruction.

While measuring the effect of question type and position on four types of learning among mentally handicapped children who were asked to listen to a story, Hillman (1972) found that postquestions produced better retention of material than did the prequestions.

Tutolo (1971) examined the effect of question position (before or after passages), question pacing (every ten, twenty, or thirty sentences), and IQ classification on recall of factual prose material in listening. An analysis of variance on recall data revealed significant differences favoring those subjects who were given questions after listening to the passage; in addition, a higher level of performance for those subjects in the high IQ classification was reported.

In his discussion of the overall status of the art of testing listening comprehension in a foreign language, Jones (1977) states that surprisingly little work has been done in this area. He attributes this either to a satisfaction with existing listening comprehension tests or to a concern with their reliability. He calls for more work to be done in
this area of listening comprehension:

... The teaching of listening comprehension is receiving a great deal of attention in language teaching today, especially in the early phase of language programs. It is believed that speaking proficiency can be greatly enhanced by early exposure to listening. It is therefore essential that we work on developing more precise instruments to measure the ability to listen and to comprehend a message. (p. 249).

In her discussion of listening comprehension and the learning of a foreign language, Rivers (1976) lists the four stages of listening comprehension and describes suitable activities for each stage. Stage C describes the general area with which this study is concerned.

A. Identification: perception of sounds and phrases; identifying these directly and holistically with meaning.

B. Identification and selection without retention: listening for the pleasure of comprehension, extracting sequential meanings, without being expected to demonstrate comprehension through active use of the language.

C. Identification and guided selection with short-term retention: students are given some prior indication of what they are to listen for; they demonstrate their comprehension immediately in some active fashion.

D. Identification and selection with long-term retention: students demonstrate their comprehension, or use the material they have comprehended, after listening experience has been completed; or they engage in an activity which requires recall of material learned some time previously. (p. 95)

In a study involving Francophone African students learning English as a foreign language, McDonough (1977) examined the effects of question type and question position on incidental learning of information presented in listening
passages. (Incidental learning refers to the recall of that information contained in the passage but not asked for by the questions presented during or after the selection as part of the treatment.) The questions used in the study tested either content or expressions and were given either during or after the listening selection. Results of this study indicated a clear, though not significant, trend which favored the presentation of both types of questions in the "after" position to facilitate incidental learning. Also, McDonough reported that overall success was greater when questions which tested for content were used.

Purpose of the Study

This study is designed to examine whether one of the techniques used in facilitating reading comprehension, that of using guiding questions presented at various points—before, after, or during the passage—has an effect on the retention of factual material contained in the listening passage. In addition, this study expands on McDonough's work in two ways: 1) the subjects listen to more than one passage, and 2) a treatment group receives questions before listening to the passage.

The research question to be considered in this project is:

Does the position of written guiding questions for a listening passage affect the performance of a student on a test which measures how well the student can remember the
material asked for in the guiding questions?

**Design and Analysis of the Study**

Volunteer subjects from the Spanish 103 classes at The Ohio State University were randomly assigned to one of four treatment groups. The description of the four treatment groups is as follows:

1. **Questions Before**—the subjects read their guiding questions before listening to the passage (prequestions).
2. **Questions After**—the subjects read their guiding questions after listening to the passage (postquestions).
3. **Questions During**—the subjects referred to their guiding questions while they listened to the passage (interspersed prequestions).
4. **No Questions**—the subjects received no guiding questions at all in connection with the listening passage (control).

Three passages (Passage I, Passage II, and Passage III) were used for the treatment. The researcher decided to use three passages in order to control for any unusual advantages or any problems which the subjects might have had with the passage as a result of the nature of the passage itself or the material dealt with therein. By way of illustration, the first passage, "The Contrary Woman" was based on a fable. Possibly those students who might be "fable-wise" could have comprehended this selection simply because it was a fable. For this reason, other passages which conveyed
other types of information were used in this study.

Each subject listened to all three of the passages. The question placement treatment which a subject received for the passages was the same one for all three of the passages. For example, Subject A might have received the "questions before" format in connection with the three listening selections; Subject B might have received the "questions during" format in connection with the three passages, and so forth.

The guiding questions were provided in the subject's individual testing booklet for his particular treatment. Copies of the test booklets for the four question position treatment formats appear in the appendix.

After listening to each passage and completing the respective question-placement treatment connected with it, each participant took a five item, multiple-choice retention test which dealt with the respective passage. There were three of these multiple-choice tests in all (one after each passage). The tests were also included in each subject's individual testing booklet for the overall treatment. The multiple-choice questions were sealed off, and the subjects were instructed to break the seals at the appropriate times. Both the guiding questions and the multiple-choice questions were given in English. The questions were presented in English so as not to complicate the issue of measuring listening skill in the foreign language with the
introduction of yet another foreign language skill, namely that of reading comprehension.

The Variables Examined in the Study

The independent variable in this study was that of question position in relation to a listening passage. The dependent variable was the total score on the multiple-choice retention test.

The total score across the test was calculated by adding up the scores on the retention tests for Passages I, II, and III. (I + II + III = T)

A mean score for each treatment group was calculated and a one-way ANOVA was used to describe the statistical differences between the treatment groups.

Definition of Terms

1. Guiding question--a written question which was read and studied in connection with a listening passage.

2. Prequestion--a written guiding question to which the student was to refer before hearing the recorded passage. The student was instructed to put the paper on which these questions were written into the envelope provided. The student was told not to refer back to these questions once they had been put into the envelope.

3. Postquestion--a written guiding question to which the student was to refer after listening to the recorded passage. The student was instructed not to look at these questions until the listening passage had finished.
4. Interspersed prequestion--a written guiding question to which the student referred while listening to the recorded passage. The student was instructed that he could look at these questions as he listened to the passage. The "interspersing" activity was, in effect, to be carried on by the student as he listened to the passage. It should be noted that not all of the students would be interspersing at the same time.

5. Retention question--a multiple-choice question which tested how well a subject could remember certain information from a listening passage. These questions tested the retention of factual material asked for by the guiding questions provided in connection with the listening passage. The retention questions were to be answered by the subjects after listening to the passage and dealing with the guiding questions provided for the passage.

Limitations of the Study

1. This research was done with college students only.

2. Only short-range retention of information was measured; retention over a longer period of time might be affected in a different way by question position.

3. Only factual material was asked for by the questions.

4. This study was conducted with subjects who were studying Spanish as a foreign language as opposed to some other foreign language.
Basic Assumptions

The investigation of the problem as discussed in this chapter made the following assumptions:

a) All the students participating in the study had normal hearing ability.

b) All the students participating in this study had sufficient ability in reading their native language to allow them to read the guiding questions and the multiple-choice questions on the criterion instrument.

c) Listening comprehension can be measured using the testing format and procedures described in Chapter III.

Value of the Study

At present in the foreign language education profession there is a great deal of interest in the development of the ability to communicate in realistic situations. This attention to communication in real life contexts implies that learners come into contact with listening activities which offer extensive and varied exposure to the spoken language from the very beginning of second-language study. Furthermore, this emphasis on exposure to communicative situations which are realistic, practical and relevant suggests that the learners can profit, according to their innate abilities, from listening practice which goes beyond the highly structured listening-speaking exercises usually associated with beginning foreign language classes. In the past, the
listening skill has not received sufficient attention in order to achieve these instructional objectives.

This study is intended to add more information to increase our knowledge about ways and means to improve listening comprehension. It is hoped that the findings of this project can be helpful to people involved in devising materials used in foreign language classrooms for developing aural competence, a skill of value in and of itself in addition to being an essential component in the development of the oral skill.

Organization of the Dissertation

The study is divided into five chapters: this introductory chapter which discusses the rationale, scope, and limitations of the study is followed by a review of experiments and articles pertaining to listening comprehension and to question placement research. Chapter three presents the procedures used in this study. Results of the data analysis appear in chapter four; chapter five contains the discussion of these findings, their implications for foreign language teaching and learning, and suggestions for further research.
CHAPTER II

REVIEW OF RELATED LITERATURE AND RESEARCH

Background literature and research contributing to the conceptualization of this study which describes the use of guiding questions as a means of facilitating listening comprehension in Spanish are drawn from the following related and relevant areas:

I. The Listening Skill
   A. The Nature of the Skill and Its Role in Foreign Language Learning
   B. The Relationship of the Listening Skill to the Reading Skill

II. Questions and Their Role in Native-Language Learning
   A. Questions and Question Types in General
   B. The Question as a Facilitator of "Mathemagenic Behavior"
   C. Questions Used in Pre-, Post-, and Interspersed Positions to Facilitate Reading Comprehension.
   D. Questions Used in Connection with Listening Comprehension in the Learner's Native Language

III. Questions and Their Role in Foreign Language Learning
   A. Introduction and Discussion of the Role of Questions in Connection with the Reading and Speaking Skills and with Culture
B. The Use of Questions to Facilitate Listening Comprehension in the Foreign Language

IV. The Preparation of Listening Comprehension Materials for Use in the Foreign Language Classroom

THE LISTENING SKILL

The Nature of the Listening Skill in General and Its Role in Foreign Language Learning

According to Mueller (1974), both listening and reading comprehension have been neglected in foreign language pedagogy. He states that the comprehension of a message in a foreign language is a complex skill and that it is usually assumed that the students understand what they hear and read if they know the vocabulary and grammatical forms of the language.

A few theoreticians have pointed out that it can indeed be difficult to understand native speakers even though they use care in their choice of words, their enunciation, and their grammar. Rivers (1968) claims that listening comprehension is the most difficult of the language skills and the one which causes the most anxiety for the learners. Asher et al. (1974) maintain that learning difficulties are more likely to occur if the transition from the listening skills to the speaking, reading, and writing skills is made too quickly or too soon in the learner's program.

Jarvis (1972) sees listening behavior as a merging of both physical and mental occurrences; he discusses the
differences between "hearing" and "listening." For one to truly listen, one must be receptive to the physical sound waves which strike the auditory organs. Listening can then be defined as the organism's reaction to that which is heard. Duker (1969) considers the relationship between hearing and listening to be one of dependency. "Hearing involves the conversion of pressure waves into neural impulses which move to the brain for interpretation. Listening is the process of interpretation" (p. 747).

Studies by Purdom (1969) and Van Valkenburg (1968) which deal with the development of listening skills in one's first language indicate that listening ability, as measured by comprehension of material heard, can be increased through the use of carefully designed instructional programs and listening exercises. The need for practice in listening to the foreign language being learned is pointed out by prominent foreign language educators (Grittner, 1969; Chastain, 1976; Mueller, 1974; Valette, 1968). Students need to learn which aspects of the language are important and which aspects are redundant or unessential as far as decoding the message is concerned. Practice in decoding new messages using familiar vocabulary and structures, and practice in listening to the second language in communicative contexts are necessary so that the students become prepared to deal with the kinds of unrehearsed situations that a native speaker must confront daily.
In a discussion of the process of comprehending a message, Mueller (1974) postulates three separate but simultaneous activities: sensing, segmenting, and recoding. During the first activity termed sensing, the listener gets a general idea or sense of the content of what is being heard. Those items which do not fit into his general impressions are rejected as "noise." During the segmenting activity, the hearer begins to separate the content into simple linguistic units consisting of subject, verb, and any main complement(s). The message is being decoded in greater detail by the listener. The listener judges whether the utterance is positive, negative, or interrogative, past, present, or future. Those phrases which serve as adjectives or as adverbs in the overall sentence construction are also noted. Determining the grammatical function of each phrase contained in the total sentence is a major activity in this part of the comprehension process. On the semantic level, the listener discerns words and their possible meanings and disregards those words which do not fit into the relationship which has been perceived. The listener does not identify words in isolation, but as phrasal units which serve as syntactic units; judgment is suspended until enough has been apprehended for the larger context to emerge. In the third activity, the recoding of segments for long-term memory takes place. The exact words are not remembered; it is some abstraction which is stored. By way of illustration,
it could be said that the listener draws out the nucleus or essence from each phrase and builds a skeleton sentence which is stored in memory.

Chastain (1976) sees the listening comprehension process as being divided into at least five sequential parts, with each being dependent on the one occurring before it. First comes the ability to note the difference of all of the sounds, intonation patterns, and voice qualities in the second language and to discriminate between them and sounds in the native language which are similar. The perception of the whole message produced by a speaker is the second component. The third is the ability to keep that message in one's auditory memory until it can be processed. Fourth is the decoding of what the speaker has said. (Chastain warns, however, that the comprehension of the message in and of itself does not imply that the hearer is able to discuss content in the second language.) The fifth and final stage is the ability to use the message in the second language or store the message in the second language.

In a detailed discussion of step two of the listening comprehension process, namely that of perception of the message, Chastain (1976) explains some of the problems characteristic of this phase of listening comprehension. One problem is simply that of getting students to listen and pay attention to what is being said so that the series of sounds registers on their consciousness. It is important
that the students hear what is being said, with the intent of doing something with what they hear. Both cognitive and affective considerations are other factors involved in getting students to listen. First, the students need to feel that it is conceivable for them to understand what they hear. Second, for optimal concentration, the students should know why they are involved in the listening activity. Third, they should have some desire to hear what is said and to comprehend the message. In addition to the concerns expressed above by Chastain, Carroll (1972) points out two processes that often take place along with comprehension, namely those of memory and inference. He states that even though these two processes can be separated from comprehension at the conceptual level, their occurrence may make it hard to measure the separate occurrence of the comprehension process itself. Chastain (1976) believes that the development of the auditory memory skill must, of necessity, come before comprehension because he believes that students understand what they have heard only if they are able to remember what they have heard. According to Carton (1971) the term "inferencing," as used by psychologists, refers to a process of identifying unfamiliar stimuli. During the inferencing process as it figures in foreign language learning, attributes and contexts that are known to the learner are used in recognizing that which is not familiar. The inferencing language learner deals with levels of probability
and uncertainty that are not likely to be permitted in making acceptable formal inferences when one is referring to inferences in formal logic. Carton cautions that the inferencing process, when discussed in terms of foreign language learning is much more rapid, haphazard, and subjective than the process of formal logical inference.

The Relationship of the Listening Skill to the Reading Skill

In a discussion of the strategies employed to facilitate reading comprehension in the foreign language, Chastain (1976) notes that when students have to deal with a reading selection, they are often furnished with clues that help make their reading easier and more satisfying. The students are helped in making the transition from carefully controlled materials to readings which are less structured. By way of contrast, however, he states that in listening comprehension, little help and very few aids are provided; it is assumed that students will understand the spoken language automatically without the help of specific exercises and practice in that skill. He feels that the outcomes found in most classrooms would indicate that this is not happening. Chastain further points out that many of the techniques normally used in promoting reading comprehension can also be used to improve listening comprehension skills.

Massaro (1972), in a description of the nature of the perceptual processes in reading and listening states:
The perceptual process is characterized by the temporal course of identification or recognition. Recognition of a stimulus requires an analysis and synthesis of the information available in the sensory input. In vision [i.e., reading], the visual image during an eye fixation keeps the information available for the recognition process. In contrast, an auditory input continuously changes over [the delivery] time [of the message], and the information in the stimulus might not remain available. However, if the auditory information was held in a pre-perceptual auditory store, auditory perception might also involve a readout of the auditory image of the stimulus. The important characteristics of the auditory image will, of course, differ from those in the visual image. The major difference between the two images appears to be the critical dimension of the stimulus necessary for feature recognition. Whereas the spatial pattern is critical in audition. (p. 124)

Haber (1969) and Neisser (1967) have analyzed the temporal course of auditory perception in the same framework of the processes which are characteristic of visual perception. When the processing of auditory and visual information takes place, similar processes may occur, even though there are few similarities between visual and auditory psychophysics. For Haber and Neisser, the apparent absence of correspondence between the two modalities is primarily attributable to the differences in the psychophysical nature of light and sound. However, the similarities between visual and auditory perception become evident once the information is available in the preperceptual stage. Just as the visual stimulus must contain distinctive features which form a meaningful pattern, so must the auditory input contain distinctive features that are characteristic of a meaningful pattern. It is the microstructure of the auditory input,
that is, the modulations of sound pressure over time, which determines these features. However, these features cannot be recognized as they arrive, since this requires that perception take place immediately. It is generally believed that a temporal unit of the auditory stimulus is kept in a preperceptual auditory storage for processing. A visual stimulus produces an image that can remain after the initial visual stimulus is terminated (Averbach and Corell, 1961; Haber, 1969; Kahneman, 1968; Neisser, 1967; Sperling, 1960, 1967). It is this perceptual image which preserves the information for recognizing the meaningful pattern (Haber, 1970). Similarly, the auditory image must be present so that feature recognition of the temporal pattern can occur.

Ever since the time of the Gestalt psychologists (Hochberg, 1970; Koffka, 1935), both form and organization have been very important factors whenever the perception of visual inputs has been described. By way of an example, when a series of dots is organized to form a circle, these dots are no longer perceived as dots but they are perceived as units which form a curvilinear segment. In a like manner, with an auditory preperceptual store, fluctuations of sound pressure temporally organized to form a syllable should determine the appropriate acoustic distinctive features (e.g. Jakobson and Halle, 1956).

Massaro (1972) addresses himself to presenting a theoretical description of auditory perceptual processing. This
theory is primarily concerned with the recognition process, but in addition, auditory detection and short-term memory must also be taken into consideration. According to Massaro's theory, the perceptual process is described in terms of the information in the sensory input and the time the information is available for perceptual processing. Two assumptions are made in connection with this theory. First, it is assumed that there is an auditory input which produces a preperceptual auditory image; it is this preperceptual image that is believed to contain the information in the stimulus. The preperceptual image can be interpreted as being a perceptual unit of information. Thus, the auditory image remains beyond the duration of the stimulus presentation, and its sequential information is preserved. Second, it is assumed that the recognition process involves a readout of the information contained in the preperceptual auditory image. This readout takes time and is therefore referred to as the temporal course of perceptual processing. The amount of time required for perceptual processing is directly related to the complexity of the identification task. Thus, the more complex the identification task, the more time needed for the perceptual processing to occur.

In the area of foreign language learning, Rivers (1971) points out that the processes involved in reading for meaning tend to parallel those of listening comprehension: first, there is recognition in a fast impressionistic way of
segments which, for comprehension, must be identified as meaningful segments of phrase structure; then there is the necessity to interrelate these according to basic relationships, holding one segment in the mind and suspending judgment until other segments are identified and combined with it in a way that has meaning.

Gibson (1972) has examined the aspects involved in aural and written language perception processes and has presented them in a diagram which points out the parallel nature of these processes. Figure 1 presents the diagram of these processes.

Guthrie and Tyler (1976) studied the differences in psycholinguistic processing of written and spoken language and psycholinguistic deficiencies of poor readers. To do this, they gave meaningful, anomalous, and random word strings to two groups of 18 subjects each, one which scored high on a reading ability test and another which scored low on the same test. In both spoken and written conditions, the order of recall was meaningful > anomalous > random (p. < .001), suggesting that syntactic and semantic demands of spoken and written sentences are similar. They found that poor readers were inferior to good readers on written presentations (p. < .05). The groups were similar on spoken presentations. These researchers later discovered that the readers whom they had designated as "poor readers" were actually older than those people who had been designated as
FIGURE 1. Parallel Nature of Aural and Written Language Perception Processes as Presented by Gibson (p. 9).
the "good readers." In light of this age difference between the two groups, they suggest that it might be likely that for both good and poor readers of the same age, the performance of the good readers would be superior on the listening task. Guthrie and Tyler believe that the reading comprehension could not be attributed to inadequate psycholinguistic processing, memory, or automaticity in decoding; incomplete decoding during silent reading by poor readers was given as an explanation.

Berger and Perfetti (1977) examined the effects of oral and written modes of passage presentation on two types of comprehension tasks, namely paraphrase recall and verbatim comprehension questions. They worked with 40 fifth grade children from a small town school district; for the purpose of the study, 20 of the children had been identified as low-skilled readers and 20 of them, high-skilled readers. As a result of their investigation, Berger and Perfetti found that the skilled readers performed better on both the paraphrase recall and verbatim comprehension questions. The less-skilled readers demonstrated a reduced ability to comprehend language. The results of their study provide support for the conceptualizations that reading comprehension is interrelated with aural language comprehension and that both depend on the same general language processing skills. Their data also tend to give support to the idea that localized processing skills, namely the encoding of more
immediate language units rather than global organizational skills such as organizing and integrating larger language units into meaningful relationships, are a major source of individual differences in language processing.

In his study of the interrelationships among different approaches to listening comprehension, Binford (1978) found that listening and reading comprehension were two highly related but apparently separate abilities and that listening and reading were taught and measured by similar methods. His investigation of the interrelationships among different approaches to measuring listening comprehension among fifth and sixth graders yielded results which lend little or no support to the necessity felt by some educators for providing separate subtest scores for different facets of listening or aspects of listening comprehension, or for constructing a diagnostic battery of listening skills. He found that a single general listening ability factor seemed to account for almost all the systematic variance. His work lends further support to the belief that reading and listening comprehension are highly related, but significantly independent abilities with strong similarities in definition, development, and assessment.

QUESTIONS AND THEIR ROLE IN NATIVE LANGUAGE LEARNING

Questions and Question Types in General

Since the time of Socrates, questions have been used as an important part of the teaching-learning process. Only
recently, however, have educators and researchers taken a
closer look at the types of questions and questioning stra-

geties used in the classroom. Interestingly enough, this
research has shown that teachers have primarily been asking
questions about the specific information students possess
rather than questioning to promote learning.

The examination of the types of questions used in the
classroom was greatly facilitated by the work of Bloom
(1956) and his colleagues whose Taxonomy of Educational
Objectives later served as a basis for the development of
several question classification systems by Sanders (1966),
Hunkins (1972), and Cunningham (1971).

The categories as proposed by Bloom et al. in their
Taxonomy deal with the areas included in the cognitive do-
main beginning with the recall of specific facts and ending
with the evaluation or judgment of the value of materials
and methods for a given purpose. In the taxonomy, each
higher category includes all of the lower categories which
precede it.

In brief, Bloom et al.'s Taxonomy begins with the
"Knowledge" category as is illustrated here. The explana-
tions of the major category and sub-category headings given
in parentheses are taken from Hunkins (1972).

1.00 KNOWLEDGE (Emphasis is on the recall of specifics
and universals, the recall of methods and processes,
or the recall of a pattern, structure, or setting.)

1.10 KNOWLEDGE OF SPECIFICS (Emphasis is on the re-
call of specific and isolable bits of informa-
tion.)
1.11 Knowledge of Terminology
1.12 Knowledge of Specific Facts

1.20 KNOWLEDGE OF WAYS AND MEANS OF DEALING WITH
SPECIFICS (Emphasis is on ways of organizing,
studying, judging and criticizing.)
1.21 Knowledge of Conventions
1.22 Knowledge of Trends and Sequences
1.23 Knowledge of Classifications and
Categories
1.24 Knowledge of Criteria
1.25 Knowledge of Methodology

1.30 KNOWLEDGE OF THE UNIVERSALS AND ABSTRACTIONS IN
A FIELD (Emphasis is on knowledge of the major
schemes and patterns by which phenomena and
ideas are organized.)
1.31 Knowledge of Principles and Generalizations
1.32 Knowledge of Theories and Structures

The second category, "Comprehension," deals with the
kind of understanding in which the learners know what is
being communicated but do not necessarily relate it to other
material nor do they see the material in its more far-
reaching implications. The use of abstractions in concrete
situations is the focal activity of the "Applications" cate-
gory. In the "Analysis" category, emphasis is on dividing
up a communication into its constituent elements. "Synthe-
sis" involves the combining of various elements into a co-
hesive whole. The sixth and final category is that of
"Evaluation" which is a process by which the learners make
judgments about the value of materials and methods for a
specified purpose.

The system of question classification which is possibly
the most useful for foreign language instructional purposes
is that presented by Cunningham (1971). Cunningham bases
his system on Bloom et al.'s Taxonomy (1956) and also on the Aschner-Gallagher System for Classifying Thought Processes in the Context of Verbal Interaction (q.v., Gallagher, 1965). In addition, Cunningham describes questions as being divided into two major categories: Narrow Questions and Broad Questions. Narrow questions elicit a fixed number of predictable "right" answers. Cunningham sees classroom teachers as using narrow questions in order to help their students to collect information, verify ideas, check comprehension, and review previously studied material. Broad questions elicit a variety of appropriate responses, and these responses are not always necessarily predictable. Teachers use broad questions as a means of helping their students to explore the relationships and implications of the subject matter more profoundly and to discuss, examine, state, and defend self-selected positions.

Narrow questions are further classified as either cognitive-memory questions or convergent questions. Cognitive-memory questions deal with the lowest level of thinking--the remembering of facts, definitions, and other previously learned information. Convergent questions require the students to put facts together in order to construct an answer. These questions are designed to get the students to state relationships, explain relationships or concepts, and make comparisons or describe contrasts.
The broad question category is made up of divergent and evaluative questions. Divergent questions stimulate the learners to predict, hypothesize, or make inferences. Learners are encouraged to organize elements into new patterns that were not clearly recognizable before. Divergent questions are thought-provoking and invite the learners to be creative and imaginative in their responses. Evaluative questions call for the learners to make judgments, express values, justify a choice, or defend a position. The learners must organize their knowledge, formulate opinions and take self-selected positions. When the learners deal with evaluative questions, they are calling upon and utilizing the cognitive operations from the three other levels as well. Figure 2 is a diagram which represents the relationships among the different types of questions as presented by Cunningham (1971).

Cunningham's question classification scheme is a very useful tool for the classroom teacher. Under certain circumstances, however, its categories can and should be regarded with some degree of flexibility because the interpretation of the question by the learner may, at times, lead to unexpected outcomes. Factors such as previous experiences in the classroom, the expectations of the teacher, and the context in which the question is used, can influence whether a question functions for the learner as a narrow question or a broad one. Woodruff et al. (1979) illustrate this
FIGURE 2. Cunningham's Classification of Classroom Questions.
phenomenon with an example from the elementary school classroom:

A seemingly simple, but ambiguous question such as: "What are some things we can say about the earth?" could confuse the child since it can be perceived at any level of inquiry:

1. Cognitive-memory: the child relates the question to what he has read in the book. (recall) "The earth is round."
2. Convergent: the child combines facts that he already knows or has read in books. (explain) "The third planet from the sun."
   (compare and contrast) "A planet bigger than Mars and smaller than Jupiter."
3. Divergent: the child interprets and responds to the question in a way unique to his own thought processes and past experiences.
   (infer) "It's where we live."
   (reconstruct) "Something that looks flat but is really round like a ball."
   (reconstruct) "A place with plants and roads and people and trees and cats and dogs."
   (hypothesize) "It's the biggest thing I would see if I could be on the moon."
4. Evaluative: the child interprets and responds within the framework of his own value system.
   (value) "It's the nicest planet in the solar system."
   (judge) "It can be good to people when there's sunshine and flowers and bad when there are earthquakes and blizzards."

Some researchers have looked at the effects of the types of questions asked; their focus was on the kind of cognitive processing required by the adjunct question and the influence of the question on learning. With Bloom et al.'s Taxonomy as the basis for classifying the experimental questions, Jenkins (1968) found that students who responded
mainly to analysis and evaluation types of questions scored higher on a criterion test measuring social studies achievement than did those students who worked with questions predominantly at the knowledge level.

Berlyne (1965) theorized that making students pay attention to specific material in a passage is a counterproductive process because, while the student's attention is focused on that specific information, he tends to ignore the other information in the passage and concentrates on the single word or group of words needed to answer the question. Berlyne believed that the higher the question level is, the less information the student would be able to disregard.

In testing this theory, Frase (1968e) found that retention was significantly lower with general prequestions. In a second experiment, examining the effects of prequestions which varied in the amount of material to which they referred, i.e., how much information was needed to answer the question, Frase discovered that the number of words perceived to be necessary to answer the question increased according to the cognitive level of the question. Specific questions required the fewest words to answer the question; comparative questions needed more words, and for general questions, the greatest number of words was necessary.

The results of a number of studies have shown that having to answer higher level questions promotes better comprehension (Boone, 1971; Tyler, 1972; Buggey, 1972; Ryan,
1973; Felker, 1973; Felker and Dapra, 1974; Belch, 1974; Yost, 1970). Other studies, however, by Hearn (1969), Wunderlich (1972), Hesse (1974), and Markle (1974) did not support the idea that higher level questions promote greater comprehension.

Anderson and Biddle (1975) believe that present question-level research tends to show that "adjunct questions which entail paraphrase and application of principles and concepts to new situations may be especially facilitative, particularly when the criterion test makes similar demands" (p. 103).

The Question as a Facilitator of "Mathemagenic Behavior"

Questions as guides and aids to learning have long been recognized as valid and valuable instructional tools. Rothkopf (1965) developed the mathemagenic model to explain the psychological function of questions inserted in written materials. He coined the word "mathemagenic" to refer to the attending phenomena. This word is derived from the Greek roots: mathemain, meaning "that which is learned" and gignesthai which means "to be born." Mathemagenic behaviors, then are behaviors that give birth to learning. More specifically, mathemagenic activities are those actions or cognitive operations in which the learner engages in order to be able to achieve some specified instructional objectives.
Rothkopf's mathemagenic approach stresses that the acquisition and retention of information from printed material can be related to a variety of ongoing responses. These responses, Rothkopf believes, can be brought about through the controlled use of test-like events (such as questions) given in conjunction with the reading materials. According to Rothkopf's view, the critical events for learning from printed materials are the student's responses—the mathemagenic behaviors—which take place during reading, rather than the particular question (or criteria) given. According to the essence of the mathemagenic approach, mathemagenic behaviors are modified by test-like events, in this case, questions.

For the use of written instructional material, Rothkopf (1970) sees several different classes of activities as having mathemagenic significance:

Class I. Orientation: Getting students into the vicinity of instructional objects and keeping them there for suitable time periods.

Class II. Object Acquisition: Selecting and procuring appropriate instructional objects; maintenance of selection and procurement activities.

Class III. Translation and Processing: Scanning and systematic eye fixation on the instructional object; translation into internal speech or internal representations; the mental accompaniments of reading; discrimination, segmentation, processing, etc. (pp. 328-29)

Frase (1968b) makes the following assumptions about the nature of mathemagenic behaviors:

1. The reader operates as both a closed- and open-loop system. The critical events for learning
occur at the time of contact with the stimulus material.

2. The learner possesses a hierarchy of skills, including elementary verbal associations and discriminations and higher level problem-solving skills.

3. The execution of higher level skills is contingent upon attentive response whose function it is to select stimuli which cue appropriate problem-solving skills. The feedback stimuli produced by attention determine the course of learning.

4. The successful execution of higher level skills (inputting and manipulating stimuli) is a motivating condition. These skills are under reinforcement and discriminative control of question-correlated stimuli.

5. Behavior is under direct control of an instructional event, such as a question, to the extent that it

1) discriminates between stimuli in terms of their reinforcement properties (sets a goal)
2) elicits appropriate problem-solving skills. (pp. 329-30)

In recent years the principle of mathemagenic activities has served as a basis for a substantial number of studies which were conducted with respect to cognitive learning from written materials. The following selected studies provide a general review of the nature of this work and are considered to be benchmark studies in this area.

Rothkopf (1966) examined the effects of adjunct, test-like events, namely questions, on learning from written materials. In this particular study he had college students read a 5,200 word selection from Rachel Carson's The Sea Around Us which had been divided into seven sections of approximately equal length. One criterion he used was a test composed of 14 questions intended to measure specific learning resulting from experimental questions asked in the text.
the other criterion was a general test which was made up of 25 items that had not been used as experimental questions. Rothkopf had six treatment groups: (1) "SBA"--subjects were given two questions shortly before each of the seven selections. After writing their guesses, the subjects received the correct answer; (2) "SB"--the same treatment as SBA except that the subjects were not furnished with the correct answers after making their guesses; (3) "LBA"--subjects were provided with 14 questions at once before starting to read the chapter, and they were given the correct answers after having guessed an answer for each question; (4) "SAA"--the subjects received two questions immediately after each of the seven sections. The correct answer was given as soon as the subjects responded to each question; (5) "SA"--the same treatment as SAA except that the correct answers were not furnished after the subjects gave their answers; (6) Control--no questions at all were presented in the text; (7) "DRG"--the direction reference group was the same as the no-questions control group, except that the subjects in this group received specific instructions to read the passage carefully.

Results of this study showed that the SA, SAA, and DRG groups performed better on the 25-item general test than all other groups. All the groups which received questions performed significantly better on the 14-item specific learning test than those groups which did not. The groups that were
given answers after responding did better on the 14-item specific test than did those who were given no answers. As a result of this study, Rothkopf concluded that: (1) recall of both specific and general information was facilitated by questions which were presented to the subjects after they had read the relevant passages, (2) recall of question-specific information only was facilitated by questions presented to the subjects before they read the relevant passage and (3) the presentation of the correct answers produced the greatest recall of question-specific information.

A study by Rothkopf and Bisbicos (1967) hypothesized that if the increased learning of information contained in nonpracticed items is a result of putting questions within a lesson and is caused by getting the subjects to pay closer attention, then focusing the questions on a certain kind of content should strengthen the attention to this particular kind of content. A total of 252 high school students were asked to read a 36-page, 9,000-word section from The Sea Around Us. Two questions appeared in the text per three-page zone, but the questions differed in position (before or after the relevant segment) and in the type of response required. Different treatment conditions received questions which elicited answers from one of the following response types: (a) either a proper name or a quantitative term such as a distance or a date, (b) a common English word or a technical term such as "bathyscaphe," "phototropic,"
etc., and (c) a mixture of both (a) and (b). After reading
the passage, each treatment group was given the same 48-item
criterion test. Again, posttest performance on nonpracticed
items was shown to have been improved by the asking of ques-
tions after the student had read the relevant portion of the
selection. The presentation of a restricted category of
questions within the passage facilitated performance on non-
practiced achievement test items within that category. The
researchers also noted that this effect was somewhat greater
for achievement test questions based on the second half of
the passage than those based on the first half; they believe
that this occurred because time was needed for the questions
within the passage to shape and focus the reader's atten-
tion.

Rothkopf and Bloom (1970) examined the effects of
written versus orally communicated questions on learning
from written materials. Sixty-three high school students
studied a 16,000-word earth science text which was presented
to them individually on 180 slides. For one experimental
group, a written question which was related to the reading
material appeared every sixth slide. The subject then wrote
down an answer on a piece of paper, but did not receive any
information about the correctness of the response. The
second treatment group was given an oral question asked by
the teacher after every sixth slide. No questions in any
form were presented to the control group. Results of this
study showed that the oral question group scored significantly higher on a recall criterion test than did the group which received written questions. Also, both groups that were given questions in either the printed or oral mode scored significantly higher than did the control group.

Frase's study (1968b) which was somewhat similar to that of Rothkopf and Bisbicos (1967) replicated the finding that retention was greatest when questions were placed after the appropriate material. The 128 college students who took part in this study read a 2,000-word selection about the life of William James. Instead of putting the questions at two or three page intervals, Frase inserted the questions at the rate of one question every 10, 20, 40, or 50 sentences. Data gathered from this study showed that retention tended to be greater when posttreatment questions were given frequently, but retention tended to be lesser when frequent pretreatment questions were presented.

In another study, Frase (1968a) explored the problem of what happens to the retention of information contained in a passage when an orienting question which requires the subject to process a relatively large or a relatively small amount of the total information contained in that particular passage is asked. Eighty-four college students were given 20 seconds to read a question and a 36-word paragraph. All the subjects read the same paragraph, but they were given different levels of questions. One group was given a
question of a specific nature; another group's question was of a comparative type; and the third group received a question of a general nature. Each experimental group read its question before reading the passage. Results of this study indicated that (a) the most precise question (i.e., specific > comparative > general) brought about the most efficient acquisition of the specific stimulus-response association; in other words, more subjects in the specific question group passed the test item which was relevant to their question, and (b) when performance on the total retention test was the criterion, the groups scored in the same order (i.e., specific > comparative > general). Result (a) is consistent with Frase's hypothesis, but result (b) is the opposite of what had been expected. It had been thought that the general orientation question would cause the subjects to process greater amounts of information and thus cause an increase in their overall retention. Although the results of this study did not support this position, they did furnish some evidence for the selective information rejection (attention) position suggested by Berlyne (1965) and Schroder, Driver and Streufert (1967) who hypothesized that the greater uncertainty created by the comparative and general questions would cause the subjects to engage in information rejection strategies so that the information load of the paragraph might be reduced. Data gathered from another project which was a part of this same study by Frase supported
this position. Frase states: "The general conclusion seems to be that as effective uncertainty or information load increases, precise control over reading behavior becomes more imperative" (p. 201).

In summary, it can be said that a fairly consistent pattern has emerged from the results of Rothkopf's initial study and those subsequent studies which used similar materials and methodological procedures. All of the investigations conducted by Rothkopf (1966, 1972), Rothkopf and Bisbicos (1967), Rothkopf and Bloom (1970), Frase (1967, 1968), Frase, Patrick, and Schumer (1970), Boyd (1973), McGaw and Grotelueschen (1972), and Snowman and Cunningham (1975) were concerned with factual materials and questions; other factors common to these studies were the adult subjects and the immediate posttests where looking back over the material was not permitted. With a few minor exceptions, the studies listed above tend to give support to the following results:

1. Inserted questions which appear before the material to which they refer (prequestions) have a substantial specific facilitative effect but no general facilitative effect.

2. Inserted questions which come after the material to which they refer (postquestions) have a substantial specific facilitative effect as well as a small general facilitative effect on posttest scores. In other words, both prequestions and postquestions facilitate incidental learning (Faw
and Waller (1976).

In concluding this particular section of the review it is appropriate to mention and to describe a work which has served as a forerunner to the studies of mathemagenic behaviors by Rothkopf and others. This study conducted by Washburne in 1929 tested 1,456 eighth and ninth graders on a 3,000-word passage, which was presented under five treatment conditions: questions presented Long Before the passage (LB), i.e., the questions were presented in a block at the beginning of the passage; questions interspersed Shorty Before the appropriate paragraph (SB); questions interspersed Shorty After the appropriate paragraphs (SA); no questions, Control (C); and questions presented Long After the passage (LA), i.e., the questions were presented in a block at the end of the passage. As a measure of retention, the same 55-item multiple-choice test was given to all of the treatment groups. Washburne categorized these questions in nine different ways and analyzed the results for each category.

As a result of his analyses, Washburne concluded that the best placement of questions is at the beginning of a chapter or story.

According to Carver (1972), however, a reanalysis of Washburne's data furnishes a somewhat different interpretation of his results. When the mean scores presented by Washburne are converted into percent scores, i.e., percent
of questions answered correctly, the scores from all treatments are more or less equal on an absolute percentage scale. The four experimental groups differed from each other no more than five percentage points when scores on the retention test questions that were based directly on the treatment questions are averaged. The control group, i.e., the group which received no treatment questions, answered 5% less than the IA group and 10% less than the LB group. When the same reanalysis is applied to the retention test questions that were not based on the treatment questions, i.e., general retention questions, all groups, including the control group, scored within five percentage points of each other, and no group scored higher than the control group.

Carver's reinterpretation of Washburne's data seems to suggest that the use of questions in connection with learning from prose materials may have a small facilitative effect on the ability to answer these same questions when they appear later. However, the lack of a facilitative effect on the general retention of the prose materials makes the use of treatment questions somewhat dubious. A study by Holmes (1931) tends to support this interpretation of Washburne's results; Holmes found that general retention was decreased by the insertion of treatment questions during reading.

Questions Used in Pre-, Post-, and Interspersed Positions to Facilitate Reading Comprehension

Rothkopf (1970) coined the term "mathemagenic behavior" to describe the attending behaviors which give birth to
learning. In studies of attention and learning from continuous material, it was found that test-like questions given before or after the material to be learned are mathemagenic (Rothkopf, 1966; Frase, 1967, 1968b, 1968c; Bruning, 1968). It was found that both prequestions and postquestions facilitate learning but to different degrees. Prequestions were found to facilitate question-specific learning (Rothkopf, 1966; Frase, 1967, 1968b, 1968c) but inhibit learning of material to which the student was not directed. In other words, prequestions tended to narrow the range of attention by providing the individual with a criterion for acceptable behavior. Postquestions, however, facilitated both question-specific and general learning because attention is paid to the whole passage, not to a particular stimulus within the passage.

Rothkopf and Billington (1974) theorize that external events such as questions can lead not only to (a) the activation of memory structures specifically required to answer each question but also to (b) the activation of internal representations which are topically related to adjunct questions and much broader in scope. The activation of other topically related memories implies that the chain of hypothesized internal events which result from a question can facilitate other subsequent test performances. Rothkopf and Billington believe that facilitation occurs because (a) the internal representations, through the principle of exercise,
have general instructive properties that produce relatively permanent changes in memory (review); or (b) the question temporarily activates topically related domains in memory and therefore makes sufficient responses to other topically related questions temporarily more accessible or more likely to occur (priming).

The sequence of events involved in the use of prequestions is described by Bull (1973) as follows: the question, the attentive response, the specific statement which serves to reinforce the attentive response. In the case where prequestions are used, the discriminative stimulus comes before the attentive response to the passage. This serves as a discriminative cue for specific stimuli.

The results of a study by Peeck (1970) show that the specific facilitating effects of prequestioning, found in studies utilizing measures of immediate retention, can also be obtained in a design using delayed retention. Also, there is an indication that this facilitation might be accompanied by a deterioration of retention of question-irrelevant information. Experiments with prequestions seem to indicate that prequestions are useful when retention of specific information is desirable, although depression of retention of other contents may have to be accepted as inevitable. Moreover, Peeck believes that, with regard to the total amount of knowledge acquired, time spent on prequestions might just as well be used for merely extending the
amount of time for reading the material. The outcomes of Peeck's study seem to indicate that the facilitating effect of the prequestion only occurs if, during learning, the subject either remembers the question or recognizes certain information as relevant to it.

The insertion of questions in prose materials has been shown to facilitate learning from the material (Rothkopf, 1966). The effects of these questions are both direct and indirect; the direct effects facilitate performance on subsequent performance on identical questions; the indirect ones facilitate performance on other questions about the text materials. The effect is marked when the questions refer to preceding material in the text (postquestions) but may even be reversed when they refer to subsequent material (prequestions). This phenomenon was observed in studies by Frase (1968), Frase, Patrick and Schumer (1970), and Rothkopf (1966).

The research of Frase (1967, 1968a, 1968b) and Bruning (1968) supported the theory that the insertion of questions in reading material, either before or after the section of the passage on which they are based, tends to improve performance when compared to the performance of a group receiving no questions when the same questions are repeated on the criterion test. These studies also confirm that performance on nonpracticed criterion test questions improves only when questions are inserted in reading material after the
relevant passages.

McGaw and Grotelueschen's study (1972) indicated that the initial effect of inserted questions may be forward, shaping appropriate inspection behaviors. In addition, superior performance on criterion items immediately after questions suggested that the forward effect is mediated through increased attentiveness. Superior performance on criterion items dealing with the same section of text as the inserted questions, but constructed so as to exclude the possibility of direct transfer, suggested a facilitative review effect—the facilitation resulting from the memory search initiated by the inserted questions.

As a result of his study, Kuehls (1976) theorized that the efficiency of a particular mathematics text depends on the ability and achievement level of the mathematics student. Students at high levels of achievement and ability, when taught by a text that has questions inserted periodically, should do at least as well as when taught by a conventional text. However, those students of average or below-average achievement and ability would probably profit more from a text that has questions inserted every so often.

Questions Used in Connection with Listening Comprehension in the Learner's Native Language

Sticht (1972) discusses the kinds of problems which learners face when they have to deal with processing listening comprehension materials at the semantic level. He
suggests that:

... listening (as well as reading) materials are remembered best when the listener uses some organizational procedure to sort, classify, label, etc., the incoming information. For this reason, training at the semantic level focuses on training for organizing incoming information. Such training should prepare the listener to use different organizing principles when listening to various sorts of materials for a variety of purposes. For instance, the student may be instructed in the "typical" structure of a speech and be given training in listening for different purposes at different places in the lecture or speech. To do this, questions might be strategically placed in the program to attempt to "shape" the occurrence of different organizing practices when listening to speeches, lectures, etc. (p. 299)

Sticht (1972) suggests that an area of research which may be advantageous when applied to learning by listening is that dealing with studies of "mathemagenic behaviors" as developed by Rothkopf (1965) and applied to mathemagenics by Frase (1968). For Rothkopf, the term "mathemagenic" refers to behaviors that bring about learning. According to the mathemagenic hypothesis, information from printed material can be acquired and retained when a variety of continuous explicit and implicit responses are made by the reader. These responses can be influenced by the use of test-like events (such as questions) which accompany the reading materials. Several studies have used stimulus questions to elicit various mathemagenic behaviors; variables explored include the pacing or frequency of questions, the relative value of asking questions before as opposed to after a reading selection, etc.
Sanders and Glass (1970) and Sanders (1970) used questions in an attempt to improve the learning of normal-speed listening materials. They reported that questions which asked for general information, as opposed to questions which asked for specific details, when given after a segment of listening materials, brought about better performance on these questions when they were asked later. Such questions did not improve the learning of material not directly elicited by the questions which were asked. A somewhat lesser improvement was produced by asking questions prior to listening to a segment of listening materials. The above mentioned effects, however, did not reappear in the work of Sanders, who, in aural presentations, found no differences between questions given before versus questions given after. His work tended to support the finding that questions inserted into the aural presentation focused the learner's attention on information relevant to that question. This was shown by improved performance on these questions when they were given in the criterion test. One noteworthy aspect of the study by Sanders and the one by Sanders and Glass is that they found a large number of variables which could interact to influence student performance. These researchers further point out that the generalizability of the use of any one of the several variables is limited by the very presence of these variables. Finally, it should be noted that in neither of the previously mentioned studies did
guiding questions aid in improving performance on criterion test questions which had not been asked during the presentation of the material.

Luderer (1976) examined the effects of prefatory statements (advance organizers) on the listening comprehension of fourth and fifth graders and found no significant difference in listening comprehension between students using prefatory statements and students not using prefatory statements in the stories to which they listened.

In their study of the additive effects from interspersed adjunct questions in prose text, Sagraria and Di Vesta (1977) concluded that prefatory statements were of limited value in bettering the listening comprehension of fourth and fifth graders and that prefatory statements did not significantly affect listening comprehension of any particular reading level.

In a study of the effects of inserted postquestions on learning from slide-tape presentations, Dayton (1976) found that the use of postquestions (either inserted or grouped) significantly increased intentional learning over that resulting from the no-question treatment; the use of such questions, however, did not increase incidental learning.

Although he found no significant differences when he analyzed the relative effectiveness of interspersed questions presented by visual and audio channels as a means of enhancing learning in an adult teaching/learning situation,
Hord (1976) did note some interesting differences between test scores. He expected the group receiving questions inserted in both channels to score the highest; on the contrary, this group scored 1.73 below the total n mean. The groups receiving either audio or visual single channel questions were expected to score second highest. These groups scored within .11 of the total n mean. Finally, the group receiving no questions at all was expected to score the lowest. On the contrary, this group scored 1.71 above the total n mean. Hord's results were completely reversed to the order of expected outcomes. This tends to suggest that there is the possibility of interference on the part of interspersed questions.

In an examination of the interactive effects of adjunct questions, field orientation, and intelligence on the learning of audio taped material by adult learners, Skiba (1975) found some support for differential question position effects which indicated that questions before the relevant text were less effective than no questions and that questions after the text were not significantly better than no questions.

A study by Tutolo (1971) examined the effect of question position, question pacing, and intelligence on recall of factual material in listening. Results of an analysis of variance on recall data indicated that there were significant differences favoring those subjects who were given
questions after listening to the passage and a higher level of performance for those subjects in the high IQ classification.

Berliner (1968) hypothesized that the use of test-like events, in the form of questions, during a lecture would facilitate learning from the lecture. The treatment groups were given different schedules of short-answer questions which were to be answered in writing during the 45-minute lecture. One control group was told to take notes during the lecture; the other control group merely paid attention to the lecture. On tests for immediate and delayed recall, the mean scores for the treatment groups were higher than those for the control groups. The highest mean scores were achieved by the groups which received questions more frequently. The data from the study tended to show that merely paying attention during a lecture was an inefficient learning strategy and that the use of test-like events, namely questions, during a lecture showed promise of being an effective means for facilitating learning.

Remy (1976) inserted higher-order questions in audio-cassette programs with the intention of stimulating critical thinking. Her major hypothesis, that critical thinking may be improved by inserting questions into the context in audio tapes, was not supported by the data. She assumed, then, that the results with regard to the use of audio tapes to help students to think critically were inconclusive. At the
end of her project, however, she did notice that among the
groups there was a significant difference which tended to
favor the experimental groups; the groups that used the
tapes scored higher than those control groups that used no
tapes at all. She also reported a positive correlation be-
tween the time spent in listening and the gains in critical
thinking scores among the experimental groups.

QUESTIONS AND THEIR ROLE IN FOREIGN LANGUAGE LEARNING

Introduction and Discussion of the Role of
Questions in Connection with the Reading and
Speaking Skills and with Culture

Questions have long been used in the foreign language
classroom as one of the major means of involving the learn-
ers in actual use of the foreign language. A quotation from
Palmer (1932) illustrates this importance:

Conventional question-and-answer work is the
most effective of all the language-learning exer-
cises ever devised. In its various forms and
grades it initiates, develops, and utilizes the
natural language-learning forces with which we are
all endowed. It is the quickest and most effec-
tive approach both to the spoken and to the writ-
ten aspects of the language; it is the shortest
cut to reading; and it may be adapted for purposes
so diverse as the teaching of conversation, of ab-
stract grammar, of composition, and of pronuncia-
tion.

The essential point of the procedure [i.e.,
the role of the question, as seen by Palmer] is
this: the teacher asks a question in the foreign
language; the pupil, borrowing most or all of the
material contained in the question, answers it.
(p. 111)

Kirch (1969) maintains that a skillful approach to
questions will yield dividends at every level of learning.
He claims that many foreign language teachers are not aware of the different types of questions and the functions each question serves. As a result of this lack of familiarity with question types, teachers do not always have the kinds of results they would like to have from the questions they have used with their students. He reinforces the principle that learners not be asked a question for which they do not have sufficient grammar and vocabulary to formulate an answer. He presents questions from the viewpoint of their linguistic difficulty: alternative and echo types or those requiring a "yes" or "no" answer are the easiest ones for learners to deal with; more difficult, then, are the "who," "what," "when," and "where" questions; these are followed in difficulty by the "how" questions; the "why" questions are seen by him to be the most difficult of all. For Kirch, "A skillful approach to questions will yield dividends at every level of FL learning" (p. 40).

In his doctoral dissertation, Murphy (1968) discusses the contributions of social studies methodology to foreign language teaching. Foremost among these contributions is the use of questions, specifically questions selected and devised according to a taxonomy. He calls for greater use of questions in the foreign language classroom, and he describes a system of classification based on Bloom et al.'s Taxonomy. He gives examples for French of how the question categories operate at the memory, translation, and
interpretation levels of the taxonomy; he does not, however, include examples of questions which function at the application, analysis, synthesis, and evaluation levels of the taxonomy.

Hurman (1974) comments on the oral exploitation of a text. He differentiates between the difficulty intrinsic in this type of exercise and that of an ordinary conversational exercise. The latter is characterized by one input (the listener) and one output (the speaker). The former exercise, however, involves two inputs (the text and the question) and the output (the pupil). Because the pupil must contend with two inputs and be able to process them both in order to give an adequate and acceptable response, Hurman sees this as a far more difficult and involved task. Furthermore, Hurman suggests that the teacher can help the learner in this task by first having the learner answer questions which call for information explicit in the text. Questions should, then, move along a continuum, with those at one end of the continuum calling for answers involving language and ideas explicit in the text; the questions at the opposite end of the continuum would elicit answers involving the use of spontaneous language and the expression of the learner's own ideas.

Hurman proposes a five-part system for categorizing questions on the basis of their difficulty and illustrates this system with examples for a French lesson.
According to Harrell (1971), questions used in a foreign language class can serve as a tool for communication. Questions can "orient, involve, pace, pinpoint, dramatize, and individualize" (p. 3). Questions used properly at any level of the instructional sequence can help learners to develop their skills of generalization and to realize their full potential as individuals. For Harrell, the question goes beyond the realm of the academic and into the realms of the affective. She claims that:

The student will instinctively welcome questions which say to him:
- Define your tastes.
- Reflect your own reaction to great literature.
- Demonstrate the universality of your sense of the esthetic.
- Confirm yourself as a moral force. (Defend your essential convictions.)
- Demonstrate your artistic discrimination by saying with skill exactly what you mean. (p. 5)

Kosnik's "Kaleidoscopic Approach" (1975) to the teaching of the techniques of cross-cultural analysis utilizes both narrow and broad questions as the mainstay of a bias-free system which would enable students of a foreign language to penetrate beyond the surface phenomena of a culture and reach greater depths of understanding of how the culture functions. This approach, which is designed to be bias-free, aims at developing the processes by which students analyze--and learn how to analyze--cross-culturally. Kosnik sees the use of carefully planned, carefully constructed question strategies as an effective means to this
end. In a unit on French and American eating habits, she shows how the relevant content, method, and techniques might be combined.

In addition to playing an important role in the teaching of cross-cultural understandings, questions can also play a significant part in the development of the reading skill. King, Holley, and Weber (1975) touched upon one of the important uses of questions in connection with the development of the reading skill when they suggested that research be done to see under which conditions learners of a foreign language comprehend better with prequestions and under which conditions postquestions help learners better.

To this end, Evans (1979) examined the effects of three types of question placement (pre-, post-, and interspersed) on the reading retention of relevant factual material (information asked for in the pre-, post-, and interspersed questions and also asked for on the criterion test) and non-relevant factual material (information not asked for by the pre-, post-, and interspersed questions but asked for on the criterion test). Foreign students studying English as a second language were the participants in this study. He reported that, for the students who were tested, postquestioning seemed to give fairly consistent results, while prequestioning, in comparison, yielded as good or slightly inferior retention of relevant material. Evans also found that questions in the post position, whether they are interspersed or
positioned after the entire passage, tended to promote better retention of non-relevant material.

According to Evans, both postquestions and prequestions can play a valuable role in an instructional program for learners of English as a second language. He states that if optimum retention of both relevant and non-relevant material is the goal of instruction, then postquestions would be very helpful to the learners. If, however, the retention of non-relevant material is not a crucial issue and if using some preliminary guide questions has been found to have a motivational effect on learners, then prequestions would be useful in the instructional program.

So that the repetition phase of vocabulary and structure acquisition in the foreign language might be less boring and more meaningful for the learners, Woodruff et al. (1979) present four steps to deal with this aspect of foreign language learning. Questions which range from "Is this a/an ___?" (Step 2) to "What is this?" (Step 4) are assigned to the various steps:

Step 1. Presentation for Identification
Step 2. Practice in Identification
Step 3. Practice in Oral Imitation
Step 4. Practice in Oral Communication (p. 65 et seq.)

Benya and Evans (1979), after examining the functions and purposes of questions, present some ways in which questions can be adapted for the foreign language classroom. Their main concern is with showing ways in which questions, especially the higher level ones, can be used with learners
in the beginning levels of a foreign language learning pro-
gram.

The Use of Questions to Facilitate Listening
Comprehension in the Foreign Language

A justification for the use of prequestions in facili-
tating listening comprehension comes from Chastain (1976) in
his discussion of the nature of comprehension. He states
that what the students hear consists of sounds, words, and
structures and that, obviously, students should be taught
these elements before being asked to attempt to comprehend
sentences, conversations, or monologs in the second lan-
guage. Further, he points out that students may know all
three language components and still not be able to under-
stand anything of what they are hearing in the second lan-
guage. Although they have all the pieces necessary, the
students still need very many opportunities to use the code
they have learned to decipher the messages they are receiv-
ing in the new language they are learning. They have to
learn what to look for and what to expect. They also have
to learn what to do when they cannot comprehend what they
are hearing, what to do when they become utterly confused.
They need to listen for the meaning of the sentence.

In a study involving students of English as a foreign
language, McDonough (1977) examined the hypothesis that
questions may have different effects on delayed recognition
of aural material according to whether the students read the
questions either during or after the passage, and whether
the questions which were used tested for either content or expressions. McDonough decided not to use a prequestion treatment because the participants were available for a limited time, sufficient only for four trials but not six and because Rothkopf's work suggests that the third condition (questions before passage, i.e., prequestions) gives rise to less incidental learning.

The measure of retention reportedly used by McDonough for this study was performance on a single question given on paper after an intervening neural activity (counting backwards in threes or fours from 200 or 300). McDonough compared this single question to a probe, checking the amount of information from the passage still retained after the delay enforced by the irrelevant intervening neural activity. This "probe question" was designed to elicit a piece of information which could have come from anywhere in the passage and for which the students had not been primed by being asked about before. This "probe question" was therefore considered to be a measure of incidental learning, i.e., the learning of material apart from or incidental to material already given some practice by the sets of questions used in conjunction with the passages themselves.

With regard to performance in the various trials on the set of comprehension questions, McDonough reports that the differences within the experimental group (ten Francophone African students at the Colchester English Study Centre)
were nonsignificant; i.e., presenting questions after or during the passage does not have much effect on the responses to the questions themselves, regardless of the type of question involved. This same report of nonsignificance held true for the native speaker control group (seven native English M.A. students at the University of Essex). Table 1 shows the mean number of correct answers for each trial for each group. The total number of questions per trial was seven.

An examination by McDonough of the effect of the interaction of the timing of the questions and the type of questions on incidental learning, i.e., on the delayed probe question, showed a clear, though not significant trend tending to favor the "after" condition for both types of questions. Table 2 shows the results of this aspect of the experiment, with the number and the percentage (in parentheses) of subjects scoring correctly on the probe.

THE PREPARATION OF LISTENING COMPREHENSION MATERIALS FOR USE IN THE FOREIGN LANGUAGE CLASSROOM

According to Chastain (1976), it is essential that the foreign language teacher develop listening comprehension activities that encourage students to practice listening comprehension at the communication level. The teacher should not emphasize vocabulary building, knowledge of grammar, translation of individual words, repetition to the point at which the students are concentrating merely on
# TABLE 1

MEAN NUMBER OF CORRECT ANSWERS (OUT OF A POSSIBLE OF SEVEN) FOR EACH TRIAL FOR EACH GROUP: McDonough's Study

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>DURING</th>
<th></th>
<th>AFTER</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>Experimental</td>
<td>Control</td>
<td>Experimental</td>
<td>Control</td>
</tr>
<tr>
<td>Treatment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td>3.9</td>
<td>6.3</td>
<td>4.2</td>
<td>4.7</td>
</tr>
<tr>
<td>Content</td>
<td>5.5</td>
<td>6.3</td>
<td>4.5</td>
<td>6.3</td>
</tr>
</tbody>
</table>
### TABLE 2

NUMBER AND PERCENTAGE OF SUBJECTS WHO HAD CORRECT SCORES ON THE DELAYED PROBE QUESTION: McDONOUGH'S STUDY

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>DURING</th>
<th></th>
<th>AFTER</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td></td>
<td>Experimental</td>
<td>Control</td>
<td></td>
</tr>
<tr>
<td>Treatment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td></td>
<td>2(20%)</td>
<td>6(85%)</td>
<td></td>
</tr>
<tr>
<td>Content</td>
<td></td>
<td>4(40%)</td>
<td>7(100%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condition</th>
<th></th>
<th>Experimental</th>
<th>Control</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expression</td>
<td></td>
<td>5(50%)</td>
<td>4(57%)</td>
<td></td>
</tr>
<tr>
<td>Content</td>
<td></td>
<td>8(80%)</td>
<td>6(85%)</td>
<td></td>
</tr>
</tbody>
</table>
individual words or structures, or asking for the first language meaning of words (Mueller, 1974). In addition, the teacher should be extremely careful not to expect comprehension of minute details in any of the follow-up activities. Otherwise, the teacher will be strengthening for the students practices which they must avoid if they are to learn to understand a native speaker.

Any foreign language teacher faced with the above caveats can take heart from the suggestions offered by Grittner (1969). He states that by using rearrangements of familiar lexical items, the teacher can give students listening experiences of increasing complexity. Any unfamiliar items which appear in such presentations should be taught in advance so that the student's attention is not drawn toward the puzzling new vocabulary items and away from the message carried by the exercise. Students tend to become discouraged if they have to stop constantly to worry about the meaning of new words or the function of structures totally unfamiliar to them. Grittner also notes that any new vocabulary items which appear in the listening exercises need not be taught for active use.

Jones (1977) warns that it is not an easy task to construct an objective listening test which measures only those cognitive operations that deal exclusively with language and communication. Corder (1973) also cautions that if a "test [or listening comprehension exercise] is to be truly valid,
we must avoid, as far as possible, testing such cognitive factors as general intelligence, knowledge of the world and the belief system of the learner, or his general motor-perceptual skills" (pp. 359-360).

For the process of selecting the types of passages to be used in a given test or listening comprehension activity, Clark (1972) offers the following basic considerations:

1. The passage should reflect some use of spoken language which can be found in normal, everyday communication situations, such as conversations, monologs in the form of lectures, announcements, news reports, commercials, etc.

2. Only those types and kinds of spoken language with which the students have had formal exposure in the classroom should be used for the passages.

In addition, Clark (1972) advises using several shorter listening passages, each with several test items, rather than basing a similar total number of test items solely on one or two longer passages. He believes that this will help to avoid the inordinate penalizing of students who for some reason or another may not be very familiar with the material presented in a particular passage and that it will at the same time furnish a somewhat broader and more representative sample of passage types and content.

In the formulation of questions to be used for evaluating the student's ability to follow a long passage or conversation, Valette (1967) states that the question must be
phrased in a format which is clear and easily understood. The wording of the questions should be such that it is not vague and misleading, thus causing the student to do badly on a comprehension test of the passage even in spite of the fact that he did understand the passage.

In a discussion of the use of the foreign language versus the use of the use of the native language as the modality for the multiple-choice format, Clark (1972) says that the formats—"multiple-choice, foreign language reading" and "multiple-choice, native language reading"—present much flexibility for item-writing. He states that items given in the foreign language would be preferable to items given in the native language for use with students whose reading comprehension ability in the foreign language is such that they can adequately deal with multiple-choice items in the foreign language. Options given in English do, however, raise the use-of-native-language question, but this may be the only alternative for students whose training has not emphasized reading practice in the foreign language. Clark recommends that it is best to keep any multiple-choice items given in the foreign language at the lowest level of language difficulty when they are used to test listening comprehension, no matter what the student's reading ability in the foreign language is.

With regard to the number of test items that should be used per selection, Clark (1972) believes that one cannot
state a general rule for how many items should be devised for passages of varying lengths. This is due primarily to the fact that there are many types and styles of passages, and these differ greatly in the nature of their content as well as the ease with which significant comprehension questions can be written for the passages. Clark advises that one ask as many questions as possible for each passage; he cautions, however that care must be taken not to ask questions that are designed to elicit information that is not clearly stressed in the passage.
CHAPTER III

DESIGN AND INSTRUMENTATION OF THE STUDY

Introduction

Chapter III presents a discussion of the design and instrumentation of the study as well as a description of the procedures which were used in the planning stages of the study.

The "Preliminaries" section contains a detailed description of how the instruments to be used in the study were prepared. This includes selection of the material for the tapes, generation of the guiding questions, and generation of the distractors which were used for the multiple-choice items on the criterion test.

The "Pilot Study" section describes how the time allotted for the pilot study was used for a two-fold purpose: one, to test the procedures themselves which included using the tapes for the four treatments; and two, to gather data for use with the item analysis in order to make decisions about which questions to use for the actual study.

The section in which the study is described discusses how the instruments to be used in the study were refined and also how the study itself was implemented.
Preliminaries: Preparation of the Instruments to be Used

Selection of the Passages

Six passages were selected from various elementary Spanish texts and checked to insure that the vocabulary and grammar contained in them were included in the instructional materials already being used by the students to be tested. This task was made possible since the textbook which was being used for the Spanish 103 classes contained in its appendix a Spanish-English dictionary which, in addition to providing the English equivalent of the Spanish word, also indicated the lesson in which the word was first introduced. The departmental syllabus was consulted in order to help the researcher determine what lesson the Spanish 103 students would be studying at the time the data gathering process would take place. The dictionary in the appendix of the textbook was consulted in order to ascertain that the words being used in the listening passages did indeed appear in the lessons prior to the one being studied at data-gathering time. These materials were then edited wherever necessary so that they would not contain any grammar or vocabulary unfamiliar to the students; the only new words were cognates. A native speaker of Spanish then reviewed the passages to make sure that the selections contained no incorrect language.

In a meeting of a panel of judges consisting of several of the instructors teaching Spanish 103 during the winter
quarter, 1979, each instructor was given a set of the six passages and was told that these selections were the ones being considered for use as the listening passages in the proposed study. The instructors were asked to rank the passages from 1 to 6, with the number 1 representing the passage which most conformed to the criteria of: a) interest to college students, and b) overall comprehensibility by the students in their third quarter of beginning Spanish; the number 6 was used to designate the passage which least conformed to the above criteria. On the basis of a tally of the instructors' ratings, the researcher determined which of the three passages were considered most appropriate for this study. The selections chosen were:


Preparation of the Treatment Tapes

At the recording studio of the Telecommunications Center of The Ohio State University, the researcher and a native speaker of Spanish recorded the four treatment tapes to be used in the study. The researcher read the
introductions and instructions in English; the native speaker read the Spanish passages.

A female native speaker was used because of her availability as well as the clarity of her voice and the fact that her accent would be classified as "standard" Spanish. In addition, this native speaker had had previous experience in recording materials for classroom use. Some evidence indicates that the speaker's sex does not have a significant effect on the listening comprehension of native language recorded at a normal rate of speed (Kibler, Barker, and Cegala, 1970). The sex of the speaker, therefore, did not seem to be a crucial issue. The voice quality of the native speaker was judged to be representative of the speech of native speakers of Spanish; this assumption is consistent with that made by producers of commercially recorded materials for use in foreign language classrooms. With regard to the rate of speech used for the Spanish portions of the tapes, the native speaker was instructed to speak at a rate of speed which she would consider appropriate if she were giving a listening comprehension exercise to the students in a Spanish 103 class that she might teach.

The laboratory technician inserted the appropriate pauses as specified by the tapescript. Copies of the scripts for each treatment and the time intervals specified appear in the appendix.
Generation of Guiding Questions and Test Items

For each of the three passages, two sets of questions were written. These questions asked about information which, in the researcher's opinion, was most crucial to the comprehension of the passages. The first set of questions was presented in a pure question-type or interrogative format; whereas the second set of questions followed the completion type of format. Copies of the original sets of questions for each passage appear in the appendix.

Generation of Distractors

For the purpose of generating plausible distractors, the researcher received permission from a teacher in a local high school to work with her Spanish II and III classes and from an instructor at an area college to work with her beginning and intermediate Spanish classes during winter quarter, 1979.

Prior to visiting the schools, the researcher recorded each of the passages on an audio cassette tape. She then went to the high school and college classes and explained the purpose of the study. The students were asked for their cooperation in the study; they were also told that their performance would not affect their grades in any adverse way. The researcher did, however, point out that by listening to the tapes they, the students, would have some additional practice in hearing someone else speak Spanish. The students were advised that they were not obligated to
participate; however, they willingly consented to cooperate.

The researcher passed out the papers containing the two sets of questions (interrogative and completion) for Passage I and asked the students to read them before listening to the first selection. When the students had finished reading the questions for Passage I, the researcher instructed them to sit back, relax, and listen to the first passage. The students were also advised not to attempt to write anything while they listened to the passage since this might cause them to miss a portion of the selection.

When the first passage was finished, the students were instructed to answer as many of the questions as possible; they were encouraged to guess at an answer if they did not feel exactly sure of a response. They were told that "guessing is good" and that there was no penalty for doing so. After the students finished writing their answers, the researcher collected their papers.

The same procedure as described above was followed for the second and third passages as well.

Afterwards, the researcher reviewed the passages with the students and discussed the meanings of the passages. The students were invited to indicate their overall reaction to the passages. The teachers of these classes received written copies of the passages and the related questions so that they would have them on hand if they wished to do some follow-up work with these materials.
Later, the students' incorrect answers to the questions were examined, and a number of these incorrect answers were used as the distractors for the multiple-choice items. The multiple-choice items used for the final study are in the appendix in each of the treatment booklets.

**Selection of the Items**

Inclement weather and scheduling constraints early in the week of the pilot study prohibited the researcher from gathering data from the two classes that had been previously designated for the purpose of item analysis prior to the actual pilot study. Therefore, instead of using the pilot study scheduled for later in the week for the purpose of testing out the entire procedure as it would be presented for the actual data gathering process in spring quarter, the researcher decided on an alternate plan for making use of the time allotted by the Spanish department for the pilot study.

**The Pilot Study**

During the week before the pilot study was to take place, the researcher visited the Spanish 103 classes whose instructors had given permission for the researcher to make contact with their students. The researcher explained the general nature of the study, asked the students for their cooperation, and indicated that this research session would take place in the listening center at the time of their regularly scheduled Spanish class and would be in lieu of
that day's Spanish class. Students who chose not to participate in the listening session would be provided with a reading assignment furnished by the researcher. In other words, this was not to be a free day; the students were advised that attendance would be taken. The students who were willing to participate in the study were asked to sign the consent form required by the Human Subjects Committee at The Ohio State University and return it to the researcher at that time. On the day before the study was to take place, the Spanish 103 instructors reminded their students to report to the listening center on the following day to participate in the listening experiment.

Students from five classes agreed to participate in the study. Because not enough students took part in the item analysis study and because the five items needed per passage would not be selected in time, it was decided to use the time allowed for the pilot study in two ways:

1) A morning class and an early afternoon class were chosen to answer all the multiple-choice items to be used for item analysis data.

2) The remaining three classes took part in what amounted to a procedural pilot.

For the procedural pilot the researcher arbitrarily selected five questions relating to each passage and used these as the guiding questions in the before, after, and during treatment booklets. In order to have some type of
retention test for the procedural pilot, the questions which had been arbitrarily chosen for use as guiding questions, along with their distractors, were used as the retention test. It should be noted here that in the formal data gathering process, the retention test was the instrument used to provide the data for statistical analysis.

Prior to their arrival at the listening center on the day of the procedural pilot study, the participants were randomly assigned to one of the four question-position treatments. In making the random assignments, the researcher tried to have the same number of students from each class assigned to each treatment.

A problem was caused by the physical limitations of the listening center itself. There were seven rows of booths in the listening center, and because of the way in which the lab was wired, an entire row had to receive the same tape program. Since there were four treatment tapes and seven rows, the assignment of one of the treatments, of necessity, had to be limited to one row. The other three treatments could each be assigned to two rows apiece. For every hour, then, the researcher alternated the treatment that would be limited to one row only. A sample of the general format utilized by the researcher to cope with these wiring patterns is in the appendix. Also in the appendix is a copy of the seating chart which the researcher used.
When the students arrived at the listening center for the procedural pilot, they found their assigned seats, where they found the appropriate test booklet and answer sheet with their names on them.

After all the students were seated, the researcher made some general comments to prepare the students for the listening exercises that followed. The subsequent information was included in the general remarks made to the students before they were to listen to the tape:

1. There is a high-pitched tone at the beginning of the tape.
2. Once you have your headsets on and are listening, as soon as you hear this high-pitched tone, raise your hand.
3. The introduction and general instructions to the procedure are on both the tape and page one of the test booklet.
4. Demonstration on how to break the sealed pages in test booklet.
5. Demonstration on how to mark the computer answer sheet.
6. A reminder not to break the sealed pages in the booklet until told to do so by the voice on the tape.

In the first class during which the procedural pilot was run, several students seemed somewhat confused by what
seemed to be rather lengthy pauses for them to do the tasks. During the subsequent periods when the procedural pilot was being run, the researcher explained that when the students were asked to perform a task, the amount of time allotted for them to do so was quite generous in order that no student would feel rushed from one task to another.

The Study

Refinement of the Instruments to be Used: Guiding Questions and Retention Test

Data were gathered from the multiple-choice items presented in the instruments which had been used by the two classes participating in the item-analysis portion of the procedural pilot study. These items were analyzed statistically in order to provide information as to item discrimination and reliability. On the basis of the statistical analyses of all of the original items, the researcher then selected the five "best" items to be used in connection with each passage. This ultimate selection was based on: 1) item reliability, 2) item discrimination, and 3) the suitability of the item for use by a classroom teacher developing a listening comprehension exercise for these passages. After the multiple-choice items, five per passage, had been selected on the basis of these criteria, the correct answers and the three distractors for each item were examined and refined wherever necessary.
The guiding questions were those questions that had been selected for use as the retention test items. During the treatment, only the questions were presented by themselves. Not included with the guiding questions, however, were the alternatives (the correct answer along with the three distractors) for the multiple-choice items. The multiple-choice items appeared on sealed pages in the students' booklets which the students looked at when they were told to do so by the voice on the tape.

Implementation of the Data-Gathering Process

In the spring quarter, 1979, a total of 108 students from eight Spanish 103 classes voluntarily participated in this project. The data-gathering process took two days; four Spanish classes were tested on each day. The same procedures as described in detail with regard to the pilot study were followed for the actual data-gathering project. Students who chose not to participate in the study were given a reading selection and a set of questions on it as a substitute assignment; the answers to these questions were to be written out and given to their instructors.
CHAPTER IV

FINDINGS AND RESULTS

Introduction

This study was designed to examine the effects of three different placements of guiding questions on the retention of factual information contained in three listening selections. The independent variable in this study was that of question position in relation to a listening passage. The levels of this variable were:

1. **Prequestion**: Guiding questions were read by the subjects before they listened to the passage. These questions did not remain in view while the subjects listened to the selection.

2. **Postquestion**: Guiding questions were read by the subjects after they had listened to the selection.

3. **Interspersed Prequestion**: Guiding questions were read by the subjects before they listened to the passage. These guiding questions were kept in view of the participants during the selection.

4. **No-question**: No guiding questions were given at all. The participants in this group were given the simple admonition to listen carefully to the
passages. Students belonging to this group formed the control group.

The dependent variable in this study was the total score on the fifteen item multiple-choice retention test.

A one-way ANOVA designed for use with the standard SPSS program at The Ohio State University was used for the data analysis. The reliability for the fifteen item multiple-choice retention test was .76 as calculated according to the Kuder-Richardson Formula 20.

Summary of the Data Gathering Process

During the spring quarter, 1979, a total of 108 university students who were native speakers of English and who were taking the third quarter of Spanish in the beginning three-quarter sequence, voluntarily took part in this project. The following selections, out of the six that had been selected initially and edited by the researcher, were chosen for use in the study. A panel of Spanish 103 instructors determined that these were the best passages to use according to the general criteria of: a) interest to college students, and b) overall comprehensibility by students in their third quarter of beginning Spanish. A native speaker of Spanish recorded the passages. The selections used in this study were:


Each participant, after having been randomly assigned to one of the four question-position formats, listened to all three of the selections. The students' scores on the fifteen item (five items per listening passage) multiple-choice test were used for the data gathering process and subsequent analysis. The multiple-choice items used as the criterion test appear in the sample test booklets included in the appendix.

Analysis of the Data Based on Comparisons of the Four Treatments

A one-way analysis of variance was used to analyze the data. Results of this procedure indicate no statistical significance among the various treatment groups, although some interesting trends appear to be present. The mean scores and standard deviations for each of the four treatment groups on the fifteen multiple-choice items criterion test are presented in Table 3. A summary of the results of the one-way ANOVA on the criterion test scores is found in Table 4.
<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prequestions</td>
<td>27</td>
<td>9.1481</td>
<td>3.3821</td>
</tr>
<tr>
<td>Postquestions</td>
<td>27</td>
<td>7.7037</td>
<td>3.3824</td>
</tr>
<tr>
<td>Interspersed Prequestions</td>
<td>27</td>
<td>9.0000</td>
<td>4.0478</td>
</tr>
<tr>
<td>No Questions</td>
<td>27</td>
<td>8.5556</td>
<td>2.9264</td>
</tr>
<tr>
<td>Total</td>
<td>108</td>
<td>8.6019</td>
<td>3.4558</td>
</tr>
</tbody>
</table>
The null hypothesis tested in this study was: There is no significant difference attributable to question position (before, during, after) on a posttest measure of listening comprehension as reflected by retention test scores for relevant, factual material.

An examination of Table 4 indicates that the hypothesis must be retained, $F (3, 10^4) = 0.953, p > .05$. There was no significant difference among the means, although the scores for the groups receiving prequestions and interspersed prequestions were higher than those for the groups that were given postquestions or no questions. In addition to presenting the means for the retention scores on the criterion test, Table 3 also presents the standard deviations for these scores. It must be noted here, too, that the interspersed prequestion treatment group had a greater standard deviation. This indicates that there is more variance, thus indicating a greater spread in the individual scores. The no-question group had the smallest standard deviation, thus indicating the least variance and a lesser spread among the individual scores.

Figure 3 illustrates the relationships of the mean scores for the four treatment groups on the fifteen item retention test. The prequestion condition had the highest mean score. The mean score for the interspersed prequestion condition was only slightly lower than that of the prequestion group. The mean score for the postquestion group was
<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F Ratio</th>
<th>F Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3</td>
<td>34.1759</td>
<td>11.3920</td>
<td>0.953</td>
<td>0.4181</td>
</tr>
<tr>
<td>Within Groups</td>
<td>104</td>
<td>1243.7016</td>
<td>11.9587</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td>1277.8774</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FIGURE 3. Treatment Group Means for the Test of Retention of Relevant Information.
lowest of all, even lower than that for the group receiving no questions at all.

Although the highest mean score appeared in the prequestion treatment condition, this score was not statistically different from the other scores. It should be noted that the mean scores for both the prequestion group and the interspersed prequestion group are quite close. This is not surprising since, in the final analysis, question position wound up being virtually the same for both groups. The difference between the prequestion and the interspersed prequestion groups probably rests on the fact that the latter group was able to see the guiding questions while listening to the passages, and the former group had to rely on remembering the guiding questions.

Analysis of the Data on a Per Passage Basis

Table 5 presents the mean scores and standard deviations on a per passage basis. It should be noted here that the mean scores and standard deviations for this portion of the data analysis were calculated by hand.

For Passage 1 ("The Contrary Woman"), the postquestion group had the highest mean score; this was followed closely by the mean score for the prequestion group. The interspersed prequestion group had the lowest mean score. The greatest standard deviation was recorded for the interspersed prequestion group, and the smallest standard deviation was for the postquestion group.
## TABLE 5

MEAN SCORES AND STANDARD DEVIATIONS ON A PER PASSAGE BASIS

<table>
<thead>
<tr>
<th>Passage</th>
<th>Treatment Group</th>
<th>Means</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prequestions</td>
<td>3.26 (2)</td>
<td>1.63</td>
</tr>
<tr>
<td></td>
<td>Postquestions</td>
<td>3.33 (1)</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>Interspersed Prequestions</td>
<td>2.96 (4)</td>
<td>1.70</td>
</tr>
<tr>
<td></td>
<td>No Questions</td>
<td>3.04 (3)</td>
<td>1.45</td>
</tr>
<tr>
<td>2</td>
<td>Prequestions</td>
<td>2.59 (3)</td>
<td>1.39</td>
</tr>
<tr>
<td></td>
<td>Postquestions</td>
<td>1.96 (4)</td>
<td>1.58</td>
</tr>
<tr>
<td></td>
<td>Interspersed Prequestions</td>
<td>2.67 (2)</td>
<td>1.59</td>
</tr>
<tr>
<td></td>
<td>No Questions</td>
<td>2.70 (1)</td>
<td>1.32</td>
</tr>
<tr>
<td>3</td>
<td>Prequestions</td>
<td>3.30 (2)</td>
<td>1.32</td>
</tr>
<tr>
<td></td>
<td>Postquestions</td>
<td>2.41 (4)</td>
<td>1.62</td>
</tr>
<tr>
<td></td>
<td>Interspersed Prequestions</td>
<td>3.37 (1)</td>
<td>1.39</td>
</tr>
<tr>
<td></td>
<td>No Questions</td>
<td>2.85 (3)</td>
<td>1.32</td>
</tr>
</tbody>
</table>
For Passage 2 ("Como aprendí a hablar inglés"), the results were somewhat reversed. The postquestion group, in this case, had the lowest mean score. It was the no-questions group which had the highest mean score for this passage. The mean score for the interspersed prequestion group was quite close to that of the highest ranking group for this passage. Both the interspersed prequestions and the postquestions groups had the greater standard deviations on this passage, 1.59 and 1.58 respectively. The no-questions group had the smallest standard deviation.

For the third passage ("Un hombre extraño: el doctor Atl"), the interspersed prequestion group and the prequestion group had the highest mean scores, 3.37 and 3.30 respectively. Again, as with Passage 2, the lowest mean score was reported for the group receiving the postquestion treatment format. Also, the greatest standard deviation was found for the postquestion group. It is interesting to note that both the prequestion group and the no-questions group had the smallest standard deviations for this passage.

Figure 4 illustrates visually the comparisons of the mean scores broken down on a per passage basis.

Analysis of the Data Based on a One-Between One-Within Mixed Design

The differences in the mean scores over different passages led to a second analysis in which passage as well as question position was incorporated into the design. This
FIGURE 4. A Comparison of Treatment Group Means Presented by Passage.
mixed design (One-between—One within subjects) is illustrated below. Question position is the between-subjects variable and passage (a repeated measure) is the within-subjects variable.

Passage

<table>
<thead>
<tr>
<th>B₁</th>
<th>B₂</th>
<th>B₃</th>
</tr>
</thead>
</table>

Question Position

S S S

A₁ S S

S S S

A₂ S S

S S S

A₃ S S

S S S

A₄ S S

The following are the null hypotheses tested by this second analysis:

H₀: There is no statistically significant difference attributable to question position (before, after, during) on a posttest measure of listening comprehension as reflected by retention test scores for relevant, factual material.

H₀: There is no significant difference among the three passages on a posttest measure of listening
comprehension as reflected by retention test scores for relevant, factual material.

H₀: There is no significant interaction between the levels of the position variable and the different passages on a posttest measure of listening comprehension as reflected by retention test scores for relevant, factual material.

The analysis of variance on the data was performed using the subprogram BALANOVA V included in the computer program SUPAC.

Again, no main effects for question position were found to be statistically significant at the .05 level. Although a highly statistically significant effect for passage (p < .0001) was found, the significant interaction (p < .03) between question position and passage precludes the interpretation of this main effect. Table 6 presents a summary of this analysis.

To further investigate the interactions, post hoc procedures based on Dunn's test were utilized. The formula for Dunn's post hoc test is:

\[ \hat{\psi} = t \left( \frac{a}{12} \right) \sqrt{\frac{2 M S (B)}{S/A} \left( \text{error term} \right)} \]

Pairwise comparisons were made for all levels of B (Passage 1, Passage 2, and Passage 3) over levels of A (Question Position: Prequestion, Postquestion, Interspersed
### TABLE 6

ANALYSIS OF VARIANCE SUMMARY TABLE FOR DEPENDENT VARIABLE

<table>
<thead>
<tr>
<th>Source</th>
<th>Nesting</th>
<th>Denominator</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F Ratio</th>
<th>F Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>C</td>
<td>3</td>
<td>0.11391975</td>
<td>0.37973251</td>
<td>0.9526</td>
<td>0.41814</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>A</td>
<td>104</td>
<td>0.41456790</td>
<td>0.39862298</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>BXC</td>
<td>2</td>
<td>0.25450617</td>
<td>0.12725309</td>
<td>10.0054**</td>
<td>0.00007**</td>
<td></td>
</tr>
<tr>
<td>AXB</td>
<td>BXC</td>
<td>6</td>
<td>0.17339506</td>
<td>0.28899177</td>
<td>2.2722*</td>
<td>0.03807*</td>
<td></td>
</tr>
<tr>
<td>BXC</td>
<td>A</td>
<td>208</td>
<td>0.26454321</td>
<td>0.12718424</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P < .05
**P < .0001
Prequestion, and No Question).

The mean scores for the interactions between the passages and question positions are presented in Table 7. A graphic representation of the data presented in Table 7 is given in Figure 5. The interactions between \( B_1 \) and \( B_2 \) (Passage 1 and Passage 2) and question position are ordinal, as are the interactions between \( B_2 \) and \( B_3 \) (Passage 2 and Passage 3) and question position. The interactions between \( B_3 \) and \( B_1 \) (Passage 3 and Passage 1) are disordinal.

Of all twelve of the comparisons that were made using Dunn's post hoc test, the only one that was statistically significant was that comparison made at level \( A_2 \) (Postquestion) between \( B_1 \) and \( B_2 \) (1.37), which exceeded the critical value of + (1.009) using .05 alpha and allowing for twelve comparisons. Therefore, for this particular level of \( A \) (Postquestions), performance on the criterion test differed significantly between passages one and two.
**TABLE 7**

MEAN SCORES FOR INTERACTION BETWEEN PASSAGE AND QUESTION POSITION

<table>
<thead>
<tr>
<th>Mean Scores</th>
<th>Question Position</th>
<th>Passage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2592593</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2.5925926</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3.2962963</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3.3333333</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1.9629630</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2.4074074</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2.9629630</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2.6666667</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>3.3703704</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>3.0000000</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>2.7037037</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>2.8518519</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Explanation of Numbers Used:

<table>
<thead>
<tr>
<th>Question Position</th>
<th>Passage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Prequestion</td>
<td>&quot;The Contrary Woman&quot;</td>
</tr>
<tr>
<td>2 Postquestion</td>
<td>&quot;Como aprendí a hablar inglés&quot;</td>
</tr>
<tr>
<td>3 Interspersed Prequestion</td>
<td>&quot;Un hombre extraño: el doctor Atl&quot;</td>
</tr>
</tbody>
</table>
FIGURE 5. Interaction Between Passage and Question Position.
CHAPTER V
SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Overview

The purpose of this study was to examine the effects of three types of question placement on the retention of factual information contained in three Spanish listening passages. University students in their third quarter of beginning Spanish were the participants. The independent variable, question placement, consisted of three question positions: questions read before listening to the passage, questions read after listening to the passage, and questions read prior to and present for inspection while listening to the passage. The questions were given in English. Each student who participated in the study listened to all three of the selections but received only one of the question position formats. After listening to each passage and working with the question position format which had been randomly assigned, the student answered a five-item, multiple-choice retention test for each passage. The student's total score was based on the sum of the scores on the questions from these three passages.
During the spring quarter, 1979, a total of 108 students voluntarily took part in this project. These students were native speakers of English and were taking the third quarter of Spanish in the beginning three-quarter sequence at The Ohio State University.

**Remarks**

While the results of the one-way ANOVA for this study were not statistically significant, further studies utilizing experimental techniques that are more refined and more highly sophisticated might yield statistically significant results. Some factors which this researcher believes may have obscured the results of the study and contributed to the non-significant results are among the following:

1. The rate at which the actual foreign language material was recorded may have been too slow for the purpose of this study. This slow rate may have given all the participants more than a sufficient amount of time to process what they were hearing. This may be especially true for those students who received no guiding questions at all; they had more time to process the listening selection, and they had less intervening "clutter" with which to deal. A subsequent study might use language recorded at a somewhat faster rate.

2. The actual amount of time allowed for the students to read and study the guiding questions may have been too long. Some students reported being bored or
distracted after having studied the guiding questions and then having to wait for the next segment of the procedure to begin. This, too, might account for some lower test scores in the questioned groups.

3. As can happen in a number of educational experiments, the Hawthorne effect may have occurred. The students knew that they were participating in a project designed to gather data for a dissertation, and the mere knowledge of the purpose of a project can have an influence on the participants' performance.

4. The data-gathering (testing) for this study took place on one day. The fact that all the data was gathered in one session could have had a fatiguing effect on the students; this also might not have been present had the students received one passage per day.

5. In order to participate in the data-gathering process, the students had to report to a laboratory in the listening center. They were working in an unfamiliar setting, and the fact that they were working in unfamiliar surroundings may also have had an effect on at least some of the participants.

6. One possible reason why postquestions did so well initially, i.e., for Passage 1, might be that all of the subjects were fresh and untired at the beginning of the testing sequence and could concentrate better on what they were doing. A reason for their having scored
so much lower on the second and third passages could possibly be that they became fatigued. This same explanation may also account for the performance of the no-questions group.

Also, it should be noted here that the students who received no guiding questions with their listening passages did not do significantly worse than those who had received guiding questions. A possible explanation as to why those students who received no guiding questions with their listening passages performed as well as they did is suggested by Schumacher, Lilbert and Fass (1975). These researchers studied the interaction of a reading passage structure and advance organizers; they found that the subjects who were given a passage with neither paragraph cues nor an advance organizer recalled information better than did those subjects who were given paragraph cues or advance organizers. As a result of these findings, Schumacher et al. theorize that when subjects are given no organizational information in the form of advance organizers or passage structure, they are forced to carry out activities aimed at generating their own structure for the passage presented, thus leading to efficient recall that is significantly better than when advance organizers and structural passage information are given. Smirnov and Zinchenko (1969) also reported that subject-generated
plans for a passage lead to better recall than does an experiment-generated plan.

Recommendations for Further Research

It is recommended that further research be conducted to study the effects of questions and question position. Some specific suggestions and recommendations are:

1. This study took place on one day in the learner's program. Subsequent studies could take place over longer periods of time in which the learners deal repeatedly with listening materials of the type to which they will be assigned in the experimental situation. This could be carried out on a weekly, biweekly, or even daily basis in order to see if, in the end, any one question placement format might be superior to the others for facilitating listening comprehension.

2. It would also be helpful for studies to examine the types of listening selections such as monologs, dialogs, news reports, commercials, etc., to see whether or not one type of question placement format might be more effective for one type of listening selection, while another question position format might be more appropriate for a different type of listening selection.

3. The foreign language backgrounds of the students who enroll in the beginning Spanish courses at The Ohio State University are quite diverse. Some have
never studied a foreign language prior to enrolling in Spanish at this university. Others have had from one quarter to many years' worth of experience in learning a foreign language other than Spanish prior to their entering this beginning sequence. Still others were repeating their study of Spanish which was begun either in high school or at some other institution of higher learning. It is recommended that any replication of this study include only those subjects who have not previously studied a foreign language. It is possible that significant differences could have appeared had the subjects not already developed a set of habits and strategies for listening to Spanish.

4. More research needs to be done to examine the use of questions on the motivational and attitudinal effects of recorded listening comprehension materials for classroom practice purposes and what formats for such materials are the most appropriate and the most effective. Furthermore, research needs to be conducted to look at ways in which materials can be improved to encourage students to listen actively so that the development of the listening skill can be realized to its greatest potential in each learner.

5. Another recommendation is that in further research of this kind, the passages be recorded once and then be inserted mechanically into each of the
treatment formats. While this was not possible for the present study because of financial considerations and the excessive amount of technical time required, this procedure is highly recommended by the researcher. Rate of speech for the passages is thus consistent and controlled in a very precise manner across the formats.

6. Of potential benefit to the materials developer and classroom teacher would be studies which investigated the types of questions (narrow, broad, or a combination thereof) that best facilitate listening comprehension. In addition to looking at the kinds of questions that facilitate the recall of factual information, it is of utmost importance that studies be conducted which go beyond the realm of recall of factual information to determine the kinds of questions which are most useful in concept development and in fostering the skills of critical thinking.

7. Furthermore, research needs to be done which examines what the learners themselves are doing while they are listening to a passage and processing the information which it contains. Studies such as these might subsequently lead to the identification of various types of "listening styles" (akin to different kinds of "learning styles" that have been identified in connection with the reading skill). Consequently, these different "listening styles" might then be aided
and strengthened by use of a particular type of question placement format.

8. If, indeed, it is shown that learners become better listeners in the foreign language as a result of having used various strategies designed to help them do precisely that, then research needs to be done to find out whether there is any transfer into the learners' listening habits when they are listening to messages in their native language.

Implications

In conclusion, it should also be noted that this study of the effects of different question placement formats is but a mere beginning in the examination of the implications of the use of questions in an educational process whose ultimate goal is that of helping learners to develop their skills of critical thinking. Although the results of this study are not statistically significant, there seems to be a slight tendency to favor the presentation of "guiding questions" prior to having the students listen to a selection (prequestions). The value of this study for the classroom teacher is that the data support the assertion that prequestioning techniques are at least as good as postquestioning strategies, and may possibly be better. It is up to the classroom teachers to decide which technique will be most effective for them and their students.
BIBLIOGRAPHY


112


and Don F. Keller, "Recall Instruction and Learning from Text with Adjunct Questions. Institute Report No. 103." Indiana University, Bloomington Institute for Child Study, 1972. (EDRS: ED 075 779)


"Effect of Question Location, Pacing and Mode Upon Retention of Prose Material." *Journal of Educational Psychology* 59 (1968a): 244-249.


____, "Cybernetic Control of Memory while Reading Connected Discourse." Journal of Educational Psychology 60 (1969): 49-55.


__. "Variable Adjunct Question Schedules, Interpersonal Interaction, and Incidental Learning from Written Material." Journal of Educational Psychology 63 (1972): 87-92.


Nova University, Fort Lauderdale, Florida, 1970.
(EDRS: ED 045 391)

LISTENING FORMAT I

INTRODUCTION:

During this experiment you will be listening to three selections in Spanish. In your booklet you will be given some guiding questions in English to read **BEFORE** you listen to each passage. These questions may help you understand the passage better. You are to read and study these guiding questions carefully. Then when instructed to do so by the voice on the tape, remove this question sheet and put it in the envelope provided. **Do not** refer back to these questions once you have put them in the envelope.

You are to listen carefully to the tape. Note that you will hear each passage only once. After listening to each passage, you will be instructed to break the seals on the page covering the multiple-choice questions. **Do not** break the seals on these pages until you are instructed to do so. Mark your answers to the multiple-choice items on the computer sheet that the researcher has given you.

**In summary:**

1. When told to do so, break the seals. Read and study the guiding questions carefully.

2. When told to do so, remove this question sheet and put it in the envelope. **Do not** look at this question sheet again.

3. Listen to the passage carefully. Do not attempt to write anything while you listen to the passage. You will hear the passage only once.

4. When told to do so, break the next seals. Answer the multiple-choice questions. Mark your answers on the computer sheet.

This basic procedure is to be followed for each of the three passages. Note that these instructions will be
PREQUESTIONS (TAPE SCRIPT) cont'd, Page 2

Now turn to page 2 in your booklet. Break the seals. Read and study the questions that appear on page 3. These questions are about the first passage you will hear.

(TIME LAPSE FOR STUDENTS TO READ AND STUDY QUESTIONS. 3 MINUTES AND 30 SECONDS)

Remove page 3 and insert this paper in the envelope provided. Do not look at this paper again.

(TIME LAPSE FOR STUDENTS TO REMOVE PAPER AND PUT IT IN ENVELOPE. 30 SECONDS)

Now listen carefully to the first passage.

(PAUSE. 5 SECONDS)

---PASSAGE I ON TAPE---

Break the seals on page 4. Turn to page 5 for the multiple-choice questions dealing with this passage. Mark your answers to questions 1 to 5 on the computer sheet provided.

(TIME LAPSE FOR STUDENTS TO READ QUESTIONS ON PASSAGE I AND MARK THEIR ANSWERS ON THE COMPUTER SHEET. 4 MINUTES)

Now for the second passage. Turn to page 6. Break the seals. Read and study the questions that appear on page 7. These questions are about the second passage you will hear.

(TIME LAPSE FOR STUDENTS TO READ AND STUDY QUESTIONS. 3 MINUTES 30 SECONDS)

Remove page 7 and insert this paper in the envelope provided. Do not look at this paper again.

(TIME LAPSE FOR STUDENTS TO REMOVE PAPER AND PUT IT IN ENVELOPE. 30 SECONDS)

Now listen carefully to the second passage.

(PAUSE. 5 SECONDS)

---PASSAGE II ON TAPE---

Break the seal on page 8. Turn to page 9 for the multiple-choice questions dealing with this passage. Mark your answers to questions 6 to 10 on the computer sheet provided.
PREQUESTIONS (TAPE SCRIPT) cont'd, Page 3

(TIME LAPSE FOR STUDENTS TO READ QUESTIONS ON PASSAGE II AND MARK THEIR ANSWERS ON THE COMPUTER SHEET. 4 MINUTES)

Now for the third passage. Turn to page 10. Break the seals. Read and study the questions that appear on page 11. These questions are about the third passage you will hear.

(TIME LAPSE FOR STUDENTS TO READ AND STUDY QUESTIONS. 3 MINUTES 30 SECONDS)

Remove page 11 and insert this paper in the envelope provided. Do not look at this paper again.

(TIME LAPSE FOR STUDENTS TO REMOVE PAPER AND PUT IT IN ENVELOPE. 30 SECONDS)

Now listen carefully to the third passage.

(PAUSE. 5 SECONDS)

---PASSAGE III ON TAPE---

Break the seals on page 12. Turn to page 13 for the multiple-choice questions dealing with this passage. Mark your answers to questions 11 to 15 on the computer sheet.

(TIME LAPSE FOR STUDENTS TO READ QUESTIONS ON PASSAGE III AND MARK THEIR ANSWERS ON THE COMPUTER SHEET. 4 MINUTES)

This is the end of the listening experiment. Please return the test booklet, computer answer sheet, and pencil to the researcher or the assistant. Thank you very much for giving your time to help out with this experiment. End of tape.
POSTQUESTIONS (TAPE SCRIPT), Page 1

LISTENING FORMAT II

INTRODUCTION:

During this experiment you will be listening to three selections in Spanish. In your booklet you will be given some questions in English to read AFTER you listen to each passage. These questions can help you check your comprehension.

First you are to listen carefully to the tape. Note that you will hear each passage only once. After listening to each passage you will be instructed to look at the page which has the appropriate guiding questions on it. You are to read and answer these guiding questions carefully. Then when instructed to do so by the voice on the tape, remove this question sheet and put it in the envelope provided. Do not refer back to this sheet once it is in the envelope. After this you will be asked to answer several multiple-choice questions on the passage. These multiple-choice questions are also on a sealed sheet in your test booklet. Mark your answers to the multiple-choice items on the computer sheet that the researcher has given you.

In summary:

1. Listen to the passage carefully. Do not attempt to write anything while you listen to the passage. You will hear the passage only once.
2. When told to do so, break the seals. Read the guiding questions carefully. Think about the answers to them.
3. When told to do so, remove this question sheet and put it in the envelope. Do not look at this question sheet again.
4. When told to do so, break the next seals. Answer the multiple-choice questions. Mark your answers on the computer sheet.
POSTQUESTIONS (TAPE SCRIPT) cont'd, Page 2

This basic procedure is to be followed for each of the three passages. Note that these instructions will be repeated for each passage.

Now listen carefully to the first passage.

(PAUSE. 5 SECONDS)

---PASSAGE I ON TAPE---

End of Passage I. Now break the seals on page 2. Read and answer the questions that appear on page 3. These questions are about the first passage you have just heard.

(TIME LAPSE FOR STUDENTS TO READ AND ANSWER QUESTIONS. 3 MINUTES 30 SECONDS)

Remove page 3 and insert this paper in the envelope provided. Do not look at this paper again.

(TIME LAPSE FOR STUDENTS TO REMOVE PAPER AND PUT IT IN ENVELOPE. 30 SECONDS)

Break the seal on page 4. Turn to page 5 for the multiple-choice items dealing with this passage. Mark your answers to questions 1 to 5 on the computer sheet provided.

(TIME LAPSE FOR STUDENTS TO READ QUESTIONS ON PASSAGE I AND MARK THEIR ANSWERS ON THE COMPUTER SHEET. 4 MINUTES)

Now for the second passage. Listen to it carefully.

(PAUSE. 5 SECONDS)

---PASSAGE II ON TAPE---

End of Passage II. Now break the seal on page 6. Read and answer the questions that appear on page 7. These questions are about the second passage you have just heard.

(TIME LAPSE FOR STUDENTS TO READ AND ANSWER QUESTIONS. 3 MINUTES 30 SECONDS)

Remove page 7 and insert this paper in the envelope provided. Do not look at this paper again.

(TIME LAPSE FOR STUDENTS TO REMOVE PAPER AND PUT IT IN ENVELOPE. 30 SECONDS)
POSTQUESTIONS (TAPE SCRIPT) cont'd, Page 3

Break the seal on page 8. Turn to page 9 for the multiple-choice items dealing with this passage. Mark your answers to questions 6 to 10 on the computer sheet provided.

(TIME LAPSE FOR STUDENTS TO READ QUESTIONS ON PASSAGE II AND MARK THEIR ANSWERS ON THE COMPUTER SHEET. 4 MINUTES)

Now for the third passage. Listen to it carefully.

(PAUSE. 5 SECONDS)

---PASSAGE III ON TAPE---

End of Passage III. Now break the seal on page 10. Read and answer the questions that appear on page 11. These questions relate to the third passage you have just heard.

(TIME LAPSE FOR STUDENTS TO READ AND ANSWER QUESTIONS. 3 MINUTES 30 SECONDS)

Remove page 11 and insert this paper in the envelope provided. Do not look at this paper again.

(TIME LAPSE FOR STUDENTS TO REMOVE PAPER AND PUT IT IN ENVELOPE. 30 SECONDS)

Break the seal on page 12. Turn to page 13 for the multiple-choice items dealing with this passage. Mark your answers to questions 11 to 15 on the computer sheet provided.

(TIME LAPSE FOR STUDENTS TO READ QUESTIONS ON PASSAGE III AND MARK THEIR ANSWERS ON THE COMPUTER SHEET. 4 MINUTES)

This is the end of the listening experiment. Please return the test booklet, computer answer sheet, and pencil to the researcher or the assistant. Thank you very much for giving your time to help out with this experiment. End of tape.
LISTENING FORMAT III

INTRODUCTION:

During this experiment you will be listening to three selections in Spanish. In your booklet you will be given some questions in English to read and refer to while you listen to each passage. These questions can help you check your comprehension.

When you are instructed to do so, open your test booklet to the page specified. Read and study these guiding questions carefully. You will be able to look at these guiding questions while you are listening to the passage. Note that you will hear each passage only once. After listening to each passage, you will be asked to answer several multiple-choice questions on the passage. These multiple-choice questions are also on a sealed sheet in your test booklet. Mark your answers to the multiple-choice items on the computer sheet that the researcher has given you.

In summary:

1. When told to do so, break the seals. Read and study the guiding questions carefully.
2. Keep these questions in front of you as you listen to the passage.
3. Listen to the passage carefully. Do not attempt to write anything while you listen to the passage. You will hear the passage only once.
4. When told to do so, break the next seals. Answer the multiple-choice questions. Mark your answers on the computer sheet.

This basic procedure is to be followed for each of the three passages. Note that these instructions will be repeated for each passage.
Now turn to page 2 in your booklet. Break the seals. Read and study the questions that appear on page 3. These questions are about the first passage you will hear. You may look at these questions as you listen to the passage.

(TIME LAPSE FOR STUDENTS TO READ AND STUDY QUESTIONS. 3 MINUTES 30 SECONDS)

Now listen carefully to the first passage.

(PAUSE. 5 SECONDS)

---PASSAGE I ON TAPE---

Now break the seals on page 4. Turn to page 5 for the multiple-choice questions dealing with this passage. Mark your answers to questions 1 to 5 on the computer sheet provided.

(TIME LAPSE FOR THE STUDENTS TO READ QUESTIONS ON PASSAGE I AND MARK THEIR ANSWERS ON THE COMPUTER SHEET. 4 MINUTES)

Now turn to page 6 in your booklet. Break the seals. Read and study the questions that appear on page 7. These questions are about the second passage you will hear. You may look at these questions as you listen to the passage.

(TIME LAPSE FOR STUDENTS TO READ AND STUDY QUESTIONS. 3 MINUTES 30 SECONDS)

Now listen carefully to the second passage.

(PAUSE. 5 SECONDS)

---PASSAGE II ON TAPE---

Now break the seals on page 8. Turn to page 9 for the multiple-choice questions dealing with this passage. Mark your answers to questions 6 to 10 on the computer sheet provided.

(TIME LAPSE FOR STUDENTS TO READ QUESTIONS ON PASSAGE II AND MARK THEIR ANSWERS ON THE COMPUTER SHEET. 4 MINUTES)
Now turn to page 10 in your booklet. Break the seals. Read and study the questions that appear on page 11. These questions are about the third passage you will hear. You may look at these questions as you listen to the passage.

(Time lapse for students to read and study questions.
3 minutes 30 seconds)

Now listen carefully to the third passage.

(Pause. 5 seconds)

---Passage III on tape---

Now break the seals on page 12. Turn to page 13 for the multiple-choice questions dealing with this passage. Mark your answers to questions 11 to 15 on the computer sheet provided.

(Time lapse for students to read questions on passage III and mark their answers on the computer sheet.
4 minutes)

This is the end of the listening experiment. Please return the test booklet, computer answer sheet, and pencil to the researcher or the assistant. Thank you very much for giving your time to help out with this experiment. End of tape.
LISTENING FORMAT IV

INTRODUCTION:

During this experiment you will be listening to three selections in Spanish. Please note that you will hear each passage only once. After listening to each selection you will be given some multiple-choice questions in English in your test booklet to read and answer. Mark the answers to these questions on the computer sheet provided by the researcher. Do not look at the questions until you are instructed to do so by the voice on the tape.

In summary:

1. Listen to the passage carefully. Do not attempt to write anything while you listen to the passage. You will hear each passage only once.

2. When told to do so, break the seals. Answer the multiple-choice questions. Mark your answers on the computer sheet.

This basic procedure is to be followed for each of the three passages. Note that these instructions will be repeated for each passage.

Now listen carefully to the first passage.

(PAUSE. 5 SECONDS)

---PASSAGE I ON TAPE---

Now break the seal on page 2. Turn to page 3 for the multiple-choice questions dealing with this passage. Mark your answers to questions 1 to 5 on the computer sheet provided.

(TIME LAPSE FOR STUDENTS TO READ QUESTIONS ON PASSAGE I AND MARK THEIR ANSWERS ON THE COMPUTER SHEET. 4 MINUTES)

Now listen carefully to the second passage.

(PAUSE. 5 SECONDS)

---PASSAGE II ON TAPE---
CONTROL (TAPE SCRIPT) cont'd, Page 2

Now break the seals on page 4. Turn to page 5 for the multiple-choice questions dealing with this second passage. Mark your answers to questions 6 to 10 on the computer sheet provided.

(TIME LAPSE FOR STUDENTS TO READ QUESTIONS ON PASSAGE II AND MARK THEIR ANSWERS ON THE COMPUTER SHEET.
4 MINUTES)

Now listen carefully to the third passage.

(PAUSE. 5 SECONDS)

---PASSAGE III ON TAPE---

Now break the seals on page 6. Turn to page 7 for the multiple-choice questions dealing with this third passage. Mark your answers to questions 11 to 15 on the computer sheet provided.

(TIME LAPSE FOR STUDENTS TO READ QUESTIONS ON PASSAGE III AND MARK THEIR ANSWERS ON THE COMPUTER SHEET.
4 MINUTES)

This is the end of the listening experiment. Please return the test booklet, computer answer sheet, and pencil to the researcher or the assistant. Thank you very much for giving your time to help out with this experiment. End of tape.
PASSAGE I

En cierto pueblo vivía un hombre. Él estaba casado con una mujer muy difícil, una mujer que siempre decía lo contrario. Si él decía que sí, ella decía que no. Si él decía que era de noche, ella decía que era de día. Si él decía que un color era negro, ella decía que era blanco.

Un día los dos salieron a caminar por el campo, cerca del río. Ella comenzó a argüir, a disputar algo con su esposo. Hablaba tanto que no miró donde andaba. Se cayó al río, y desapareció en las aguas del río en seguida.

El marido corrió al pueblo. Gritó y pidió ayuda. Algunos de sus amigos volvieron al río con él para buscar a su mujer. Todos los amigos la buscaron hacia abajo, río abajo, en la dirección en que iba la corriente del río. Pero el marido la buscó río arriba, hacia arriba. Los amigos creyeron que el hombre estaba loco. Le preguntaron por qué buscaba a su esposa río arriba. El hombre contestó que su esposa era tan difícil, tan contraria, que aunque estaba muerta, iba en contra de la corriente.
PASSAGE II

Les voy a decir un secreto. Cuando terminé mis estudios en la Universidad Nacional, yo no sabía hablar inglés. ¿Qué lengua más difícil para mí? ¿Quién inventó el inglés? Seguramente el demonio.

Un día recibí una carta de la oficina del director del Colegio Inglés. Leí la carta rápidamente. Me ofrecían un puesto para enseñar historia de los Estados Unidos en una escuela privada. Allí era necesario sólo hablar inglés. ¿Yo, enseñando en inglés, a una clase de muchachos que, probablemente, hablaban inglés mejor que yo? ¡Imposible! Pero en un momento débil, decidí aceptar, y acepté el puesto.

Leí libros y tomé apuntes. Quise escribir una página, pero no pude. Era evidente que yo no sabía inglés. ¿Qué iba a hacer?

Por fin tuve una gran idea. Yo conocía a una norteamericana muy amable. Fui a verla y le expliqué mi situación. Ella se reía y creía que yo estaba loca. Pero, por fin ella me sugirió una solución. Según ella, yo tendría que escribir todas mis lecciones; entonces ella me las corregiría. Yo tenía que prometer aprender todo de memoria, palabra por palabra, y no inventar nada.

Mi éxito fue maravilloso.


Desde entonces, siempre llevé páginas extras para usar en momentos difíciles. Terminé el curso y aprendí más inglés que nunca, ... y un día, maravilla de maravillas, ¡finalmente pude hablar la lengua del demonio.
PASSAGE III

Hace muchos años, un pintor mexicano, Gerardo Murillo, fue a Europa para una exhibición de sus paisajes. Pero, muy pronto volvió a su país. Quería ser mexicano y sólo mexicano con respeto a sus obras de arte. Por su amor a México tomó otro nombre, el doctor Atl. "Atl" es una palabra india que quiere decir "agua." Después de su viaje a Europa, decidió que no iba a pintar nada que imitara a Europa. Quería pintar lo mexicano.

La diversión favorita del doctor Atl fue viajar por las montañas. Le gustaba mirar cascadas, ríos, erupciones, y tempestades eléctricas. En días tranquilos, le gustaba cantar y gritar a las nubes y a las aguas.

Hizo muchos viajes al volcán Popocatépetl. Una noche, los vecinos del pueblo vieron una luz misteriosa en el camino del volcán. Pensaban que era el alma de un muerto. En realidad, no era el alma de un muerto sino el doctor Atl. Volvía con una luz en la mano para no caer en un precipicio.

Al doctor Atl le gustaba tanto pintar el volcán Popocatépetl, que hizo más de cien viajes allá. Muchas veces pintó el mismo paisaje en tres horas diferentes—por la mañana, a mediodía, y por la tarde. Un día el volcán, las nubes, el río—todo apareció ante sus ojos como algo vivo y humano. Y así lo pintó. Los paisajes del doctor Atl representan la personalidad de México y su gente, aunque no tienen figuras de hombres y mujeres.
PASSAGE I — ENGLISH TRANSLATION

In a certain town there lived a man. He was married to a very difficult woman, a woman who always said the opposite thing. If he said yes, she would say no. If he said it was nighttime, she would say it was daytime. If he said a color was black, she would say it was white.

One day, the two went for a walk in the country, near the river. She began to argue, to dispute something with her husband. She talked so much that she didn't watch where she was going. She fell into the river, and disappeared in the waters of the river at once.

The husband ran into town. He shouted and cried for help. Some of his friends returned to the river with him in order to look for his wife.

All of the friends looked for her downstream, in the direction that the river's current flowed. But, the husband looked for her upstream. The friends thought the man was crazy. They asked him why he was looking for his wife upstream. The man answered that his wife was so difficult, so contrary, that although she was dead, she would go against the current.
PASSAGE II --- ENGLISH TRANSLATION

I am going to tell you a secret. When I finished my studies of English at the National University, I didn't know how to speak English. What a difficult language for me! Who invented English? Surely the devil.

One day I received a letter from the office of the principal of the English School. I read the letter rapidly. They were offering me a job teaching U.S. history in a private school. There it was necessary to speak only English. Me, teaching in English, to a class of kids who, probably, spoke English better than I? Impossible! But in a weak moment I decided to accept; and I accepted the job.

I read books and took notes. I wanted to write a page, but couldn't. It was evident that I didn't know English. What was I going to do?

Finally I had a great idea. I knew a very kindly North American girl. I went to see her, and I explained my situation to her. She laughed and thought I was crazy. But, finally she suggested a solution to me. According to her, I would have to write out all my lessons; then she would correct them for me. I had to promise to memorize everything, word for word, and not invent anything.

My success was marvelous. But, the day of reckoning came. I had only a few more pages left in my head. The clock said: 10:50. How would I kill ten more minutes? I began to speak slowly, and then more slowly. But, I arrived at the last sentence of my lesson and I didn't have anything more to say. Good grief! At that moment I heard a bell. It was a fire drill. Naturally I flew out of the classroom.

From then on, I always carried extra pages with me to use in difficult moments. I finished teaching the course and I learned more English than ever...and one day, wonder of wonders, I discovered that I could speak the language of the devil.
PASSAGE III --- ENGLISH TRANSLATION

Many years ago, a Mexican painter, Gerardo Murillo, went to Europe for an exhibit of his landscapes. But, very soon he returned to his country. He wanted to be Mexican, and only Mexican, with respect to his works of art. Because of his love for Mexico, Gerardo Murillo took another name, Doctor Atl. "Atl" is an Indian word which means "water." After his trip to Europe, he decided that he would not paint anything which imitated Europe. He wanted to paint that which was Mexican.

Dr. Atl's favorite pastime was to travel through the mountains. He liked to look at waterfalls, rivers, volcanic eruptions, and electrical storms. On calm days he liked to sing and shout at the clouds and the waters.

He made many trips to the volcano Popocatepetl. One night the neighbors of the town saw a mysterious light on the road to the volcano. They thought it was a ghost. In reality, it wasn't a ghost but Dr. Atl. He was returning to town with a light in his hand so as not to fall into a precipice.

Dr. Atl liked to paint the volcano Popocatepetl so much that he made more than a hundred trips there. Many times he painted the same landscape at three different times— in the morning, at noon, and in the afternoon. One day the volcano, the clouds, the river—everything appeared before his eyes like something alive and human. And he painted it in that way. Dr. Atl's landscapes represent the personality of Mexico and her people, even though they do not have figures of men and women in them.
TO: INSTRUCTORS OF SPANISH 103  
FROM: ROSEMARIE A. BENYA  
SUBJECT: HELP WHICH I AM REQUESTING FROM THE INSTRUCTORS OF SPANISH 103 IN CONNECTION WITH THE RESEARCH FOR MY DOCTORAL DISSERTATION IN FOREIGN LANGUAGE EDUCATION

In order that I might be able to do the best work I can in connection with my proposed dissertation, I must rely on help from members of the Spanish department here at OSU.

The following is a brief list of the ways in which I am asking for your help.

1. Permission to work with your class and use one (1) full class period sometime during the week of May 7 (probably May 8, 9, or 10).

2. Copies of current, up-to-date class rosters.

3. Suggestions/Ideas as to what might be an appropriate alternate assignment for students not participating in the experiment.

4. Permission to visit your class (Spanish 103) once, during the 7th week of the quarter (the week of April 30), to explain the experiment, to ask the students for their help, and to pass out the consent forms.

I will be very grateful for the help you can give me in connection with this project.

Thank you very much.

Rosemarie A. Benya

Humanities Education/Foreign Language Education
Office: 159 Ramseyer, 422-1080
I agree to be a subject and take part in an experiment which concerns listening to several passages in a foreign language (Spanish). I understand that the purpose of the experiment is to help people become more efficient listeners of a foreign language. The nature and general purpose of the experiment have been explained to me. This research will be done by Rosemarie A. Benya under the general direction of Dr. Edward D. Allen.

I understand that I may ask questions about this experiment and get answers to these questions. I also understand that my name or identity will not be revealed in any publication, document, recording, videotape, photograph, computer data storage, or in any other way which relates to this research. Finally, I understand, too, that I am free to withdraw from this experiment at any time, if I tell the investigator.

Signed_____________________

Date_____________________

Time______________________ a.m./p.m.

Witness_____________________

Investigator_________________
PASSAGE I --- QUESTIONS (PRELIMINARY STAGE)

THE QUESTIONS ON THIS PAGE IN BOTH PARTS I AND II DEAL WITH THE FIRST LISTENING PASSAGE.
***In Part I, you are to write a short answer to each question given.
***In Part II, you are to complete the statement that is given.

WRITE YOUR ANSWERS IN ENGLISH. USE AS MANY OR AS FEW WORDS AS YOU NEED TO ANSWER THE QUESTIONS.

PART I --- Write a short answer to each question.
1. How can you describe the woman in the story?
2. Why did the woman fall into the river?
3. What did the man do when his wife fell into the river?
4. Who helped the man look for his wife?
5. Where did the man look for his wife?
6. Where did the others go to look for the woman?
7. Why did the man look for his wife where he did?

PART II --- Complete the statement that is given.
1. The personality of the woman in the story can best be described as _________________________________________
2. If the man said something was black, the woman would say _________________________________________
3. The woman fell into the river because _________________________________________
4. The man ran back to town in order to _________________________________________
5. The man was aided by _________________________________________
6. Because the man searched where he did, the others thought that he was _________________________________________
7. In order to look for the woman, the others went _________________________________________
8. The man looked for his wife where he did because _________________________________________
PASSAGE II --- QUESTIONS (PRELIMINARY STAGE)

THE QUESTIONS ON THIS PAGE IN BOTH PARTS I AND II DEAL WITH THE SECOND PASSAGE.

***In Part I, you are to write a short answer to each question given.
***In Part II, you are to complete the statement that is given.

WRITE YOUR ANSWERS IN ENGLISH. USE AS MANY OR AS FEW WORDS AS YOU NEED IN YOUR ANSWERS.

PART I --- Write a short answer to each question.

1. How can you describe the narrator's knowledge of English right when she graduated from the university?
2. How does the narrator feel about English?
3. What was the narrator's first job after graduation?
4. What was the narrator's greatest fear about her first job?
5. Who offered a solution to the narrator's problem?
6. What did the narrator have to do?
7. How did the narrator decide to kill time when she still had ten minutes left?
8. In order to fill up an entire class period, what did the narrator always have with her?

Part II --- Complete the statement that is given.

1. Immediately upon finishing her studies of English at the National University, the narrator did not know ______

2. After graduation, the narrator's first job was ______

3. The narrator's greatest fear about the people with whom she was going to work was that ______

4. A solution to the narrator's problem was offered by ______

5. As a condition for the solution to her problem, the narrator had to promise to ______

6. When she found that she had ten minutes left before the end of class, the narrator decided to kill time by ______
7. In the situation when she had to kill time, the narrator found unexpected relief when _________________________

8. To avoid not having enough material to work with until the end of class, from then on, the narrator always had _________________________
PASSAGE III --- QUESTIONS (PRELIMINARY STAGE)

THE QUESTIONS ON THIS PAGE IN BOTH PARTS I AND II DEAL WITH THE THIRD PASSAGE.

***In Part I, you are to write a short answer to each question given.

***In Part II, you are to complete the statement that is given.

WRITE YOUR ANSWERS IN ENGLISH. USE AS MANY OR AS FEW WORDS AS YOU NEED IN YOUR ANSWERS.

Part I --- Write a short answer to each question.
1. Why did Dr. Atl go to Europe?
2. Where did Dr. Atl go to paint?
3. To what did Dr. Atl dedicate his life?
4. What does the word "Atl" mean?
5. What did Dr. Atl decide to do immediately after returning from Europe?
6. What did Dr. Atl think about European art?
7. How do you know that Dr. Atl liked the volcano Popocatepetl?
8. What is strikingly absent from Dr. Atl's paintings?

Part II --- Complete the statement that is given.
1. Gerardo Murillo was a ____________________________
2. Gerardo Murillo went to Europe in order to ____________________________
3. After his trip to Europe, Gerardo Murillo decided that his work would reflect only ____________________________
4. The word "Atl" means ____________________________
5. Murillo's favorite pastime was to ____________________________
6. The people thought that the mysterious light on the road to the volcano was ____________________________
7. The mysterious light which the people saw on the road to the volcano appeared because ____________________________
8. Typically absent from Dr. Atl's works are ____________________________
PASSAGE I, PART I —— MULTIPLE CHOICE QUESTIONS (USED FOR ITEM ANALYSIS AND ITEM SELECTION IN PRELIMINARY STAGE)

Select the answer to each of the following questions. Mark your answers on the answer sheet provided. Please do not mark on this paper.

1. How can you describe the woman in the story?
   A. She was insane.
   B. She was hard-headed.
   C. She was tall and blonde.
   D. She was out-going and athletic.

2. Why did the woman fall into the river?
   A. She was pushed.
   B. She was looking for something and slipped in.
   C. Her husband wouldn't help her.
   D. She was talking too much.

3. What did the man do immediately after his wife fell into the river?
   A. He ran to town for help.
   B. He jumped into the water after her.
   C. He stood there dumbfounded.
   D. He said he spent the entire day looking for her.

4. Who helped the man look for his wife?
   A. The police.
   B. Some strangers passing by.
   C. Some friends.
   D. Another man.

5. Where did the man look for his wife?
   A. Downstream.
   B. Upstream.
   C. In the trees.
   D. On the other side of the river.

6. Where did the others go to look for the woman?
   A. Downstream.
   B. Upstream.
   C. In the trees.
   D. On the other side of the river.

7. Why did the man look for his wife where he did?
   A. The current would have carried her some distance.
   B. He wanted to take revenge for all the unpleasantness he had suffered.
   C. She would always do the opposite of what was expected.
   D. He knew that that was her favorite spot.
PASSAGE I, PART II --- MULTIPLE-CHOICE QUESTIONS (USED FOR ITEM ANALYSIS AND ITEM SELECTION IN PRELIMINARY STAGE)

Select your answer to each of the following questions. Mark your answers on the answer sheet provided. Please do not mark on this paper.

8. The personality of the woman in the story can best be described as...
   A. backwards.
   B. insane.
   C. very agreeable.
   D. stubborn.

9. If the man said something was black, the woman would say...
   A. that she agreed.
   B. absolutely nothing.
   C. just the opposite.
   D. that he was a fool.

10. The woman fell into the river because...
    A. she wasn't looking where she was going.
    B. her husband was chasing her.
    C. her husband had pushed her.
    D. she wanted to give her husband a good scare.

11. The man ran back to town in order to...
    A. get help.
    B. find her.
    C. help his friends.
    D. celebrate with his friends.

12. The man was aided by...
    A. some strangers.
    B. Aldo.
    C. the sheriff.
    D. his friends.

13. Because the man searched where he did, the others thought he was...
    A. in the river.
    B. crazy.
    C. logical.
    D. right.

14. In order to look for the woman, the others went...
    A. into the woods.
    B. to where she fell in.
    C. with the current of the river.
    D. out in a boat.
15. The man looked for his wife where he did because...
   A. she went there often.
   B. she always did the opposite of what was expected.
   C. he didn't want to find her.
   D. that was where she was last seen by anyone.
PASSAGE II, PART I --- MULTIPLE-CHOICE QUESTIONS (USED FOR ITEM ANALYSIS AND ITEM SELECTION IN PRELIMINARY STAGE)

Select your answer to each of the following questions. Mark your answers on the answer sheet provided. Please do not mark on this paper.

16. How can you describe the narrator's knowledge of English right when she graduated from the university?
   A. It was fairly good.
   B. It was even better than her knowledge of Spanish.
   C. She was able to read and write it very well.
   D. She knew very little.

17. How does the narrator feel about English?
   A. She loved the language from the very start.
   B. She felt that it was a hard language.
   C. She felt no need at all to learn the language.
   D. She thought that everyone in the world should learn to speak it.

18. What was the narrator's first job after graduation?
   A. Director of an English-speaking school.
   B. Teacher of U.S. History.
   C. Teacher of Spanish.
   D. Secretary in an office.

19. What was the narrator's greatest fear about her first job?
   A. That she wouldn't be able to keep up with all of the paperwork.
   B. That the other people wouldn't like her.
   C. That the others would laugh at her.
   D. That the others would know more English than she did.

20. Who offered a solution to the narrator's problem?
   A. A North American friend.
   B. The principal of the school.
   C. A student.
   D. Her professor of English at the National University.

21. What did the narrator have to promise to do?
   A. To give the person who helped her Spanish lessons.
   B. To take more English courses at the university.
   C. To write out the lessons and memorize them.
   D. To write a letter to her North American friend every week.
PASSAGE II, PART I --- MULTIPLE-CHOICE QUESTIONS (USED FOR ITEM ANALYSIS AND ITEM SELECTION IN PRELIMINARY STAGE) cont'd

22. How did the narrator decide to kill time when she still had ten minutes left?
   A. She told jokes.
   B. She played games.
   C. She taught the students some Spanish.
   D. She talked more and more slowly.

23. In order to fill up an entire class period, what did the narrator always have with her?
   A. Her English books.
   B. Extra lessons.
   C. Plenty of games to play.
   D. Some new Spanish vocabulary to teach the students.
PASSAGE II, PART II --- MULTIPLE-CHOICE QUESTIONS (USED FOR ITEM ANALYSIS AND ITEM SELECTION IN PRELIMINARY STAGE)

Select your answer to each of the following questions. Mark your answers on the answer sheet provided. Please do not mark on this paper.

24. Immediately upon finishing her studies at the National University, the narrator did not know...
   A. where to find a job.
   B. how to write papers in her own language.
   C. how to speak English.
   D. how to teach history.

25. After graduation, the narrator's first job was...
   A. teaching history.
   B. directing an English-speaking school.
   C. working in an office.
   D. teaching English.

26. The narrator's greatest fear about the people who was going to work with was that...
   A. they wouldn't speak any English.
   B. they would laugh at her and make fun of her.
   C. they would speak English better than she did.
   D. there was such a great age difference between her and these people.

27. A solution to the narrator's problem was offered by...
   A. her professor.
   B. a North American friend.
   C. the principal of the school.
   D. the students.

28. As a condition for the solution to her problem, the narrator had to promise to...
   A. write out and memorize all her lessons.
   B. write a letter to her North American friend every week.
   C. take additional courses in English at the National University.
   D. teach her friend Spanish in exchange for the help she had given her.

29. When she found that she had ten minutes left before the end of class, the narrator decided to kill time by...
   A. reading a book.
   B. playing some word games with the class.
   C. speaking to the class in Spanish.
   D. talking more slowly.
PASSAGE II, PART II --- MULTIPLE-CHOICE QUESTIONS (USED FOR
ITEM ANALYSIS AND ITEM SELECTION IN
PRELIMINARY STAGE) cont'd

30. In the situation when she had to kill time, the narrator found unexpected relief when...
   A. the students were called to a pep rally.
   B. someone had a question to ask.
   C. the bell rang for a fire drill.
   D. no one laughed at her.

31. To avoid not having enough material to work with until the end of class, from then on, the narrator always had...
   A. additional pages of work.
   B. a storybook.
   C. some Spanish games for the students to play.
   D. a Spanish-English dictionary.
PASSAGE III, PART I --- MULTIPLE-CHOICE QUESTIONS (USED FOR ITEM ANALYSIS AND ITEM SELECTION IN PRELIMINARY STAGE)

Select the answer to each of the following questions. Mark your answers on the answer sheet provided. Please do not mark on this paper.

32. Why did Dr. Atl go to Europe?
   A. To paint pictures of Europe.
   B. To visit the mountains.
   C. To display his art works.
   D. To paint portraits of men and women.

33. Where did Dr. Atl go to paint?
   A. The mountains.
   B. Europe.
   C. Paris.
   D. Wherever he could find interesting people.

34. To what did Dr. Atl dedicate his life?
   A. Painting.
   B. Finding old, significant ruins.
   C. Building roads on the more important mountains of Mexico.
   D. The practice of medicine.

35. What does the word "Atl" mean?
   A. Indian.
   B. Mountain.
   C. Art.
   D. Water.

36. What did Dr. Atl decide to do immediately after returning from Europe?
   A. To imitate the European style of art.
   B. To paint portraits of Mexican men and women.
   C. To paint only Mexico.
   D. To stop attending art exhibits.

37. What did Dr. Atl think of European art?
   A. It contained no detail.
   B. He didn't want to imitate it.
   C. He wanted it to influence his own work.
   D. It did not contain enough figures of men and women to suit his tastes.
PASSAGE III, PART I --- MULTIPLE-CHOICE QUESTIONS (USED FOR ITEM ANALYSIS AND ITEM SELECTION IN PRELIMINARY STAGE) cont'd

38. How do you know that Dr. Atl liked the volcano Popocatépetl?
   A. He thought it was mysterious.
   B. He liked to observe the people who lived in the villages on the sides of the volcano.
   C. He gave many lectures about it.
   D. He made many trips there to paint it.

39. What is strikingly absent from Dr. Atl's paintings?
   A. Animals.
   B. People.
   C. Buildings.
   D. Mountains.
PASSAGE III, PART II --- MULTIPLE-CHOICE QUESTIONS (USED FOR ITEM ANALYSIS AND ITEM SELECTION IN PRELIMINARY STAGE)

Select the answer to each of the following questions. Mark your answers on the answer sheet provided. Please do not mark on this paper.

40. Gerardo Murillo was a...
   A. painter.
   B. geologist.
   C. European.
   D. portrait artist.

41. Gerardo Murillo went to Europe in order to...
   A. return home.
   B. see the volcanoes there.
   C. exhibit his work.
   D. paint the mountains.

42. After his trip to Europe, Gerardo Murillo decided that his work would reflect only...
   A. the European style.
   B. the personality of Mexico.
   C. mountains.
   D. images of Mexican people.

43. The word "Atl" means...
   A. art.
   B. Indian.
   C. soul.
   D. water.

44. Murillo's favorite pastime was to...
   A. look at paintings.
   B. spend time in the mountains.
   C. go boating in the rivers.
   D. take vacations in Europe.

45. The people thought that the mysterious light on the road to the volcano was...
   A. the sign of the beginning of a volcanic eruption.
   B. a mistake in the painting.
   C. an unidentified flying object.
   D. a spirit of a dead person.

46. The mysterious light which the people saw on the road to the volcano appeared because...
   A. Dr. Atl was up there.
   B. hot lava was flowing out from a volcanic eruption.
   C. there was a reflection of the moon on some metal.
   D. the townspeople were climbing to the top of the volcano to see what was going on.
47. Typically absent from Dr. Atl's works are...
   A. mountains.
   B. buildings.
   C. people.
   D. animals.
ASSIGNMENT TO TREATMENT: EXAMPLE TAKEN FROM PILOT STUDY

<table>
<thead>
<tr>
<th>CLASS HOUR</th>
<th>NUMBER OF SUBJECTS</th>
<th>TREATMENT:</th>
<th>ROW:</th>
<th>TOTALS PER TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>18</td>
<td>1 2 3 4</td>
<td>A B C D E F G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 3 2 3 4 2 2</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>25</td>
<td>1 2 3 4</td>
<td>A B C D E F G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 3 5 3 4 3 4</td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>21</td>
<td>1 2 3 4</td>
<td>A B C D E F G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 3 3 2 3 2 3</td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td>17</td>
<td>1 2 3 4</td>
<td>A B C D E F G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 2 2 2 2 3 4</td>
<td></td>
</tr>
<tr>
<td>1:00</td>
<td>15</td>
<td>1 2 3 4</td>
<td>A B C D E F G</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 2 2 2 3 2 2</td>
<td></td>
</tr>
</tbody>
</table>

Total Number of Subjects Per Treatment:

- Treatment I --- 24
- Treatment II --- 24
- Treatment III --- 24
- Treatment IV --- 24
<table>
<thead>
<tr>
<th>G</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>A</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

CONSOLE

DOOR

Front of Room
LISTENING FORMAT I, INTRODUCTION:

During this experiment you will be listening to three selections in Spanish. In your booklet you will be given some guiding questions in English to read BEFORE you listen to each passage. These questions may help you understand the passage better. You are to read and study these guiding questions carefully. Then when instructed to do so by the voice on the tape, remove this question sheet and put it in the envelope provided. Do not refer back to these questions once you have put them in the envelope.

You are then to listen carefully to the tape. Note that you will hear each passage only once. After listening to each passage, you will be instructed to break the seals on the page covering the multiple-choice questions. Do not break the seals on these pages until you are instructed to do so. Mark your answers to the multiple-choice items on the computer sheet that the researcher has given you.

In summary:
1. When told to do so, break the seals. Read and study the guiding questions carefully.
2. When told to do so, remove this question sheet and put it in the envelope. Do not look at this question sheet again.
3. Listen to the passage carefully. Do not attempt to write anything while you listen to the passage. You will hear the passage only once.
4. When told to do so, break the next seals. Answer the multiple-choice questions. Mark your answers on the computer sheet.

This basic procedure is to be followed for each of the three passages. Note that these instructions will be repeated for each passage.

Now turn to page 2 in your booklet. Break the seals. Read and study the questions that appear on page 3. These questions are about the first passage you will hear.
DO NOT BREAK THESE SEALS UNTIL YOU ARE INSTRUCTED TO DO SO.
GUIDING QUESTIONS ON THE FIRST PASSAGE
READ AND STUDY THESE QUESTIONS CAREFULLY.

1. How can you describe the woman in the story?
2. Why did the woman fall into the river?
3. Where did the man look for his wife?
4. Where did the others go to look for the woman?
5. Why did the man look for his wife where he did?

REMOVE THIS SHEET WHEN YOU ARE INSTRUCTED TO DO SO.
PUT IT IN THE ENVELOPE PROVIDED.
DO NOT BREAK THESE SEALS UNTIL
YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE FIRST PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

1. How can you describe the woman in the story?
   A. She was insane.
   B. She was hard-headed and stubborn.
   C. She was tall and blond.
   D. She was out-going and athletic.

2. Why did the woman fall into the river?
   A. She wasn't looking where she was going.
   B. Her husband was chasing her.
   C. Her husband had pushed her.
   D. She wanted to give her husband a good scare.

3. Where did the man look for his wife?
   A. Downstream.
   B. Upstream.
   C. In the trees.
   D. On the other side of the river.

4. Where did the others go to look for the woman?
   A. Downstream.
   B. Upstream.
   C. In the trees.
   D. On the other side of the river.

5. Why did the man look for his wife where he did?
   A. The current would have carried her some distance.
   B. He wanted to take revenge for all the unpleasantness he had suffered.
   C. She would always do the opposite of what was expected.
   D. He knew that that was her favorite spot.
DO NOT BREAK THESE SEALS UNTIL
YOU ARE INSTRUCTED TO DO SO.
GUIDING QUESTIONS ON THE SECOND PASSAGE
READ AND STUDY THESE QUESTIONS CAREFULLY.

6. Who offered a solution to the narrator's problem?
7. What did the narrator have to promise to do?
8. How did the narrator decide to kill time when she still had ten minutes left?
9. How did the narrator find some unexpected relief when she found herself in the situation where she had to kill time?
10. In order to fill up an entire class period, what did the narrator always have with her from then on?

REMOVE THIS SHEET WHEN YOU ARE INSTRUCTED TO DO SO.
PUT IT IN THE ENVELOPE PROVIDED.
DO NOT BREAK THESE SEALS UNTIL YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE SECOND PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

6. Who offered a solution to the narrator's problem?
   A. A North American friend.
   B. The principal of the school.
   C. A student.
   D. Her professor of English at the National University.

7. What did the narrator have to promise to do?
   A. To give Spanish lessons to the person who helped her.
   B. To take more English courses at the university.
   C. To write out the lessons and memorize them.
   D. To write a letter to her North American friend every week.

8. How did the narrator decide to kill time when she still had ten minutes left?
   A. She told jokes.
   B. She played games.
   C. She taught the students some Spanish.
   D. She talked more slowly.

9. How did the narrator find some unexpected relief when she found herself in the situation where she had to kill time?
   A. She was called to the principal's office.
   B. Someone had a question to ask.
   C. The bell rang for a fire drill.
   D. The principal came to the room to make an announcement.

10. In order to fill up an entire class period, what did the narrator always have with her from then on?
    A. Her English books.
    B. Extra lessons.
    C. Plenty of games to play.
    D. Some new Spanish vocabulary to teach the students.
DO NOT BREAK THESE SEALS UNTIL YOU ARE INSTRUCTED TO DO SO.
GUIDING QUESTIONS ON THE THIRD PASSAGE
READ AND STUDY THESE QUESTIONS CAREFULLY.

11. Why did Gerardo Murillo go to Europe?
12. What did Gerardo Murillo decide to do immediately after returning from Europe?
13. What did Gerardo Murillo think of European art?
14. What does the word "Atl" mean?
15. What was the cause of the mysterious light which the people saw on the road to the volcano?

REMOVE THIS SHEET WHEN YOU ARE INSTRUCTED TO DO SO.
PUT IT IN THE ENVELOPE PROVIDED.
DO NOT BREAK THESE SEALS UNTIL
YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE THIRD PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

11. Why did Gerardo Murillo go to Europe?
   A. To return home.
   B. To see the volcanoes there.
   C. To exhibit his work.
   D. To paint the mountains.

12. What did Gerardo Murillo decide to do immediately after returning from Europe?
   A. To imitate the European style of art.
   B. To paint portraits of Mexican men and women.
   C. To paint only Mexico.
   D. To stop attending art exhibits.

13. What did Gerardo Murillo think of European art?
   A. It contained no detail.
   B. He didn't want to imitate it.
   C. He wanted it to influence his own work.
   D. It did not contain enough figures of men and women to suit his tastes.

14. What does the word "Atl" mean?
   A. Art.
   B. Indian.
   C. Soul.
   D. Water.

15. What was the cause of the mysterious light which the people saw on the road to the volcano?
   A. Dr. Atl was up there.
   B. Hot lava was flowing out from a volcanic eruption.
   C. There was a reflection of the moon on some metal.
   D. The townspeople were climbing to the top of the volcano to see what was going on.
LISTENING FORMAT II, INTRODUCTION:

During this experiment you will be listening to three selections in Spanish. In your booklet you will be given some questions in English to read AFTER you listen to each passage. These questions can help you check your comprehension.

First you are to listen carefully to the tape. Note that you will hear each passage only once. After listening to each passage you will be instructed to look at the page which has the appropriate guiding questions on it. You are to read and answer these guiding questions carefully. Then when instructed to do so by the voice on the tape, remove this question sheet and put it in the envelope provided. Do not refer back to this sheet once it is in the envelope. After this you will be asked to answer several multiple-choice questions on the passage. These multiple-choice questions are also on a sealed sheet in your test booklet. Mark your answers to the multiple-choice items on the computer sheet that the researcher has given you.

In summary:

1. Listen to the passage carefully. Do not attempt to write anything while you listen to the passage. You will hear the passage only once.
2. When told to do so, break the seals. Read the guiding questions carefully. Think about the answers to them.
3. When told to do so, remove this question sheet and put it in the envelope. Do not look at this question sheet again.
4. When told to do so, break the next seals. Answer the multiple-choice questions. Mark your answers on the computer sheet.

This basic procedure is to be followed for each of the three passages. Note that these instructions will be repeated for each passage.

Now listen carefully to the first passage.
DO NOT BREAK THESE SEALS UNTIL YOU ARE INSTRUCTED TO DO SO.
GUIDING QUESTIONS ON THE FIRST PASSAGE
READ AND STUDY THESE QUESTIONS CAREFULLY.

1. How can you describe the woman in the story?  
2. Why did the woman fall into the river?  
3. Where did the man look for his wife?  
4. Where did the others go to look for the woman?  
5. Why did the man look for his wife where he did?

REMOVE THIS SHEET WHEN YOU ARE INSTRUCTED TO DO SO.  
PUT IT IN THE ENVELOPE PROVIDED.
DO NOT BREAK THESE SEALS UNTIL
YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE FIRST PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

1. How can you describe the woman in the story?
   A. She was insane.
   B. She was hard-headed and stubborn.
   C. She was tall and blonde.
   D. She was out-going and athletic.

2. Why did the woman fall into the river?
   A. She wasn't looking where she was going.
   B. Her husband was chasing her.
   C. Her husband had pushed her.
   D. She wanted to give her husband a good scare.

3. Where did the man look for his wife?
   A. Downstream.
   B. Upstream.
   C. In the trees.
   D. On the other side of the river.

4. Where did the others go to look for the woman?
   A. Downstream.
   B. Upstream.
   C. In the trees.
   D. On the other side of the river.

5. Why did the man look for his wife where he did?
   A. The current would have carried her some distance.
   B. He wanted to take revenge for all the unpleasantness he had suffered.
   C. She would always do the opposite of what was expected.
   D. He knew that that was her favorite spot.
DO NOT BREAK THESE SEALS UNTIL
UNTIL YOU ARE INSTRUCTED TO DO SO.
GUIDING QUESTIONS ON THE SECOND PASSAGE
READ AND STUDY THESE QUESTIONS CAREFULLY.

6. Who offered a solution to the narrator's problem?
7. What did the narrator have to promise to do?
8. How did the narrator decide to kill time when she still had ten minutes left?
9. How did the narrator find some unexpected relief when she found herself in the situation where she had to kill time?
10. In order to fill up an entire class period, what did the narrator always have with her from then on?

REMOVE THIS SHEET WHEN YOU ARE INSTRUCTED TO DO SO.
PUT IT IN THE ENVELOPE PROVIDED.
DO NOT BREAK THESE SEALS UNTIL YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE SECOND PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

6. Who offered a solution to the narrator's problem?
   A. A North American friend.
   B. The principal of the school.
   C. A student.
   D. Her professor of English at the National University.

7. What did the narrator have to promise to do?
   A. To give Spanish lessons to the person who helped her.
   B. To take more English courses at the university.
   C. To write out the lessons and memorize them.
   D. To write a letter to her North American friend every week.

8. How did the narrator decide to kill time when she still had ten minutes left?
   A. She told jokes.
   B. She played games.
   C. She taught the students some Spanish.
   D. She talked more and more slowly.

9. How did the narrator find some unexpected relief when she found herself in the situation where she had to kill time?
   A. She was called to the principal's office.
   B. Someone had a question to ask.
   C. The bell rang for a fire drill.
   D. The principal came to the room to make an announcement.

10. In order to fill up an entire class period, what did the narrator always have with her from then on?
    A. Her English books.
    B. Extra lessons.
    C. Plenty of games to play.
    D. Some new Spanish vocabulary to teach the students.
DO NOT BREAK THESE SEALS UNTIL YOU ARE INSTRUCTED TO DO SO.
GUIDING QUESTIONS ON THE THIRD PASSAGE

READ AND STUDY THESE QUESTIONS CAREFULLY.

11. Why did Gerardo Murillo go to Europe?
12. What did Gerardo Murillo decide to do immediately after returning from Europe?
13. What did Gerardo Murillo think of European art?
14. What does the word "Atl" mean?
15. What was the cause of the mysterious light which the people saw on the road to the volcano?

REMOVE THIS SHEET WHEN YOU ARE INSTRUCTED TO DO SO.
PUT IT IN THE ENVELOPE PROVIDED.
DO NOT BREAK THESE SEALS UNTIL YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE THIRD PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

11. Why did Gerardo Murillo go to Europe?
A. To return home.
B. To see the volcanoes there.
C. To exhibit his work.
D. To paint the mountains.

12. What did Gerardo Murillo decide to do immediately after returning from Europe?
A. To imitate the European style of art.
B. To paint portraits of Mexican men and women.
C. To paint only Mexico.
D. To stop attending art exhibits.

13. What did Gerardo Murillo think of European art?
A. It contained no detail.
B. He didn't want to imitate it.
C. He wanted it to influence his own work?
D. It did not contain enough figures of men and women to suit his tastes.

14. What does the word "Atl" mean?
A. Art.
B. Indian.
C. Soul.
D. Water.

15. What was the cause of the mysterious light which the people saw on the road to the volcano?
A. Dr. Atl was up there.
B. Hot lava was flowing out from a volcanic eruption.
C. There was a reflection of the moon on some metal.
D. The townspeople were climbing to the top of the volcano to see what was going on.
LISTENING FORMAT III. INTRODUCTION:

During this experiment you will be listening to three selections in Spanish. In your booklet you will be given some questions in English to read and refer to WHILE you listen to each passage. These questions can help you check your comprehension.

When you are instructed to do so, open your test booklet to the page specified. Read and study these guiding questions carefully. You will be able to look at these guiding questions while you are listening to the passage. Note that you will hear each passage only once. After listening to each passage, you will be asked to answer several multiple-choice questions on the passage. These multiple-choice questions are also on a sealed sheet in your test booklet. Mark your answers to the multiple-choice items on the computer sheet that the researcher has given you.

In summary:

1. When told to do so, break the seals. Read and study the guiding questions carefully.
2. Keep these questions in front of you as you listen to the passage.
3. Listen to the passage carefully. Do not attempt to write anything while you listen to the passage. You will hear the passage only once.
4. When told to do so, break the next seals. Answer the multiple-choice questions. Mark your answers on the computer sheet.

This basic procedure is to be followed for each of the three passages. Note that these instructions will be repeated for each passage.

Now turn to page 2 in your booklet. Break the seals. Read and study the questions that appear on page 3. These questions are about the first passage you will hear. You may look at these questions as you listen to the passage.
DO NOT BREAK THESE SEALS UNTIL
YOU ARE INSTRUCTED TO DO SO.
GUIDING QUESTIONS ON THE FIRST PASSAGE
READ AND STUDY THESE QUESTIONS CAREFULLY

1. How can you describe the woman in the story?
2. Why did the woman fall into the river?
3. Where did the man look for his wife?
4. Where did the others go to look for the woman?
5. Why did the man look for his wife where he did?

YOU MAY KEEP THESE QUESTIONS BEFORE YOU
WHILE YOU LISTEN TO THE PASSAGE.
DO NOT BREAK THESE SEALS UNTIL
YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE FIRST PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

1. How can you describe the woman in the story?
   A. She was insane.
   B. She was hard-headed and stubborn.
   C. She was tall and blonde.
   D. She was out-going and athletic.

2. Why did the woman fall into the river?
   A. She wasn't looking where she was going.
   B. Her husband was chasing her.
   C. Her husband had pushed her.
   D. She wanted to give her husband a good scare.

3. Where did the man look for his wife?
   A. Downstream.
   B. Upstream.
   C. In the trees.
   D. On the other side of the river.

4. Where did the others go to look for the woman?
   A. Downstream.
   B. Upstream.
   C. In the trees.
   D. On the other side of the river.

5. Why did the man look for his wife where he did?
   A. The current would have carried her some distance.
   B. He wanted to take revenge for all the unpleasantness he had suffered.
   C. She would always do the opposite of what was expected.
   D. He knew that that was her favorite spot.
DO NOT BREAK THESE SEALS UNTIL
YOU ARE INSTRUCTED TO DO SO.
GUIDING QUESTIONS ON THE SECOND PASSAGE
READ AND STUDY THESE QUESTIONS CAREFULLY.

6. Who offered a solution to the narrator's problem?
7. What did the narrator have to promise to do?
8. How did the narrator decide to kill time when she still had ten minutes left?
9. How did the narrator find some unexpected relief when she found herself in the situation where she had to kill time?
10. In order to fill up an entire class period, what did the narrator always have with her from then on?

YOU MAY KEEP THESE QUESTIONS BEFORE YOU
WHILE YOU LISTEN TO THE PASSAGE.
DO NOT BREAK THESE SEALS UNTIL YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE SECOND PASSAGE

MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

6. Who offered a solution to the narrator's problem?
   A. A North American friend.
   B. The principal of the school.
   C. A student.
   D. Her professor of English at the National University.

7. What did the narrator have to promise to do?
   A. To give Spanish lessons to the person who helped her.
   B. To take more English courses at the university.
   C. To write out the lessons and memorize them.
   D. To write a letter to her North American friend every week.

8. How did the narrator decide to kill time when she still had ten minutes left?
   A. She told jokes.
   B. She played games.
   C. She taught the students some Spanish.
   D. She talked more and more slowly.

9. How did the narrator find some unexpected relief when she found herself in the situation where she had to kill time?
   A. She was called to the principal's office.
   B. Someone had a question to ask.
   C. The bell rang for a fire drill.
   D. The principal came to the room to make an announcement.

10. In order to fill up an entire class period, what did the narrator always have with her from then on?
    A. Her English books.
    B. Extra lessons.
    C. Plenty of games to play.
    D. Some new Spanish vocabulary to teach the students.
DO NOT BREAK THESE SEALS UNTIL
YOU ARE INSTRUCTED TO DO SO.
GUIDING QUESTIONS ON THE THIRD PASSAGE
READ AND STUDY THESE QUESTIONS CAREFULLY.

11. Why did Gerardo Murillo go to Europe?
12. What did Gerardo Murillo decide to do immediately after returning from Europe?
13. What did Gerardo Murillo think of European art?
14. What does the word "Atl" mean?
15. What was the cause of the mysterious light which the people saw on the road to the volcano?

YOU MAY KEEP THESE QUESTIONS BEFORE YOU
WHILE YOU LISTEN TO THE PASSAGE.
DO NOT BREAK THESE SEALS UNTIL YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE THIRD PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

11. Why did Gerardo Murillo go to Europe?
   A. To return home.
   B. To see the volcanoes there.
   C. To exhibit his work.
   D. To paint the mountains.

12. What did Gerardo Murillo decide to do immediately after returning from Europe?
   A. To imitate the European style of art.
   B. To paint portraits of Mexican men and women.
   C. To paint only Mexico.
   D. To stop attending art exhibits.

13. What did Gerardo Murillo think of European art?
   A. It contained no detail.
   B. He didn't want to imitate it.
   C. He wanted it to influence his own work.
   D. It did not contain enough figures of men and women to suit his tastes.

14. What does the word "Atl" mean?
   A. Art.
   B. Indian.
   C. Soul.
   D. Water.

15. What was the cause of the mysterious light which the people saw on the road to the volcano?
   A. Dr. Atl was up there.
   B. Hot lava was flowing out from a volcanic eruption.
   C. There was a reflection of the moon on some metal.
   D. The townspeople were climbing to the top of the volcano to see what was going on.
LISTENING FORMAT IV, INTRODUCTION:

During this experiment you will be listening to three selections in Spanish. Please note that you will hear each passage only once. After listening to each selection you will be given some multiple-choice questions in English in your test booklet to read and answer. Mark the answers to these questions on the computer sheet provided by the researcher. Do not look at the questions until you are instructed to do so by the voice on the tape.

In summary:
1. Listen to the passage carefully. Do not attempt to write anything while you listen to the passage. You will hear each passage only once.
2. When told to do so, break the seals. Answer the multiple-choice questions. Mark your answers on the computer sheet.

This basic procedure is to be followed for each of the three passages. Note that these instructions will be repeated for each passage.

Now listen carefully to the first passage.
DO NOT BREAK THESE SEALS UNTIL YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE FIRST PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

1. How can you describe the woman in the story?
   A. She was insane.
   B. She was hard-headed and stubborn.
   C. She was tall and blond.
   D. She was out-going and athletic.

2. Why did the woman fall into the river?
   A. She wasn't looking where she was going.
   B. Her husband was chasing her.
   C. Her husband had pushed her.
   D. She wanted to give her husband a good scare.

3. Where did the man look for his wife?
   A. Downstream.
   B. Upstream.
   C. In the trees.
   D. On the other side of the river.

4. Where did the others go to look for the woman?
   A. Downstream.
   B. Upstream.
   C. In the trees.
   D. On the other side of the river.

5. Why did the man look for his wife where he did?
   A. The current would have carried her some distance.
   B. He wanted to take revenge for all the unpleasantness he had suffered.
   C. She would always do the opposite of what was expected.
   D. He knew that that was her favorite spot.
DO NOT BREAK THESE SEALS UNTIL
YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE SECOND PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

6. Who offered a solution to the narrator's problem?
   A. A North American friend.
   B. The principal of the school.
   C. A student.
   D. Her professor of English at the National University.

7. What did the narrator have to promise to do?
   A. To give Spanish lessons to the person who helped her.
   B. To take more English courses at the university.
   C. To write out the lessons and memorize them.
   D. To write a letter to her North American friend every week.

8. How did the narrator decide to kill time when she still had ten minutes left?
   A. She told jokes.
   B. She played games.
   C. She taught the students some Spanish.
   D. She talked more and more slowly.

9. How did the narrator find some unexpected relief when she found herself in the situation where she had to kill time?
   A. She was called to the principal's office.
   B. Someone had a question to ask.
   C. The bell rang for a fire drill.
   D. The principal came to the room to make an announcement.

10. In order to fill up an entire class period, what did the narrator always have with her from then on?
    A. Her English books.
    B. Extra lessons.
    C. Plenty of games to play.
    D. Some new Spanish vocabulary to teach the students.
DO NOT BREAK THESE SEALS UNTIL
YOU ARE INSTRUCTED TO DO SO.
MULTIPLE-CHOICE QUESTIONS ON THE THIRD PASSAGE
MARK THE ANSWERS TO THESE QUESTIONS ON YOUR COMPUTER SHEET.

11. Why did Gerardo Murillo go to Europe?
   A. To return home.
   B. To see the volcanoes there.
   C. To exhibit his work.
   D. To paint the mountains.

12. What did Gerardo Murillo decide to do immediately after returning from Europe?
   A. To imitate the European style of art.
   B. To paint portraits of Mexican men and women.
   C. To paint only Mexico.
   D. To stop attending art exhibits.

13. What did Gerardo Murillo think of European art?
   A. It contained no detail.
   B. He didn't want to imitate it.
   C. He wanted it to influence his own work.
   D. It did not contain enough figures of men and women to suit his tastes.

14. What does the word "Atl" mean?
   A. Art.
   B. Indian.
   C. Soul.
   D. Water.

15. What was the cause of the mysterious light which the people saw on the road to the volcano?
   A. Dr. Atl was up there.
   B. Hot lava was flowing out from a volcanic eruption.
   C. There was a reflection of the moon on some metal.
   D. The townspeople were climbing to the top of the volcano to see what was going on.
EXPERIMENTAL DATA

Key to Numbering Code Used on the Data Cards

Sample: 8091 010243422233222314

8 --- Class Number
09 --- Student's Number within the Class
1 --- Treatment Number: (1) prequestions, (2) post-
questions, (3) interspersed prequestions, (4) no
questions (control)

010 --- Total Number of Correct Answers for Student 8091
out of a Possible Score of 15.

243422233222314 --- Answers Which Student 8091 Marked for
the Retention Test Questions---
Choice of . . .
A is coded as 4,
B is coded as 3,
C is coded as 2,
D is coded as 1.

<table>
<thead>
<tr>
<th>8091</th>
<th>010243422233222314</th>
</tr>
</thead>
<tbody>
<tr>
<td>8081</td>
<td>015343424212322314</td>
</tr>
<tr>
<td>8079</td>
<td>015343424212322314</td>
</tr>
<tr>
<td>8063</td>
<td>015343424212322314</td>
</tr>
<tr>
<td>8054</td>
<td>005343413414413114</td>
</tr>
<tr>
<td>8042</td>
<td>0053411223213313412</td>
</tr>
<tr>
<td>8031</td>
<td>007311444322124214</td>
</tr>
<tr>
<td>8022</td>
<td>00344141432412232</td>
</tr>
<tr>
<td>8011</td>
<td>010313421211323114</td>
</tr>
<tr>
<td>7024</td>
<td>011344442414123114</td>
</tr>
<tr>
<td>7044</td>
<td>007341224321422224</td>
</tr>
<tr>
<td>7114</td>
<td>007413124323122311</td>
</tr>
<tr>
<td>7184</td>
<td>008334324211412414</td>
</tr>
<tr>
<td>7204</td>
<td>013343424211312314</td>
</tr>
<tr>
<td>7224</td>
<td>009314124212323314</td>
</tr>
<tr>
<td>7234</td>
<td>008241411213322413</td>
</tr>
<tr>
<td>7254</td>
<td>005312123223224124</td>
</tr>
<tr>
<td>7013</td>
<td>011413424214322312</td>
</tr>
<tr>
<td>7033</td>
<td>013343424412122314</td>
</tr>
<tr>
<td>7053</td>
<td>011313424212322313</td>
</tr>
<tr>
<td>7083</td>
<td>006244121423131114</td>
</tr>
<tr>
<td>7113</td>
<td>00641221213422241</td>
</tr>
<tr>
<td>7133</td>
<td>003244343123412414</td>
</tr>
<tr>
<td>7153</td>
<td>004241421423413434</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td></td>
<td>3113</td>
</tr>
<tr>
<td></td>
<td>3133</td>
</tr>
<tr>
<td></td>
<td>3082</td>
</tr>
<tr>
<td></td>
<td>3102</td>
</tr>
<tr>
<td></td>
<td>3012</td>
</tr>
<tr>
<td></td>
<td>3162</td>
</tr>
<tr>
<td></td>
<td>3051</td>
</tr>
<tr>
<td></td>
<td>3061</td>
</tr>
<tr>
<td></td>
<td>3121</td>
</tr>
<tr>
<td></td>
<td>3141</td>
</tr>
<tr>
<td></td>
<td>3151</td>
</tr>
<tr>
<td></td>
<td>2054</td>
</tr>
<tr>
<td></td>
<td>2084</td>
</tr>
<tr>
<td></td>
<td>2104</td>
</tr>
<tr>
<td></td>
<td>2144</td>
</tr>
<tr>
<td></td>
<td>2124</td>
</tr>
<tr>
<td></td>
<td>2164</td>
</tr>
<tr>
<td></td>
<td>2014</td>
</tr>
<tr>
<td></td>
<td>2023</td>
</tr>
<tr>
<td></td>
<td>2203</td>
</tr>
<tr>
<td></td>
<td>2133</td>
</tr>
<tr>
<td></td>
<td>2093</td>
</tr>
<tr>
<td></td>
<td>2183</td>
</tr>
<tr>
<td></td>
<td>2032</td>
</tr>
<tr>
<td></td>
<td>2192</td>
</tr>
<tr>
<td></td>
<td>2062</td>
</tr>
<tr>
<td></td>
<td>2042</td>
</tr>
<tr>
<td></td>
<td>2172</td>
</tr>
<tr>
<td></td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td>2111</td>
</tr>
<tr>
<td></td>
<td>2151</td>
</tr>
<tr>
<td></td>
<td>1044</td>
</tr>
<tr>
<td></td>
<td>1023</td>
</tr>
<tr>
<td></td>
<td>1063</td>
</tr>
<tr>
<td></td>
<td>1032</td>
</tr>
<tr>
<td></td>
<td>1011</td>
</tr>
<tr>
<td></td>
<td>1051</td>
</tr>
</tbody>
</table>

End