CONTENTS

CHAPTER

1

What Is Research?

Chapter Outline

Key Topics of the Chapter

defining research; classifying research types; elements of the research process; research ethics

Intended Learning Outcomes

By the end of this chapter, you will be able to:

- define and describe what research is;
- identify the different types of research;
- describe the various elements and the process of research;
- identify the potential ethical issues in research and find out ways to ensure that research is conducted in an ethical manner.

Lead-In Questions

1 Have you ever had any experience of doing research?
2 What is your understanding of research? Do you think it has any characteristics?
3 In your opinion, why do people do research?
4 What kind of difficulties might people encounter in doing a research project?
5 Have you ever been a research participant? If so, how were you treated?

INTRODUCTION

We approach this book with novice researchers in mind. For this reason, in this chapter, we explain what is meant by research and provide some concrete examples for those with little or no research experience. Specifically, we will initially explore the following topics: 1) defining research; 2) explaining its classifications; 3) describing the major steps in conducting a piece of research; and 4) articulating the significance of ethics in doing a research.

DEFINING "RESEARCH"

Research is a truth-seeking process. If you consider yourself as an applied linguist, you will realize that people conduct research for both practical and theoretical reasons. Practically, doing research can help practitioners solve educational problems regarding teaching and learning. For instance, you can collect students' opinions concerning what makes argumentative writing difficult for them, or why teachers experience fatigue in their teaching, or why certain language learners achieve better scores on an English reading test. You can also test the results of a particular teaching intervention so as to provide information for policy makers and clarify policy debates. Theoretically, doing research may advance teaching theories, say, POA (the production-oriented approach) proposed by Wen (2015, 2016). You may investigate how this theory is employed in the Chinese context, and how this theory integrates strengths of the Western instructional approaches with Chinese contextual features. You may also test hypotheses of this theory and examine how feasible and effective this approach is in the Chinese context or even abroad. The truth is that, there is no single reason concerning why people do research, but at its core, it is done because there is always something that we do not fully understand. So, the question is, what is research?

Let's imagine the following situation in your daily life. If your mum asks you to make a cake, you should know what kind of cake she wants. Without a good understanding of the outcome you intend to achieve, you will experience a lot of frustration and even failure. This must be borne in mind when you commit yourself to conducting research. In other words, the first legitimate question you should ask is "What is research and what do I want to find out?". The importance of such a question is well illustrated in the following parable.

A Man Looking for Fruit

There was once a scholar who lived in a country where there are no fruit trees. He therefore spent a great deal of time reading about them. The descriptions of fruit were so enticing that he finally decided to undertake a journey to taste fruit for himself.

After much searching in a market, the scholar located a man who knew the directions to the country where he could find the fruit. The man therefore helped him and drew an elaborate map for him with detailed directions to follow.

With the map in hand, the scholar carefully followed all of the directions. He checked out all of the landmarks he was supposed to observe. Finally, he came to the end of the directions and found himself at the entrance to a large apple orchard. It was springtime and the apple trees were in blossom.

The scholar entered the orchard and proceeded immediately to take one of the blossoms and taste it. He liked neither the texture of the flower nor the taste. He went to another tree and sampled another blossom, and then another blossom, and another. Each blossom, though quite beautiful, was distasteful to him. He left the orchard and returned to his home country, reporting to his fellow villagers that fruit was a much-overrated food.

Being unable to recognize the difference between the spring blossom and the summer fruit, this scholar never realized that he had not experienced what he was looking for.

Source: Halcom's *Evaluation Parables*

It is explicit that the scholar mistook a blossom for the fruit simply because he did not know in the beginning what a fruit was. We therefore hope you can bear this parable in mind as you learn about the nature of research.

The definition provided by an early edition of *Collins Cobuild English Language Dictionary* (1987) might be the most readily comprehensible. It reads "If you do research, you collect data and analyze facts and information and try to gain new knowledge or new understanding". It is apparent that research activities include data collection and data analysis, with the aim of obtaining a better understanding of the issues under investigation. A more technical definition offered by Hatch & Farhady (1982: 1) is that "research is a systematic approach to finding answers to questions". Although this definition is shorter, it touches upon the nature of research. It implicitly tells us three essential elements of research: 1) questions; 2) systematic approaches; and 3) answers (see Figure 1.1).

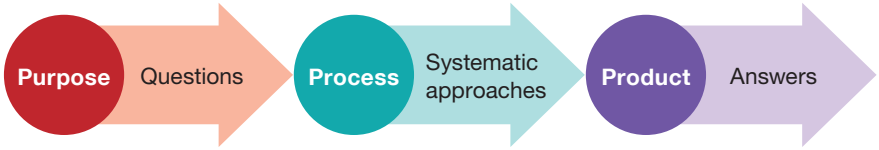

Figure 1.1 Essential Elements of Research

The above three elements are interrelated. The starting point of any research is to formulate questions. Without questions, there will be no research. However, does a good question guarantee that a systematic approach will follow? Definitely not. The selection and construction of an approach need a set of skills that are different from those required in developing good questions. Without a solid approach, the methods chosen are likely to be inappropriate, and valid answers will never be found. Even with good research questions and flawless procedures, valid answers may not be naturally found as we expected, since the interpretation of the findings could be illogical or untenable or even biased. Therefore, each of

the three elements in the definition deserves our equal attention. If there is a flaw in one of the elements, the whole piece of research will be invalid or ruined. Hence, it is worth discussing each of the three elements in turn.

Designing good questions

Good questions ensure that the research goes in the right direction, delimits the research boundary and keeps you focused on what you intend to do. During the initial formation of a question, common interrogatives like "who", "what", "when", "where", "which", "how" and "why" are often used. These interrogatives also serve to clarify the characteristics and objectives of the research. However, using these interrogatives does not guarantee good questions, since good questions are not only clearly defined and specific. They also need to contain the following features: significance, originality, feasibility and ethicalness.

Significance. A significant question must be of practical and/or of theoretical value. Consider, for example, this question: Do proficient writers make fewer grammatical mistakes in L2 compositions than less proficient writers?

Quite obviously, proficient writers should make fewer grammatical errors than less proficient ones. Otherwise, they cannot be described as being proficient. Therefore, the question is trivial since the answer is self-evident and the findings to this question can neither help improve teaching and learning nor contribute to theory-building. However, a revised version of this question like "How do proficient writers differ from non-proficient writers in grammatical competence?" can be of practical and theoretical value, and the answer will be of importance and worthy of our investigation.

From the practical point of view, findings of the revised question might help teachers understand specific differences between proficient and less proficient writers and thus they will be able to help enhance the grammatical accuracy of both proficient and less proficient writers. For theory-builders, the findings might also be insightful in providing evidence to construct a model for L2 interlanguage development in support of or against an existing model or theory on the issue.

Originality. A question is considered original when it is different in one or more aspects from questions that have been investigated before. The differences might manifest themselves in learning contexts, in types of learners, or in the methods used in data collection and analysis. In other words, an original question does not need to be brand new, but needs to fill some gaps in knowledge within the chosen subject. In reality, originality of research is just a matter of degree.

Feasibility. The research question should have specific boundaries and be manageable. There are many interesting research questions to be asked, but not all of them can be tackled by the researcher within the time and resources available. Considerations need to be made regarding the costs of the project, time frame, skills of the researcher, the accessibility of research participants and the availability of information needed. These requirements may appear to be unnecessary or easy to meet. In reality, however, novice researchers often fail

to meet these requirements because they tend to be overly ambitious and lack sufficient experience to anticipate potential difficulties.

Ethicalness. A good research question should also consider the ethical dimensions of the research throughout the whole process. That is to say, being ethical is confined not only to the question formation, but also to the data collection procedures, participant selection, etc. An ethical question will not provoke any uncomfortable feelings in the research participants. Remember that only when the ethical obligations are fulfilled, can the research project be professionally and institutionally accepted. Consider the following question: To what extent can the poor English learners be trained to use writing strategies?

This question seems to be clearly defined, but if you think deeply about it, you will realize that the use of the term "poor learners" may cause some psychological harm or loss of self-esteem of the research participants. However, when the above question is revised into a question like "To what extent can learners of different attainment levels be trained to use writing strategies?", the participants will not feel humiliated.

Employing systematic approaches

When we talk about adopting systematic approaches, we mean that research should follow a set of scientific procedures that can be fully justified. In some cases, the research procedures are predetermined in the sense that they are decided before the data collection while in other cases they are developed during the research process. However, in either case, the procedures used for selecting subjects, data collection and data analysis should be recorded and reported to other researchers. Besides, the rationale of the procedure should be explained and justified in terms of principles in the discipline. Being transparent and justifiable, the procedures thus can be easily replicated by other researchers.

One thing deserving our attention is that no approach or method used is perfect, particularly when the research involves human beings. Thus, using systematic approaches should not be understood as an infallible approach. Different research purposes demand different approaches, so fitness for purpose might be an optimal rule in planning and conducting research. Actually, it is common (and also honest) for researchers to admit that there are limitations in their research design.

Obtaining valid answers

The answer to a question, the last element in the definition but not the least important, must be of high validity. Validity is an essential concept which is difficult to understand. At this initial stage, we will explain it in a very simple way. When an answer is said to be valid, it means that the claimed answer is the only optimal answer we can obtain. If there is an alternative answer, the validity of the study will be called into question (see Chapter 7 for details of validity and reliability of research).

Example 1

A study aimed to investigate whether there is a relationship between L2 learners' vocabulary size and the amount they read under the assumption that the more L2 learners read, the larger vocabulary size they have. Results of the study suggested that the amount learners read did affect the size of vocabulary as expected. However, when the finding was reported, an experienced researcher found that the vocabulary test was not scientifically designed. In this case, it is not sure that the found relation was caused by the amount learners read or was due to the poorly designed test or to some unknown external factors. Therefore, this study is most likely to be invalid owing to the two alternative explanations.

Example 2

This study intended to find out if there is any gender difference in L2 attainment. Results of the study indicated that female English majors outperformed male English majors in an English proficiency test. The study therefore concluded that females have greater aptitude than males in L2 learning. Obviously, the research conclusion is not surely valid since several alternative explanations can be suggested by this finding. For instance, females might spend more time learning English; males might take tests less seriously than females; the most talented males most likely go to the science stream rather than taking language majors. Since all these explanations might all be plausible, the validity of the conclusion is thus called into question.

CLASSIFICATIONS OF RESEARCH

As a novice researcher, you may encounter various kinds of terms designating research. Sometimes, it can be confusing how each type of research differs from another type. In this section, we try to classify research types according to two major features: 1) aims of research, and 2) sources of data (see Table 1.1).

Table 1.1 Classifications of Research

Classifying features	Types of research	Description
Aims of research	• Theoretical • Practical	Developing a theory or testing a hypothesis Describing the major features of a problem and providing solutions to a problem
Sources of data	• Primary • Secondary	From first-hand, original materials From existing documents, books, journals, etc.

Theoretical research and practical research

Theoretical research

Theoretical research in applied linguistics intends to develop or test theories rather than resolving practical issues. It can therefore be further classified into two types: 1) research for theory construction, and 2) research for theory testing.

One example of research for theory construction is the work undertaken by Krashen (1985), who developed the Monitor Theory. His theory consists of five hypotheses: 1) the acquisition-learning hypothesis; 2) the natural order hypothesis; 3) the monitor hypothesis; 4) the input hypothesis; and 5) the affective filter hypothesis. He developed this theory by studying, analyzing and synthesizing the relevant literature coupled with his own empirical studies. Another example is the research pursued by Wen (2015, 2016), who has developed POA over 10 years to overcome the weaknesses in current English instruction in tertiary education in China. The POA consists of three components: 1) teaching principles; 2) teaching hypotheses; and 3) teacher-guided teaching process. The teaching principles of POA include "learning-centeredness", "learning-using integration" and "whole-person education". The teaching hypotheses are "output-driven", "input-enabling", and "selective-learning". The teaching processes contain three phases, each mediated by the teacher: motivating, enabling and assessing. The three principles set guidelines for the other two components; the three hypotheses serve as a theoretical basis for the teaching process; the three-phase teaching process reflects and illustrates the principles while testing the hypotheses.

Constructing a theory is far beyond the level of education of BA and MA students. Thus, most research at BA or MA level is to test existing theories or to improve them to some extent. The following two research examples both intended to test some existing hypotheses.

Example 1

In Zhang, L.'s (2017) study, she tested the overall effect of the POA in college teaching and its effects on listening, speaking, reading, writing and translation of students at different levels of learning. Based on an experimental design, the study collected data through pre- and post-English proficiency tests together with learning journals from students. It was found that: 1) there was no significant difference between the experimental group (EG) and the control group (CG) in terms of the overall English proficiency; 2) compared with CG, the EG showed significant higher scores on listening and writing; 3) students of higher English proficiency in the EG improved significantly compared with the other students, while those with higher English proficiency in the CG did not show any better performance than their counterparts. Furthermore, no significant change was shown in translation and reading skills between the two groups.

Example 2

Yang (2018) intended to test the extension hypothesis proposed by Wang (2012, 2015, 2016, 2017) which claims that extended writing after reading can facilitate English learning. Yang thus examined the effect of reading two narratives on two extension writing tasks by higher intermediate foreign language learners. These two writing tasks were required to be aligned with the style of each narrative respectively. Four students were interviewed after the initial analysis of the writing data. Data from the writing tasks and the interviews revealed that: 1) students imitated the rhetoric of the reading materials, thus aligning to the target language style; 2) the use of extended writing tasks could enable them to produce creative rhetoric that is higher than their current writing level.

The findings in both studies support the assumptions of the theories. More importantly, they contribute to the existing theories by providing empirical evidence and implications for L2 teaching and learning although they are not direct solutions to any practical problems. Below are some academic journals where you may easily find theoretical research although they are not solely devoted to the publication of theoretical research.

International journals

- *Language Learning*
- *Applied Linguistics*
- *Studies in Second Language Acquisition*

Domestic journals

- *Modern Foreign Languages* (《现代外语》)
- *Foreign Language Teaching and Research* (《外语教学与研究》)
- *Chinese Journal of Applied Linguistics* (《中国应用语言学》)

Practical research

Practical research, on the other hand, attempts to solve concrete problems in classroom teaching/learning or in some other situations. Findings from such research usually can be directly tried out by practitioners such as L2 teachers, L2 textbook compilers or L2 test designers. Let's look at the following two examples.

Example 1

Wen & Zhang (2017) did an interview study trying to reveal challenges and dilemmas faced by teachers of the less-commonly-taught foreign languages. The study also intended to provide practical solutions to their problems. The data from 10 university teachers showed that conflicts arose when the teachers were expected to teach with scarce authentic instructional materials and a heavy teaching workload, while having high demands to contribute to academic publications and to carry out administrative responsibilities. Based on the research findings, Wen & Zhang therefore suggested that: 1) diversified criteria should be established to evaluate teachers of less-commonly-taught foreign languages; 2) a professional learning community should be developed to promote interdepartmental and interdisciplinary cooperation.

Example 2

Gu & Wang (2017) examined perceptions of Chinese English teachers concerning the teaching of large classes. The questionnaire data from 456 English teachers from five provincial regions of China showed that up to 93% of the teachers held a negative attitude toward teaching English to a large-size class because they were struggling with management-related difficulties and the psychological burden associated with these difficulties, as well as pedagogical requirements. To solve these problems, Gu & Wang proposed the following solutions: 1) Educational administrators should consider measures to change the teachers' attitudes toward large-size classes; 2) the teachers should reflect on, explore and share with each other effective ways to cope with large classes; 3) professional training should be provided to help teachers better cope with large classes.

The above two exemplary studies are primarily concerned with realistic issues and both intend to provide practical solutions to their problems. Results of the two studies may have a direct impact on the actual teaching and learning although there is no such existing theoretical basis to test.

In the above discussion, we have elaborated on the differences between theoretical and empirical research in terms of research purposes. Before we move on to discuss a new issue, we must emphasize that compared with theoretical linguistics, applied linguistics often contains little or no pure theoretical research. This is because the fundamental task of applied linguistics is to solve language-related problems in daily life. However, the differences between these two kinds of research do exist but they are just a matter of degree rather than an either-or case. Theoretical research in applied linguistics tends to be theory-oriented while practical research tends to be practice-driven. This does not mean that theoretical research has no practical concerns at all while practical research shows no interest in theoretical issues. The major difference here, in our opinion, is in their focus.

Primary research and secondary research

Primary research

Primary research is also known as empirical studies. Data gleaned from this type of research are derived from the primary source, that is, they are first-hand and original and have not appeared in any documents before. Primary research can be theory-oriented or practice-driven. The following studies are examples of this type, and you will see how first-hand data were collected.

Example 1

A study conducted by Meng, Chen & Zheng (2018) tried to provide a general picture of Chinese university EFL teachers' academic writing and publishing behaviors. It also aimed to unravel the factors accounting for their academic publication. Using a self-designed questionnaire, the researchers collected data from 1043 university teachers from about 60 institutions that cover 15 provinces, municipalities and autonomous regions. The general results indicated that: 1) academic writing and publishing are mainly driven by professional title promotion and research requirements; 2) collaborative work remains rare, and co-authors do not equally and substantially contribute to their work; 3) the individual backgrounds of teachers and institutional contexts are the main factors accounting for research quality.

Example 2

Yang (2016) intended to examine the impact on novice middle school teachers brought out by collective lesson planning activities. Using multiple primary sources from in-depth interviews, participant observation, survey questionnaires, reflective journals and emails, Yang found that collective lesson planning activities had exerted positive influences on the four novice teachers regarding their teaching beliefs and practices; however, the influences varied due to different school contexts and learning experiences.

Secondary research

Secondary research is often called documentary research or library research. It reanalyzes the existing sources collected by other researchers or organizations from the published documents, books and journals. Usually, there are two types of secondary research.

The first type is called literature review studies in which the researcher synthesizes the literature on a given topic over a certain period of time. This type of research is usually conducted and written by reputable scholars in the field and is perhaps of the highest academic value because the analysis and synthesis are indeed comprehensive and insightful, and usually cover a wide time range. Their research often explores patterns in past development and points out likely trends in the years ahead. Readers can easily find this type of research through reading the "State-of-the-Art Review Article" published in international journals. Now let's look at two examples.

Example 1

Setter & Jenkins (2005) conducted a literature review study on the topic of pronunciation published as a state-of-the-art review article in a reputable international journal called *Language Teaching*. The article is mainly composed of: 1) the scope of pronunciation teaching and the role of pronunciation in our personal and social lives; 2) a survey of the background to pronunciation teaching from its origins in the early 20th century to the present; 3) an exploration into recent research, an inquiry into a range of aspects such as the role of intelligibility, accent attitudes, and identity and motivation. It concludes with a number of controversies that have arisen from recent pronunciation research and discusses various socio-political issues that affect pronunciation teaching when the L2 is learned as an international rather than a foreign language.

Example 2

Richards (2009) systematically reviewed the developments in qualitative research in language teaching since 2000. Materials were taken from papers published in 15 leading journals in the field of language teaching. The body of the review covers: 1) a discussion of current trends and debates in the general area of qualitative research; 2) an overview of developments since 2000 based on the analysis of papers published in 15 journals, drawn from a range of sources and examples; 3) a review of issues of quality in these papers which draws attention to future work.

The second type of secondary research is called meta-analysis. This is a statistical procedure that integrates the results from existing qualitative and quantitative studies so as to develop a general conclusion which may explain heterogeneity between the results of individual studies. The conclusion is usually statistically stronger than the analysis of any single study (Bryman, 2015). For students, using a meta-analytical approach might not be that easy because it requires advanced statistical techniques. The following is an example of meta-analysis.

Example 3

Wang, W. (2016) analyzed the effectiveness of L2 teachers' oral corrective feedback focusing on the impact of the explicitness, delivery mode and linguistic focus of feedback on its effectiveness. Using a manual search, 25 research articles published from 1991 to 2014 were selected as the research materials. The mathematical analysis revealed that: 1) explicit feedback had an effect size larger than that of implicit feedback; 2) output-prompting feedback had an effect size larger than that of input-providing feedback; 3) morphosyntactic feedback had an effect size larger than that of phonological feedback.

Whichever type of secondary research we are discussing here, researchers of both types review the recent work in a defined area and then summarize, analyze, evaluate or synthesize information that has already been published. Although the reviewed materials are not new, they do generate, however, insightful views, new syntheses, new ideas and theories. In other words, secondary research does offer numerous benefits for students, as is summarized below.

1) It presents the prospect of having access to high quality of literature.
2) It allows more time for doing one's own research design.
3) It offers new interpretations of the subject matter investigated.
4) It provides opportunities for longitudinal analysis.

Source: Cohen et al. (2011)

Points to Think About

Primary or Secondary?

Recently, due to the advancement of computer technology, quite a few linguistic corpora have been developed both at home and abroad. These corpora provide researchers with recorded authentic speech or written text. It is very convenient for novice researchers to work with an existing set of data since it is extremely difficult for any individual researcher to carry out large-scale data collection given that time and funding are limited. Do we call this kind of research primary or secondary?

* Key: This is a piece of primary research because these are raw data in the sense that they have not been analyzed although the researcher has not involved in the data collection.

THE RESEARCH PROCESS

In this section we focus on the main elements of the research. Figure 1.2 depicts five steps in conducting research, all of which are common to almost all varieties of research. Each of these tasks has their own role to play in the research process and none of them should be overlooked.

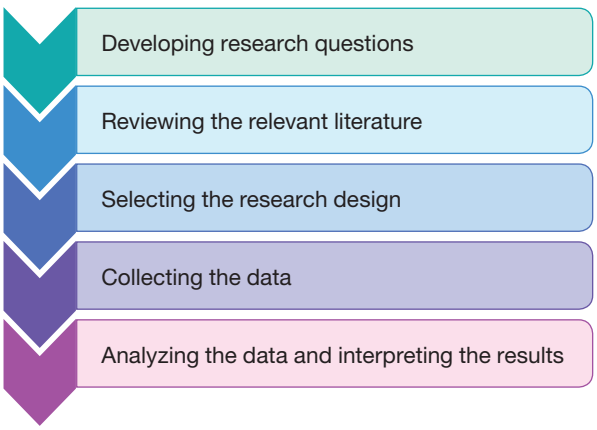

Figure 1.2 Main Research Process

Developing research questions

Research questions are extremely important because they "force" you to consider the most fundamental issue in research, i.e. what do you really want to find out? Generally, developing research questions is a matter of narrowing down the topic, limiting the subject matter, and focusing more precisely on what you want to investigate and find out. If you don't specify research questions, your research is likely to fail at the initial stage. In general, research questions can ensure that you do not go off in the wrong direction during your research. Specifically, research questions should:

1) provide a general guidance for your literature research;
2) help decide the kind of research design to employ;
3) provide guidance as to what data to collect and from whom;
4) provide readers with a clear sense of what your research is about.

Source: Bryman (2015)

Reviewing the relevant literature

Novice researchers can encounter many difficulties and feel panic when dealing with literature. On the one hand, they may be unsure about what a literature review is; on the other hand, knowing how to go about reviewing the literature is perhaps a more difficult task. It should be emphasized that the literature review is an important foundation for your research

because it helps you frame and strengthen your research questions, as well as honing your analytical and researching skills. When you have decided upon a research topic that interests you, you will need to decide on the following issues.

1) What are the theories and concepts relevant to this topic?
2) How has the topic been studied before?
3) What are the differences of opinions (if any) about this topic?
4) What aspect has not been studied about this topic?

These questions in fact show you what a literature review is, and how you may review the literature when dealing with a topic. However, as will become clearer for you from reading Chapter 4, a literature review is not just a series of summarized answers to these questions, nor is it a list of quotations from previous writers. It involves critical analysis and synthesis of previous studies. The skills required here develop over time and with practice. As a novice researcher, you don't yet need to be highly critical, but you are supposed to assess the significance of previous work and explain how it can fit into your own study.

Selecting the research design

A good research design provides the right framework to collect and analyze your data. Sometimes it can be confusing that research designs and research methods are taken for the same thing since research methods are associated with different kinds of research designs. For example, a case study can be a kind of research design but is very often referred to as a method (we shall discuss case study in Chapter 8). The most commonly agreed types of research design are classified into qualitative and quantitative ones (see Chapter 5 for details). However, there are other variations of research design, for instance, experimental design (including quasi-experimental design), cross-sectional design (often called survey design), longitudinal design, case study design, etc. The choice of a research design, then, depends on the research question, the availability of data source, and the researchers' knowledge, researching skills and preferences.

Collecting the data

The collection of data entails different methods. Some of the methods explored in this book, such as questionnaires, interviews, case studies and observations, will be more familiar to readers. Some of them, as in questionnaires, structured interviews and systematic observations, may entail a rather structured approach, while others are less structured, or are unstructured, such as semi-structured interviews and participant observations. For less-structured data-collection methods, they all demand a comparatively open-ended view of the research process. They also require the researcher to keep an open mind about what he/she needs to find out. Another more prominent issue arising in the collection of data at any stages is to ensure the high quality of the data. The assessment of research quality relates to every step of the research, but the quality of research is primarily and initially determined by data collection. Therefore, you need justifiable rationales for the method used, articulate how you

have designed your instruments and describe in detail how your study is executed. All these issues will be discussed in the later chapters of the book.

Analyzing the data and interpreting the results

As the data you collected is "raw", the next step is to analyze and process the data into a more refined form. Obviously, analyzing the data is no easy job at all. The fundamental issue about data analysis is that it is a process of data reduction, that is, it is concerned with the process of reducing the large volume of data so that the researcher can make sense of it (Bryman, 2015). The quantitative data can be either descriptive or inferential. Applied linguists more often than not use software such as SPSS (Statistical Product and Service Solutions) and relevant tests to test their hypotheses, check correlations, measure frequencies, compare means, generate charts, and so on. The qualitative data, however, can be analyzed by various methods such as thematic analysis or content analysis. Analysts need to code the textual data manually to search for recurrences from the coded text, and eventually identify the themes. They can also employ a computer software assisting qualitative data analysis, such as NVivo.

Note that every stage of research is logically interrelated with the whole and that the sequential order cannot be changed in many cases. A simple example is that data collection cannot be undertaken before the development of research questions. However, the sequence is not always rigidly fixed. In some cases, there may be options. For example, it is suggested that research questions will help you guide your literature search as well as your literature review. Yet, it is also quite possible that reading the literature may prompt you to revise your research questions and may also suggest new ones. Another apparent example is the selection of a research design. To a large extent, this is determined by the research questions to be tackled. However, the choice can also depend on methods used by previous studies. Therefore, at the stage of constructing your research design, you also need to rely on the previous literature.

As a novice researcher, you are suggested to follow the sequence first. Once the cycle is on track, you are encouraged to be flexible and move back and forth with the process. Bear in mind and be alert to the fact that "real research is inevitably going to be a rather messy process" (Blaxter et al., 1996: 7). In other words, the five stages are recursive in nature, and the process of research is often a lot less smooth than it appears. It is not uncommon to experience false starts, blind alleys, mistakes and challenges. However, when you present the final product of your research, you will discover its true value and real beauty, as research contributes to human development and can help enlighten society through revealing certain truths.

RESEARCH ETHICS

When you read books on research methods, you may discover that research ethics are given serious consideration. This is because the ethics of research are important and researchers should be sensitive to them. Therefore, we would like to draw your attention to the importance

of ethical matters in doing research. We have written this section with three purposes in our mind: first, to raise readers' awareness of the inevitable existence of ethical issues; second, to provide an overview of key ethical considerations confronted by researchers during research planning; third, to suggest ways to help readers minimize these ethical concerns in practice.

What are research ethics?

Ethical issues arise at every stage of the research sequence. Generally speaking, research ethics concern the researcher's obligations and rights of the participants (Bulmer, 2011). The following are two types of questions that research ethics revolve around:

1) How should the researcher treat the participants?
2) Are there any activities that the researcher should or should not engage with the research participants?

Source: Bryman (2015)

In doing applied linguistic research, for example, you should consider questions such as whether your behaviors may cause psychological harm to your participants, or whether your interview questions invade the privacy of your participants, or whether video-recordings will make your participants feel uncomfortable. Below are some unethical behaviors of a novice researcher.

Example 1

In reporting a sensitive interview study, Researcher A used students' real names without asking for their permission. This made some of the students feel annoyed because their privacy was compromised.

Example 2

Researcher B asked his students to complete questionnaires without asking if students were willing to do so. In addition, there were several instances where technical terms were used in the questionnaires, which caused unnecessary difficulties for the students answering the questionnaire items.

Example 3

Researcher C conducted a piece of action research aiming to improve her teaching of a reading course. Before the action research, she needed to find out students' difficulties in reading. Thus, she spent a large amount of time investigating the students' difficulties in class instead of teaching. This behavior deprived students of their learning opportunities and meant that the teacher's responsibility was not adequately fulfilled.

There are some inappropriatenesses in the three researchers' behaviors. Researcher A did not protect participants' privacy by using their real names. Researcher B did not ask if the participants were willing to help complete the questionnaires. Researcher C used too much time doing the research itself and ignored her primary role as a teacher, which was to focus on teaching. These problems seem to be trivial, but they are commonly ignored by researchers due to inadequate knowledge or carelessness. Therefore, in the following, we are going to introduce some principles that every researcher should abide by.

Ethical principles

Informed consent

Informed consent is considered as the foundation of ethical research behavior because it gives the participants the right to exercise control over their own lives and make their own decisions (Howe & Moses, 1999). This decision, according to Diener & Crandall (1978), involves four elements: competence, voluntarism, full information and comprehension.

For instance, in Lin's (2015) study, she assured her participants that they could choose freely whether or not to take part in the research and that they could withdraw at any time. This is known as voluntarism. Information about the research, such as the general research aims and data collection procedures, was introduced in the workshops before the commencement of the research to ensure that participants had a full understanding of the research project. This procedure is understood as providing full information and comprehension. In addition to this, Lin also asked her participants if the video clips could be used during the stimulated recall. When participants are given all this relevant information, they can make decisions on whether or not to participate in the research. This is known as competence.

In order to seek consent, two statements are normally developed. One is the consent form signed by the participants and the other is an information letter, which introduces the research project as well as providing contact information of the researcher. The following examples from Lin (2015) present a singed consent form and information letter, where pseudonyms are used in order to protect privacy.

A sample of signed consent form

Introduction

The Department of Education, Communication and Language Sciences at XXXX University supports me in this research project. The following information helps you decide whether or not to participate in the study. You should be aware that even if you agree to join in, you are free to quit at any time. It will not affect your scores.

Research objectives

The objective of this study is to improve students' learning and invigorate language teaching methods in the Chinese context. It also intends to suggest pedagogical implications based on the empirical results. Guidelines for helping Chinese L2 learners to develop appropriate learning strategies are suggested as well.

Procedures

All participants are required to complete questionnaires and motivation tests. They are invited to submit their learning diaries and will be interviewed in the course of the research. Video-recording will be used during the regular teaching for research purpose.

Risks

There will be no physical, psychological or legal risks during the research procedures.

Benefits

Participants will have a better understanding of language learning and how different teaching approaches may promote their learning effectiveness. Findings of the present study will also assist language teachers in their professional development.

Confidentiality

Names of all the participants will not be associated in any way with the information collected or with the research findings from the study. Pseudonyms or student numbers will be used instead of real names although participants' personal information is required. The research will not share information about participants unless required by law or permission.

Cancelling consent and authorization

You may withdraw your participation at any time. You also have the right to cancel the permission to use and disclose information collected about you. If you cancel the permission to use your personal information, the research will stop collecting additional information about you. However, the research may use and disclose information that was gathered before your cancellation.

I have read this form carefully and understood its terms.

I agree to take part in this research as a research participant.

Participant's Signature: XXXX

Date: Sept. 20th, 2010

Researcher Contact Information: xxxx@xxxx.ac.uk

A sample information letter

Dear students,

My name is XXXX. I am currently a PhD student under the supervision of Professor XXXX at XXXX University, UK. I am conducting a research study to investigate the learning and teaching of Chinese EFL learners by adopting collaborative inquiry through a range of interventions.

I am requesting your participation, which involves completing questionnaires, writing learning journals and taking motivation tests. You may also be interviewed. However, your participation is voluntary, and you can withdraw from the study at any time. There will be no penalty and it won't affect your grade. The results of the research may be published. If you have any questions, please feel free to email me at: xxxx@xxxx.ac.uk.

Sincerely,

XXXX

Sept. 18th, 2010

Harm

Harm includes physical harm, psychological harm, loss of self-esteem, cause of stress or affecting the physical development of the participants (Diener & Crandall, 1978), especially if the research topic is sensitive. This means that the researcher should consider several facets of the research. For instance, the researcher should consider whether the research process will disturb the participants' normal life or learning, whether the interview questions are intrusive, whether the researcher's tone of voice and behavior may have an impact on the participants, whether the participants are reluctant to complete the research, and so on and so forth.

Privacy

In applied linguistics research, the research participants are mainly L2 learners, and there is a need to protect the participants' privacy so that their anonymity can be secured. For this reason, participants' identities cannot be revealed. Generally speaking, there are two ways to protect the participants' privacy: One is through ensuring complete anonymity, and the other is through the promise of confidentiality.

For instance, when administering questionnaires to students, it is of vital importance that students' names should not be revealed. This is why pseudonyms or numbers are used as identifiers by researchers in reporting the research findings. In face-to-face interviews, as the researcher is not able to ensure anonymity, he/she should therefore promise confidentiality. This promise also relates to how the data will be stored and disseminated. It is crucial that the researcher makes all this clear to the participants before data collection begins. The researcher can also write clearly on the consent form that the data will be stored in a secure place. The more sensitive the data, the more obliged the researcher will be to guarantee confidentiality (Cohen et al., 2011).

Deception

The issue of deception has been the source of many arguments in social research. Researchers such as Creswell (2011) claim that participants should not be prevented from knowing about every aspect of the research. In reality, researchers may want to limit participants' understanding of details about the research so that participants respond more naturally during the study and important things can be therefore discovered (Bryman, 2015). In this case, supporters believe that it is worth such concealment as long as no harm is caused to the participants (Cohen et al., 2011). On the other hand, an objection to deception is also understandable. Firstly, deception by its very nature is not a good thing and should not be encouraged. Secondly, it is hard for people to imagine a professional researcher deceiving people. If a researcher is revealed to have engaged in deception, the public perception of the researcher may be affected in a negative way. Thirdly, if participants realize that they are kept from knowing some aspects of the research, this can create tension between the participants and the researcher, which may lead to non-cooperation and refusal to participate (ibid.).

We share Bulmer's (2011) views that it is not possible to be completely open to all participants about every minor detail of the research. We also need to emphasize that deception does not mean cheating, but concerns the extent to which information can be revealed to the participants before the research. We suggest that the researcher describe the overall ideas of the research and keep back

little details as long as they do nobody harm. Once the research is completed, the researcher should organize a debriefing session, not only to provide feedback, but to explain the real purpose of the research and share the research findings with the participants. Kelman (1967) emphasizes that researchers should ask themselves whether incomplete information about the research is necessary and justified. In addition, it is necessary that the researcher try to minimize the negative effects brought about by withholding information.

In doing qualitative research, it can be important for the researcher to contact the research participants again when data analysis is completed. The purpose of doing so is two-fold: firstly, to ensure the accuracy of the data, i.e. to check if the interpretation is consistent with the meaning expressed by the research participants; secondly, to reassure if the research participants are willing to have their data released for open publication. These actions are all ethical behaviors to ensure fair and respectful treatment of the research participants.

Before concluding this chapter, we will present some of the ethical regulations that researchers are expected to follow, in the hope that these will be useful for your own research.

Before the research

- Participants should be fully informed of the researcher's identity and background.
- Participants should be provided with adequate information about what the research is about, its purposes, how the data will be collected and stored, and the anticipated outcomes of the research.
- Participants should be informed of what they are expected to do during the research, and if there are any potential risks involved.
- Informed consent must be sought from all participants before the research begins.
- Participants should be informed of how the research will benefit them and how they will contribute to the research project.
- Participants have the right to decide whether or not to participate in the study, i.e. their participation should be voluntary and they have the right to withdraw from the research at any time.

During the research

- Participants' privacy should be protected and the researcher must always keep information confidential, and maintain anonymity where possible.
- No harm, hurt or suffering should be caused to participants as a result of their participation or absence.
- When ethical dilemmas arise, the researcher should find ways to minimize the danger of harm to participants and consult other researchers for advice.
- Respect the participants and don't abuse your power over them.

After the research

- Sincere thanks should be given to the participants when the research is completed. Sometimes, a token fee can be paid to participants for what they have done if there is enough funding.

Source: Bulmer (2011), Cohen et al. (2011), Oppenheim (1992) and Reynolds (1979)

CHAPTER SUMMARY

Research is defined as a systematic approach to finding answers to questions. Generally, a research question should be significant, original, feasible and ethical. Research can be classified in terms of aims (theoretical or practical) or in terms of sources (primary or secondary). A theoretical-practical divide is defined only in a relative sense; they do not form discrete categories but a continuum. Secondary research exists on the basis of primary research, while primary research starts with reviewing secondary research. The sequential order of doing research includes: developing research questions, reviewing the relevant literature, selecting the research design, collecting the data, analyzing the data and interpreting the results. This process can be metaphorically depicted as a flow chart. Although the sequential order is normally followed at the beginning of one's research, it is not always rigidly fixed. Last but not least, a professional researcher will always strive for the highest ethical standards in preparing and conducting research, including ensuring confidentiality and anonymity for the participants, avoiding deception, accepting responsibility for one's work, as well as maintaining a professional relationship with the participants, etc.

? DISCUSSION QUESTIONS

DEFINING "RESEARCH"

- What is research?
- To what extent do questions, systematic approaches and answers intertwine?

CLASSIFICATIONS OF RESEARCH

- How can research be classified?
- In what sense does theoretical research differ from practical research?
- In what sense does secondary research differ from primary research?
- In what ways can primary research be supported by secondary research?
- If you are asked to carry out some secondary research, what are you expected to do?

THE RESEARCH PROCESS

- Outline the main stages that research needs to go through.

RESEARCH ETHICS

- What are research ethics and why do you think research ethics are important?
- Can you list any ethical responsibility that the researcher should take on when designing and carrying out a research project?
- How would you define "deception" in the research context?