

## THE RESEARCH REPORT FORMAT

In Chapter 1, we defined research as the most systematic way of answering questions. We have talked about some of the steps in planning a research project and how to avoid or best deal with the many problems which challenge our ability to make claims based on our results. These steps can be considered as parts of the overall research project which we will eventually share with others in a paper or report.

Every field has its own set of conventions as to how a research report should be organized. (Courses called "The Research Paper" can become a nightmare for TESL teachers if their students come from English and engineering and psychology and five other fields besides.) The easiest way to discover the report format for any field is to check the major journals that members of that field subscribe to. In Applied Linguistics most of our research journals use the APA format, a format from the American Psychological Association.

Whatever the format, all research reports are set up to ask: *What* do you intend to do? (the research question) *Why* is the work important? (the rationale). *What* has already been done? (the review of related literature). *What* are your predictions about your work? (the hypotheses). *How* are you going to carry out your research? (the method). *What* are your results? (the findings). So far, we have briefly discussed the first five questions.

Within the APA format, these questions are divided into three major sections: introduction, method, and results. But before you begin the introduction, there are the following preliminaries:

### *Title*

(Concise and exact, capitalize major words)

### *Your name*

(Double space below title, first letters in caps)

### *Your Affiliation*

(Your school/university; double space below name, first letters in caps)

This is followed by an *abstract* of approximately 150 words which states the research question, method, and results. This is the part everyone reads to decide whether they really want to read the whole report.

The *introduction* is the first major section of the paper. It is not labeled but begins with a brief introduction to the area of investigation. The research question is introduced, though not necessarily as a formal question at this point. This introduction tells us why you (or everyone) believe this to be an area that needs investigation.

The second part of the introduction section is the review of the literature which relates to the research question. It usually has a side heading: *Review of Related Literature*. However, if there is not much related literature, you may omit this side heading and simply integrate the related literature into the rest of the introduction.

The related literature should be *closely* related. For example, suppose you are interested in finding out whether native speakers of English and second language learners have a system for assigning *un-*, *dis-*, *in-*, *non-*, and other negative prefixes to lexical items. You will not include a complete review of all the work that has been done on derivational morphology or all the papers ever written on negation. You will want to be as conversant with this literature as possible, but if it does not relate *directly* to your research, don't include it. You should include papers on negative prefixes and any papers which make claims about how we decide among them.

Following the review of the literature, the reader should be ready for the tightly defined research question which grew out of the general introduction to the research area and the review of the literature. The question(s) should be followed by the hypothesis/hypotheses, your best guesses or predictions on the outcome of the research.

This completes the introduction section. It answers the first four questions: *What* do you intend to do? *Why* is the work important? *What* has already been done? *What* are your predictions about your work?

The *method* section answers the next question: *How* are you going to do the work? It consists of three sections: *subjects*, *materials and procedures*, and *data analysis*, in the following format:

#### *Method*

(Centered, underlined, and capitalized)

*Subjects.* (A major side heading just like this.) The number of *Ss* is given and they are described in ways relevant to your research. The groups, and the criteria for grouping your *Ss*, are given. For example, it might look like this:

*Subjects.* 350 *Ss* representing 18 different language backgrounds participated in this study. They were divided into three proficiency groups: 112 beginning level; 73 intermediate level; and 165 advanced. Students were placed in these levels on the basis of the UCLA ESL Placement Examination. All students were enrolled in classes during the fall quarter, a period of 10 weeks.

As you read the section, you should check to see whether Ss were randomly selected. In the above example, Ss were assigned to levels not on a random basis but by test scores. No mention is made of the number of different sections, but you can be sure no teacher accepted 165 students in one class. Since no information is given, we must assume the Ss themselves decided on which class to take on some personal basis. Again, although Ss came from a variety of language backgrounds, we do not know if a representative sample from each group appeared in each proficiency level. This may or may not be important depending on the research question.

Consider the following example:

*Subjects.* 100 Ss were randomly selected from the foreign student population studying ESL at Southern Illinois University. 20 were selected from each of the five proficiency class levels, beginning to advanced. Half of the stratified random sample was assigned to a control and half to the experimental group using a table of random numbers. While sex and national origin were not used in the selection procedure, the ratio of male to female and among the various nationality groups is representative of our student enrollment at each of our five levels. Table 1 shows the distribution of Ss in control and experimental groups by sex and first language membership.

From such a description it is possible for the reader to feel fairly confident that the 100-subject sample is representative of the whole population of foreign students studying at S.I.U. The table should allow teachers in other universities to judge whether or not the sample appears to be representative of foreign students at their universities as well.

*Materials and procedures.* (This is the second section heading within the method section.) Any materials used in the study are described in detail. If you are administering a test, say of noun compounding types, you would first list the types and examples of each. Then you would prepare a chart that showed the number of items for each type in the test, and the order of presentation of the items for each test form. Usually, the test itself is not included in the paper. It would be included in the Materials Appendix of a full report. In a short journal report, the test is usually described and examples are given along with a note that full test materials are available on request from the author(s).

If the materials are teaching materials, then a description of the number of units, lessons, activity types, etc., would be given. Examples of each might also be included in brief with further examples available in the Appendix or from the researcher.

The procedure follows the description of the materials. This section gives a concise step-by-step description of how you collected the data. It might look something like this:

Instructions for the cloze tests were read aloud by the E, and were also provided in writing. An example was provided at the beginning of each test booklet. It was pointed out that only one word should be

used per blank. A second test was administered after an interval of three weeks. Although some practice effect on test type was to be expected on test 2, this was considered irrelevant to the present study as the ranking of students on the tests might be expected to remain the same, the best students achieving the top scores, the weakest achieving the lowest scores.

Could you, in fact, replicate this study by following the procedure? What information is left out? Is it important to know whether the tests were given in the classroom? Is it important to know how long the procedure took? Would you need to know whether *Ss* were given the opportunity to ask questions during the reading of the instructions? There are always some unanswered questions since, in journal articles, space is at a premium. If you are replicating someone's procedure and you are not sure exactly how the research was carried out, it is always best to write the author for a more elaborate explanation.

Since the materials and procedure describe how you plan to obtain your data, you must make sure they are as good as you can possibly make them. Once the data have been gathered, it's too late to say *oh-oh, I forgot about. . .* Unless you have an unlimited number of *Ss* to work with, it's wise to take care; try the procedure several times with individual pilot *Ss* to work out ahead of time as many of the bugs as possible. If you are training others to help gather your data, you must allow several practice sessions (and spot checking later as well) to be sure that your procedure is followed. If the procedure is carefully described, anyone can replicate your study for their own satisfaction and hope to obtain the same results.

Data Analysis. This section (again with a heading at the side) allows you to give your design in a brief form and to give the statistical tests that you used (or will use if this is a proposal for research). It explains what you did with the data after you collected them. What you did with the data is important for it tells us how you plan to support your case or how you plan to draw inferences about other learners from the data. This section is obligatory in a research proposal. In research reports, it is often omitted since all the analyses will be reported in the last major section of the report: the *results* section.

### *Results*

(Usually centered, underlined, and capitalized)

If the study is complicated, the result section is usually divided into two sections—the findings and the discussion. Many people who are not really conversant with experimental research skip the whole findings section and go directly to “what it all means,” the discussion section. This is a very risky thing to do. You'd be surprised how often a close examination of the findings makes you question statements in the discussion section. Researchers (who should know better!) sometimes make wild claims which really aren't supported by the findings.

The *findings* are first presented as data description. Then the findings of the various statistical tests (which allow us to make inferences) are given. This is the

hard data that say whether or not the hypotheses, the hunches the researcher had, have been supported or not.

In the *discussion* section, the researcher (you) has a chance to give an interpretation of the findings. If the hypotheses are supported, you should still consider possible alternative explanations for your findings (if there are any left). If the hypotheses are not supported, then you should consider why not (whether something went wrong in your planning or whether in fact you now believe your hunches were wrong after all). If the fault is in the research plan, if you didn't consider some alternatives which popped up later, then you should suggest that other researchers (or you yourself) might consider this in the next investigation of the topic. In M.A. and Ph.D. theses, these suggestions sometimes are a major part of the paper—so many things went wrong or new ideas occurred only on writing up the results. Sometimes there are so many that “further research” becomes a chapter in itself. Seasoned researchers also make mistakes; they too learn what they should have done too late. These mistakes, for the sake of the field, must be admitted (though we don't label them as mistakes but as alternative explanations). At the very least, they should go into your “research-ideas notebook” for the future.

Journal reports conclude with a complete and accurate *Reference List*. The reference list includes all and only the related literature cited in the paper. In contrast, theses and research proposals often include a *Bibliography* of all related literature whether cited or not. This allows the evaluation committee to see whether you have, in fact, read the most important material on your research area.

The APA format, like any format, is flexible. For example, you may not need to describe a sample group of *Ss* because you don't have any. If you have collected spelling errors you saw on signs, ads, menus, in newspapers, etc., while you were on a two-year teaching assignment in Athens, then you don't need a subject section. You would probably simply go to Procedure, like this:

*Procedure.* During a two-year period, 1,364 spelling errors were collected from a variety of sources (observed signs, ads, menus, etc.) in the Athens area. The errors were then categorized according to a contrastive analysis of Greek and English (Aristotle, 1979). The errors were, subsequently, also categorized according to the major vs. minor spelling patterns of English (Dacanay & Bowen, 1962).

The purpose of having an accepted research format such as the APA is to allow readers to quickly find the information they need. It also helps researchers to organize their thoughts and assure completeness in the final report.

As you can see, we have already covered (admittedly in a very superficial way) the material included in the introduction section of the research report. We have also discussed the Subjects and Materials and Procedures sections briefly here.

We have not talked about materials and procedures for collecting data in any detail because these will vary according to your research question. The data that you collect may be from a test, a series of observations, interviews, survey

questionnaires, and so forth. Each of these has its own set of conventions or guidelines for data collection. These conventions must be understood and followed or, once again, you are likely to make mistakes which others have made before you. This is not the place to go through "how to write questionnaires" or "how to gather observational data" or "how to conduct an oral interview." The important thing is to take care, to operationally define each variable and make certain your procedure allows you to obtain information on each, and to set up your data collection in a systematic way. If you change your procedure halfway through your experiment, and then try two or three other ways, you will be in trouble when it comes time to defend your inconsistency or when it comes time to figure out a statistical approach that will allow you to say that your change in procedures didn't make any difference. If you plan your procedures carefully and follow them consistently, you can be sure that others will be able to replicate your procedure as well. Care is important in data collection because the data you collect are the basic source of support for your answers to your research question, the support for your hypotheses.

Suggested further reading for this chapter, *APA Manual*, Campbell and Stanley, and Hardyck and Petrinovich.