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Introduction to Applied Linguistics Research

Third Year Classes

Lecture 1

Research Does Not Mean Searching for Articles to Write Papers. Probably the most common misconception about research is confusing it with papers we were asked to write back in secondary school or during our undergraduate days at university—projects often referred to as *research papers*. Typically, such assignments mean that students go to the library and (re)search for a number of articles from a variety of sources. Then they integrate the gathered information from these articles through summarizing and paraphrasing into papers addressing issues of importance with correct footnoting and referencing , Fred&Perry (2005) .

What is research?

Research is a systematic process of inquiry consisting of three elements or components: (1) a question , problem , or hypothesis , (2) data , (3) analysis and interpretation of data . Any activity which lacks one of these elements (for example , data) is something other than research .Nunan (1992:3)

The *American Heritage College Dictionary* defined *research* as "scholarly or scientific investigation or inquiry" or as a verb "to study (something) thoroughly" (2000). Thus, in its most basic and simplest form, research is a way of finding out answers to questions.Mackey&Gass (2005:1)

Research is systematic, because it follows certain steps that are logical in order. These steps are:

- Understanding the nature of problem to be studied and identifying the related area of knowledge.
- Reviewing literature to understand how others have approached or dealt with the problem.
- Collecting data in an organized and controlled manner so as to arrive at valid decisions.
- Analyzing data appropriate to the problem.
- Drawing conclusions and making generalizations.

Research is carried out in order to:

-get a result with scientific methods objectively , not subjectively .
-solve problems , verify the application of theories , and lead on to new insights .
-enlighten both researcher and any interested readers .
-prove/disprove new or existing ideas , to characterize phenomena (i.e., the language characteristics of a particular population) and to achieve personal and community aims . That is , to satisfy the individual's quest but also to improve community welfare .
-to discover the cause of a problem , to find the solution to a problem , carry out what is planned , to uncover what is not known , etc. Nunan (ibid:2)

Research in Applied Linguistics is concerned with practical issues involving language in the life of the community. The most important of these is the learning of second or foreign languages. Others include language policy, multilingualism, language education, the preservation and revival of endangered languages, and the assessment and treatment of language difficulties. Other areas of interest include professional communication, for example, between doctors and their patients, between

lawyers and their clients and in courtrooms, as well as other areas of institutional and cross-cultural communication ranging from the boardroom to the routines on an answer-phone. (http://www.linguistics.unimelb.edu.au/about/about.html)
In other words, research in the field of applied linguistics covers a vast domain of topics that deals with just about anything where language relates to society.

Who Is All This Research For?
It is for you, the person who, for whatever reason, wants or needs to gain a better understanding about language issues that are important to him or her. This includes the following:
- Master of Arts students in applied linguistics
-Teachers of second/foreign languages
- Administrators of second/foreign language programs
-Parents of students in language programs

Johnson(1992) puts it:
The importance of research is not so much that it supplies definitive answers to questions such as "What is the best way to learn a language?" or "Which is the most effective method of L2 teaching?" It does not. Rather, research can help us gain a richer understanding of the many interrelated factors involved in learning. It can help us see how the ways we organize learning environments can promote or inhibit growth. (p. 5)
So , Research contributes to more effective teaching and learning, not by offering definitive answers to pedagogical questions, but rather by providing new insights into the teaching and learning process. To provide a more comprehensive view of research we examine research from the perspective of what Richards (2003) terms ***a paradigm*** *or "a set of basic beliefs" regarding research;* ***a tradition*** *or an "approach to research covering generally recognized* territory and employing a generally accepted set of research methods;" and ***a method*** *or "a means of gathering, analyzing and interpreting data using* generally recognized procedures" (p. 12).

Research Dichotomies:
Basic Versus Applied Research
One of the most central distinctions made in discussing research is the difference between ***basic*** *and* ***applied*** *research.*
Basic Research:
The purpose of *basic research* is to design studies that can test, refine, modify, or develop theories. As an example of basic research, Marcia's (1966) research on adolescent identity led to a refinement of one stage of Erik Erikson's psychosocial theory of development. Marcia's goal was not to create a program to address practical ways to help adolescents but, rather, to extend and support the theory. Research that seeks to verify such things as the order that learners acquire grammatical rules or the importance of input in language learning are examples of basic research in the field of SLA. Basic Research may be **explanatory , exploratory or descriptive**

Applied Reasearch: examines the effectiveness and usefulness of particular educational practices. Here the goal is to determine the applicability of educational theory and principles by testing hypotheses within specific settings. So , the goal of applied research is to demonstrate the usefulness of theories in practice
A great deal of research in the field of Teaching English to Speakers of Other Languages **TESOL** is, of course, applied research. Second language educators, for example, have investigated why some

students are reluctant to contribute to class discussions, what is the most effective type of feedback on student essays, and what is the most productive number of vocabulary items to introduce at one time.

The most basic distinction between the two paradigms of research is that basic research is research that has no immediate application, whereas applied research is research that does. However, such distinctions are somewhat ambiguous as almost all basic research eventually results in some worthwhile application in the long range.

Applied research is one type of research that is used to answer a specific question that has direct applications to the world. This is the type of research that solves a problem.

Basic research is driven purely by curiosity and a desire to expand our knowledge. This type of research tends not to be directly applicable to the real world in a direct way, but enhances our understanding of the world around us. So the real difference between the two types of research is what they will be used for. Will the research be used to help us understand a real world problem and solve it, or will the research further our general information?

http://study.com/academy/lesson/basic-research-and-applied-research-definitions-anddifferences.html

Secondary & Primary Research

There are two major sources of data that both basic and applied researchers can gather while conducting research

Secondary Research (Literature Reviews) :

In using secondary data, researchers examine what others have discovered about a particular topic. For example, if teachers want to know about the advantages and disadvantages of using peer review in a writing class, they can investigate what others have written on the topic. As McDonough and McDonough (1997) point out, when secondary data is used, "the outcome of the research is the establishment, publicizing, or utilization of something that somebody—not the researcher or the person commissioning it—already knows" (p. 37).

One example of a study using secondary data is Silva (1993). In this study Silva summarized the findings of 72 empirical research studies that compared L1 and L2 writers with regard to their composing processes and the features of their written texts. He then discussed what these findings suggest in general for designing an effective L2 writing program. Studies such as these are termed *literature reviews.*

Primary Research : In using *primary data, researchers gather original data to answer a particular* research question. As McDonough and McDonough (1997) note, when researchers gather first-hand data, "the outcome is knowledge nobody had before" (p. 37).

e.g.,we gather data directly from students who are learning a language rather than from secondary resources (books about students who are learning a language)

Inductive Vs Deductive Reosoning in Educational Research

Inductive reasoning : is often referred to as a "bottom-up" approach to knowing in which the researcher uses particular observations to build an abstraction or to describe a picture of the phenomenon that is being studied. Inductive reasoning usually leads to inductive methods of data collection where the researcher (1) systematically observes the phenomena under investigation, (2) searches for patterns or themes in the observations, and (3) develops a generalization from the analysis

of those themes. So the researcher proceeds from specific observations to general statements— a type of discovery approach to knowing.

Deductive reasoning: uses a top-down approach to knowing. Educational researchers use one aspect of deductive reasoning by first making a general statement and then seeking specific evidence that would support or disconfirm that statement. This type of research employs what is known as the **hypothetic-deductive method, which begins by forming a hypothesis: a tentative explanation** that can be tested by collecting data. For example, one might hypothesize that small classes would result in a greater amount of student learning than large classes. This hypothesis would be based on a **theory or a knowledge base composed** of the results of previous research studies.

The humanistic theory of education emphasizes strong teacher-student relationships as part of effective learning. Previous research studies have shown that such relationships are more common in small classes. Therefore, based on the humanistic theory and these previous studies, a researcher hypothesized that small class sizes will result in better student learning based on humanistic theory and previous studies. He collected data, and made a decision based on the data to either accept or reject the hypothesis or prediction.

The inductive and hypothetic-deductive approaches to knowing represent two general routes to knowledge used in educational research. Inductive reasoning is most closely associated with **Qualitative approaches to research** and deductive reasoning is related to **Quantitative approaches to research**

Quantitative Vs Qualitative Approaches (traditions)

Qualitative research is a research in which the focus is on naturally occurring phenomena ,i.e, It collects and summarizes data using primarily narrative or verbal methods: observations, interviews, and diaries , and data are recorded in non-numerical form.

e.g., a diary study in which a student keeps track of her attitudes during a year-long Japanese language course (the analysis is interpretive rather than statistical) .

Quantitative approaches :summarize data using numbers. Hypotheses and methods of data collection in quantitative research are created *before the research begins.* Hypotheses or theories are then tested, and when supported, these hypotheses or theories are typically considered to be **generalizable: applicable to a wide range** of similar situations and populations. i.e,

Quantitative research generally starts with an experimental design in which a hypothesis is followed by the quantification of data and some sort of numerical analysis is carried out (e.g., a study comparing student test results before and after an instructional treatment).

As a novice researcher, it is important that you consider which approach best captures your own assumptions about how the world works. **Mixed-methods approach to research :**

In some studies researchers use both qualitative and quantitative methods to answer their research questions. For example , Pragmatic researchers propose that even within the same study, quantitative and qualitative methods can be combined in creative ways to more fully answer research questions.

Longitudinal Vs Cross-sectional research

The main differences between **Longitudinal** and **Cross-sectional** studies concern the role of **time** in what is being investigated .

Longitudinal studies involve collecting data from the same individuals or groups at different points in time , with the researcher collecting data regularly over many weeks , months , or even years to examine how a particular individual or group changes over time . A typical **longitudinal** study might seek to compare one group of learners' performance of knowledge of a particular linguistic structure at times A , B , and C .

Cross-sectional studies on the other hand , data are typically collected at a single point in time , with the researcher looking for relationships or patterns in the data . For example , a cross-sectional study might examine learners' knowledge of a linguistic structure by looking at data collected at one point in time from beginning , intermediate and advanced learners .

Lecture 2

Terms commonly associated with quantitative and qualitative approaches to research and focuses of each approach (Nunan,1992:4)

	Quantitative Research	**Qualitative Research**
1.Scientific method	Deductive or "Top down" The researcher tests hypotheses and theory with data	Inductive or "Bottom up" The researcher generates new hypotheses and grounded theory from data collected during field work
2.View of human behavior	Behavior is regular and predictable	Behavior is fluid , dynamic , situational , contextual , social and personal
3. Most common research objectives	Description , explanation and prediction Ungrounded , verification-oriented , confirmatory , reductionist , inferential , and hypothetical-deductive	Description , exploration and discovery Grounded , discovery-oriented , exploratory , expansionist , descriptive and inductive
4.Nature of observation	Attempts to study the behavior under controlled conditions and measurements	Naturalistic and uncontrolled observation , study the behavior the context where it occurs
5. Nature of reality	Objective (different observers agree on what is observed) Removed from the data : "the outsider perspective"	Subjective , personal and socially constructed Close to the data : "the insider perspective"

6.Form of data collected	Quantitative data collection is based on precise measurement using structured and validated data	Qualitative data collection is through in-depth interviews , participant

	collection instruments (e.g., tests , closed-ended items , rating scales ,)	observation, field notes , and open-ended questions . The researcher is the primary data collection instrument
7.Nature of data	Variables	Words , images , categories
8.Data analysis	Identify statistical relationships	Search for patterns , themes and holistic features
9.Results	Outcome-oriented Generalisable findings: multiple case studies Reliable and replicable data	Process-oriented Particularistic findings Ungeneralisable : single case studies Valid , real , rich and deep data
10.Form of final reports	Statistical report (e.g., with correlations , comparison of means and reporting of statistical significance of findings	Narrative report with contextual description and direct quotations from research participants

Types of research :

T here are many types of applied linguistics research studies and there are also a number of ways in which they may be classified. Studies may be classified according to topic whereby the particular phenomena being investigated are used to group the studies. Some examples of applied linguistics research topics are: teaching methods, language learning , classroom interaction and management , cross-cultural studies etc. Studies may also be classified according to whether they are exploratory or confirmatory.

An exploratory study is undertaken in situations where there is a lack of theoretical understanding about t he phenomena being investigated so that key variables, their relationships, and their (potential) causal linkages, are the subject of conjecture. In contrast a confirmatory study is employed when the researcher has generated a theoretical model (based on theory, previous research findings, or detailed observation) that needs to be tested through the gathering and analysis of field data.

A more widely applied way of classifying educational research studies is to define the various types of research according to the kinds of information that they provide. Accordingly, educational research studies may be classified as follows:

Historical research :

Historical research has been defined as the systematic and objective location, evaluation and synthesis of evidence in order to establish facts and draw conclusions about past events (Borg (1963). It is an act of reconstruction undertaken in a spirit of critical inquiry designed to achieve a faithful representation of a previous age. In other words, Historical research generates descriptions, and sometimes attempted explanations, of conditions, situations, and events that have occurred in the past. For example, a study that documents the evolution of teacher training programs since the turn of the century, with the aim of explaining the historical origins of the content and processes of current programs.

Descriptive research:

Many educational research methods are descriptive; that is, they set out to describe and to interpret *what is*. Descriptive research, according to Best, is concerned with:

conditions or relationships that exist; practices that prevail; beliefs, points of views, or attitudes that are held; processes that are going on; effects that are being felt; or trends that are developing. At times, descriptive research is concerned with how ,*what is* or *what exists* is related to some preceding event that has influenced or affected a present condition or event. (Best, 1970)

Such studies look at individuals, groups, institutions, methods and materials in order to describe, compare, contrast, classify, analyse and interpret the entities and the events that constitute their various fields of inquiry.For example , a descriptive research of request speech act realization patterns of Algerian and English students to compare and analyse what are the linguistic similarities and differences between the two groups .

Correlational research :

Correlational techniques are generally intended to answer three questions about two variables or two sets of data. First, 'Is there a relationship between the two variables (or sets of data)?' If the answer to this question is 'yes', then two other questions follow: 'What is the direction of the relationship?' and 'What is the magnitude (degree)?'. Therefore , correlational research involves the search for relationships between variables through the use of various measures of statistical association , and describes in quantitative terms the degree to which the variables are related. For example , a research that investigates the relationship between motivation and academic achievements.

Causal-Comparative or EX-POST FACTO research:

This type of research suggests causal linkages between variables by observing existing phenomena and then searching back through available data in order to try to identify plausible causal relationships. In other words , both the effect and the alleged cause have already occurred and are studied by the researcher in retrospect. Kerlinger (1973) defines Ex-post Facto research as :

"Systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable".

For example, a study of factors related to student 'drop out' from secondary school using data obtained from school records over the past decade.

Some authors categorize Ex-post facto studies into the category of descriptive research. **Experimental research** is used in settings where variables defining one or more 'causes' can be manipulated in a systematic fashion in order to discern 'effects' on other variables. For example, an investigation of the effectiveness of two new textbooks using random assignment of teachers and students to three groups – two groups for each of the new textbooks, and one group as a 'control' group to use the existing textbook.Therefore, the primary characteristic of experimental research is manipulation of at least one variables and control over the other relevant variables so as to measure its effect on one or more dependent variables .The variable (s) which is manipulated is also called an independent variable(s), a treatment, an experimental variable(s) or the cause.

Case study research

Generally refers to two distinct research approaches. The first consists of an in-depth study of a particular student, classroom, or school with the aim of producing a nuanced description of the pervading cultural setting that affects education, and an account of the interactions that take place between students and other relevant persons. For example, an in-depth exploration of the patterns of friendship between students in a single class. The second approach to Case Study Research involves the application of quantitative research methods to non-probability samples – which provide results that are not necessarily designed to be generalizable to wider populations. For example, a survey of the reading achievements of the students in one rural region of a particular country.

Ethnographic or naturalistic research

Usually consists of a description of events that occur within the life of a group – with particular reference to the interaction of individuals in the context of the sociocultural norms, rituals, and beliefs shared by the group. The researcher generally participates in some part of the normal life of the group and uses what he or she learns from this participation to understand the interactions between group members. For example, a detailed account of the daily tasks and interactions encountered by a school principal using observations gathered by a researcher who is placed in the position of 'Principal's Assistant' in order to become fully involved in the daily life of the school.

Lecture 3

Sources of Research Questions

Research is the process whereby questions are raised and answers are sought by carefully gathering, analyzing, and interpreting data. In some cases, answers are hypothesized, predictions made, and data collected to support or discredit hypothesized answers.

The Research Question is the beginning of the research process and the focus of both the consumer and researcher. Any given **research question** asks, explicitly or implicitly, either ***what*** *or* ***why****. The* following are examples of how these two questions typically manifest themselves:

"What" *questions:*

What phenomena are of importance?

In what context do these phenomena occur?

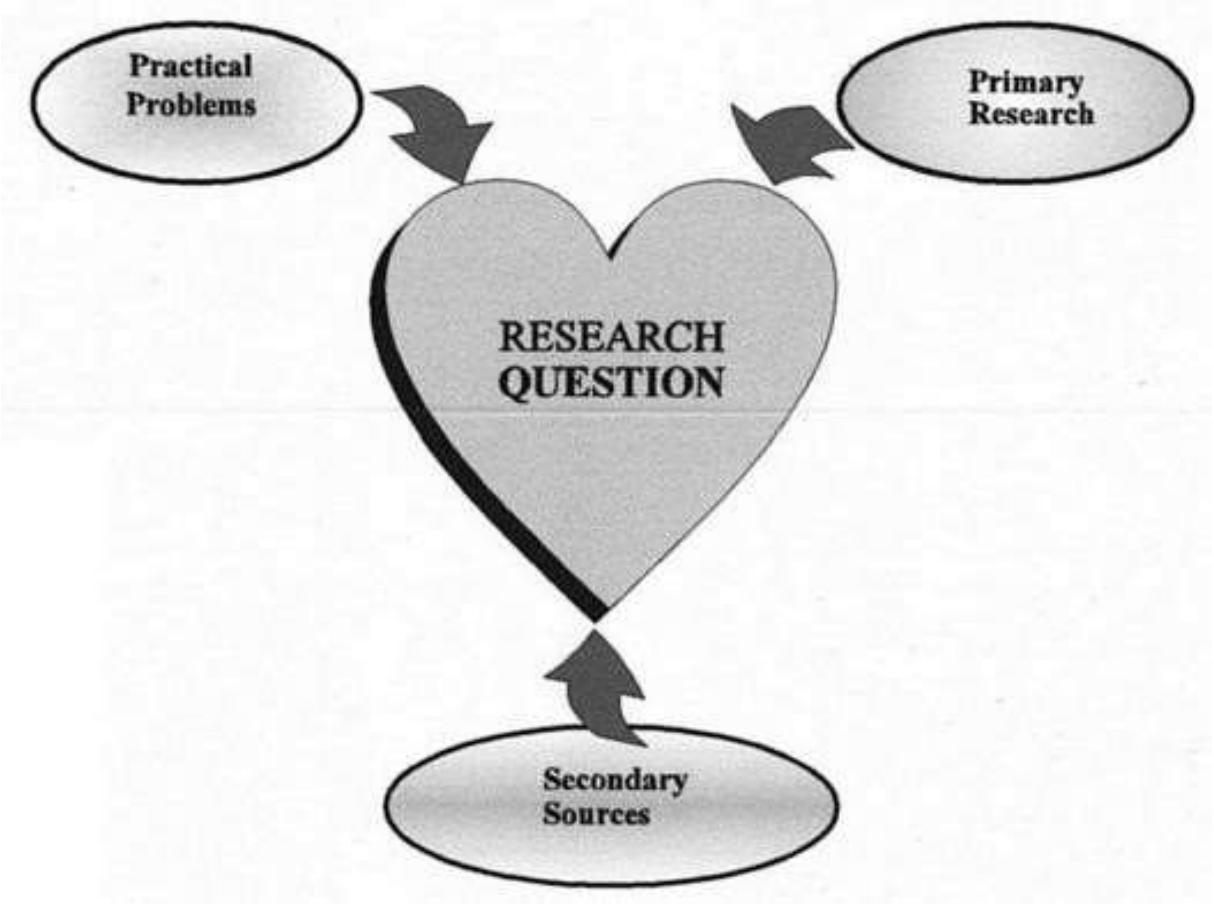
What important relationships exist between phenomena?

"Why" *questions (Causation):*

Why do these phenomena occur?

Why do people differ on certain traits?

FIG. 1.1. Sources for research questions Fred L. Perry, Jr.(2005:9)



Identifying Important Questions

The motivating force behind research is the inherent curiosity of human beings to solve problems. We see phenomena around us, and we begin to ask questions: What is something made of? How did it get here? How does one phenomenon relate to another? Does one phenomenon cause another one to exist, decrease, or increase?

1.One of the most common sources is from observing ***practical problems*** *(Fig. 1) in the* language classroom. Every day, teachers , students and administrators are confronted with issues that require informed answers.

For example, Ferris (1995) noted that teachers believe that feedback on student compositions is important based on the fact that they spend a lot of time providing feedback to help their students. This led her to question whether such feedback actually helps students improve their writing. Was this an important question? I would think so because teachers who spend long time when correcting homework need to know whether all the time they are taking to give written feedback really makes an impact.

2.The second place where important research questions are often identified is ***secondary sources***. Textbooks and theoretical papers presented at conferences are examples. These sources are referred to as *secondary because they summarize other people's* research rather than provide firsthand reports by the original researchers. Authors of such literature typically raise questions that need to be addressed . For this reason, they are fruitful places for finding current research questions being asked by the applied linguistics community.

For example Carrier's (1999) article is not a firsthand research but it is an argument for the need to research the roles that status (social position) between native speakers (NS) and non-native speakers (NNS) plays in listening comprehension. Carrier concluded by raising several questions for future research: What differences are there between reactions of NS and NNS listeners due to status? Are

these differences due to culture? There are many articles like Carrier's that end with a list of questions for further research.

3.The third resource for identifying important questions is the ***primary research***. *In fact this is one of the* most rewarding locations for discovering current questions being asked by the applied linguistics community. The better versed we are in the research literature, the more aware we become of the missing pieces in our framework of knowledge.

Many issues in primary research might lead us to raise important questions from previous research. For instance , sampling , the type of material used in a treatment, the method for administering a treatment, and the way in which the data were analyzed are often places where gaps might be found. Future research is needed to help complete the bigger picture before our own questions can be answered.

4. the next best place to look for research questions is in the Discussion/Conclusion section of a study, usually identified by the terms ***limitations and recommendations for further research***. For example , *Major, Fitzmaurice, Bunta, and Balasubramanian* (2002), for example, noted in their Discussion section two limitations in their study on the effects of non-native accents used in assessments for measuring listening proficiency. One limitation was in the design of their study, in which they made the assumption that the lectures they used were equal in difficulty. The second limitation was the possibility that the accents they used in the study were not representative of accents used by the majority of university instructors.

Research questions immediately arise from these limitations. Based on the **first limitation**, this question emerges: **Would similar findings occur if the difficulty of the assessments for the lectures were not equally difficult**? From **the second limitation**, we might ask: **What set of accents best represents the non-native accents of instructors in English universities?** Based on these, the next step would be to find whether there were any answers to these questions **Scope of Research**

Aside from personal interest , research questions need to be able to generate new information or confirm old information in new ways . To do this , a review of the literature on the research topic must be done .

Eg: Imagine you are interested in second language proficiency but instead of looking at students' use of grammatical structures , you want to investigate how well they can perform basic **speech acts .** Obviously this is not a topic that one would select without some acquaintance with **speech act theory** . You also would not select the topic if you thought that it had already been sufficiently addressed . The first thing to do is undertake a review of previous speech act research to learn exactly what has been done in this area with second language learners .

Library or net searches begin by looking at **key words** and **key authors .** Key words and key authors for speech acts might include terms such as **directive , assertive , commissive** or such authors as **Austin , Searl , Gumperz** . Think for a moment how broad a key word like **speech act** might be in such search .However , it is not as broad as **linguistics** (the number of articles and books generated by a search with this key word would be very large and very broad .

A search using **bilingual** as a key word would generate a huge number of items . But the question is how to narrow the scope of the search and at the same time find all the relevant entries .

Hopefully , this question illuminates one of the first problems regarding the definition of research questions – the questions are stated too broadly . To say we want to know more about how well second language learners carry out speech acts is a little like saying we want to know how well learners use language .

Precisely:

Which speech act do we want to investigate ?

What type of second language learners –beginners , intermediate advanced – are we talking about ?

Are the learners adult Krean immigrants in Los Angeles or Japanese high school students in Kyoto ?

In what kinds of situations speech events should be investigated ?

Is the research meant to support test development ?materials development ? Theory development ?
We were narrowing the scope via key words . Now we can narrow further via key sentences .
Using these questions as a guide , we can redefine the research question by narrowing the scope . For example , the scope could be narrowed from :

Investigate how well second language learners perform speech acts .

To

Investigate Korean ESL students' ability to recognize complaint behavior appropriate in an academic university setting .

Here **performance** has been narrowed from total performance to recognition (one portion of the total performance skill) **Second Language Learners** has been narrowed to **Korean ESL students** .
And **speech acts** has been narrowed to one speech act subcategory **complaints .**
The events in which the subcategory might occur have been narrowed to those relevant to the **university setting .**
Of course , there are many other ways in which the question might be narrowed .
A review of previous research will help us to define the scope of research in another way . But , even a fairly narrow question may need to be more carefully defined .
For example , many teachers are concerned with student motivation . Motivation like billingualism , is a very broad concept . Previous researchers have dealt with this problem by subcategorizing the concept into types of motivation (eg: **intrinsic motivation , extrinsic motivation , instrumental motivation or integrative motivation ….**)
In narrowing or subcategorising the concept , **Operational Definitions** must be given to show the scope of the subcategory

Lecture 4

Operational Definitions

In narrowing or subcategorizing the concept , operational definitions must be given to show the scope of the subcategory. Brown (1989:8) states :

The **operationalisation** of variables is a researcher's chance to explain how each variable is being defined with resepect to the construct in question . Such an **operational definition** should take a variable out of the realm of theory and plant it directly in concrete reality . Basically , it must be a definition that is based on **observable** , **testable ,** or **quantifiable** characteristics .
There are for example , many abstract concepts that have been **constructed** in the field of second /foreign language research . These constructs are shown in abstract terms such as **acquisition , motivation , need achievement , monitoring , compound bilingualism .**We may share a basic understanding of such theoretical concepts but even these theoretical definitions are difficult to formulate .
For example : How would you define **Bilingual ?**
A commonly-shared definition of **bilingual** is «speaking two languages » . We all know that the term may be applied to people who are at all points of fluency in the two languages even to absolute beginners of a second language) . To use such a term in research would be almost meaningless . A more precise definition is given :
Arabic –English bilinguals who scored a **3+** or **higher** on the **FSI** (Foreign Service Institute) **inventory** participated in this study , or children who had participated in the **Arabic Immersion program in Cleveland schools** in grades **K-3** constitute the bilingual group in this study . When broad terms for constructs are used in research questions , we cannot rely on a theoretical definition even if one is readily available . Terms must be **«operationally » defined.**
Therefore , **an operational definition is : a clear statement of how you judged or identified a term in your research .**This is important for three reasons :

- You will need to be absolutely consistent throughout the research process in your definition.
- It is important for consumers of your research so that they do not misinterpret your findings .

- It is important to the research community that your study be replicable

Different results might be obtained by other researchers if they carry out a similar project and use a different definition of **bilingual .**

Good operational defintions can often be drawn from the existing literature . Sometimes , however , research is difficult to carry out because operational definitions cannot be found that will satisfy the researcher . Sometimes , no operational definitions exist in the literature and the researcher must define terms .

We know very little , for example , about how language is represented in the brain . Yet , many models of language acquisition talk about **acquistion devices , filters , parameters , L1→L2 transfer** as internal mechanisms . It is, of course , possible to create and define an operational definition for these terms for an individual project . In some cases , we develop an operational definition for such concepts but then find ourselves questioning the **reality** of the concepts themselves . The attempt to establish concepts is an important area of research .

Feasibility of Research So far , we have suggested that research questions should

1. Interest us
2. Promise new information or confirm old information in new ways
3. Have reasonable scope
4. Have key terms that are clearly defined and operationalized

Before we turn to stating the questions in a more formal way , we need to consider whether or not the research is **feasible**

Factors Affecting the Feasibility of Research

The feasibility of a study may depend on a number of factors:

1.The breadth of the study in relation to its research questions' scope and answerability.

2.You must know how much time the project will take and whether or not you have that amount of time to spend .When the topic is very broad as that of "language learners' performance of speech acts" it might take a lifetime to investigate the topic (this is why we have talked about ways to narrow the scope of the research to make it more feasible)

One of the major reasons we narrow scope is the amount of time we have available to carry out the research . For Example : If your research is for a course and the course is only 10 or 18 weeks in duration , the scope must be tightly constrained . **Longitudinal studies** , which follow an individual or group over a period of time , can be very time-consuming . This is one of the reasons that many researchers prefer **cross-sectional approach** where data are gathered usually only once rather than a longitudinal study .

3. Accessibilty to the research context (population , data collection)

Eg : Imagine that you want to look at some aspects of language use by bilingual children in primary school classrooms . If you are not already located at a school with a bilingual student enrollment , you may have a great difficulty in gaining access to the classroom (for access to be granted , many schools and teachers require a statement that the research will not disrupt regular instruction .

4. Whether or not it will be possible to obtain the data necessary to answer the question.

Eg :A study that might seek to compare performance on different communication task types. It might not be feasible to require participants to do 15 different tasks. Exhaustion and boredom might set in, and the researcher would not know how to interpret the results. This is not to say that such a study could not be conducted; it is just that the design of the study might entail large numbers of participants

who may or may not be available for the many rounds of data collection that such a study would necessitate .

5. Cost of the research may determine the feasibility of the research . In planning a project prepare a reasonable budget and think of this:

- Do you need tape recorders and tapes?
- Do you need the computer software you need for the study .
- If videotaped data are required for your study , are videocamera and tapes available ?
- Can you operate the videocamera and observe a class at the same time , or must you hire a

camera operator ?

- Will the school and /or the learners expect some remuneration for participating in your study ?
- Will you have to hire someone to help you code your data ?

Do you need paper supplies , travel to and from a school , photocopies of 200 essays or computer entry of text data ?

Therefore , try to make a list of everything you need , then decide wether this research project is feasible or no.

Thus, any study should be designed with a full understanding of the fact that the limitations of the setting , the population , time, funds might constrain the research.

Stating Research Questions & Hypotheses

Now that we have talked about the scope and feasibility of research questions , it is time to consider how these questions can be clearly stated . Research questions can take a range of forms.

Very often the researcher's prior study of the field and review of the literature will have exposed a need to **explore**, **describe**, or **explain** further a particular phenomenon through research questions, *before arriving at possible hypotheses.* Research questions may be :

Exploration will see a research question in which the researcher aims to find out what is happening, to seek new insight, to pose new questions, or to attempt to assess the phenomenon in a new light. In other words, the study structures the research rather than the other way round and the research may thereby become one of hypothesis building rather than hypothesis testing.

Descriptive research questions will attempt to portray an accurate profile of people, events, or situations.

Explanatory questions will seek an explanation of a situation or problem, often in the form of causal relationships. A particular study may be concerned with a combination of all three tendencies, but we should be able to highlight one principal trend through our initial reading of the research questions(s).

One example of a specific and answerable research question might be,

"What is the effect of form-focused instruction on the acquisition of English relative clauses by French- and Algerian-speaking learners of English?"

Hypotheses

A hypothesis is a type of prediction found in many experimental studies; it is a statement about what we expect to happen in a study. The hypothesis should ideally present the following information to the reader: firstly, there should be some statement concerning assumed relationships (or lack of them) between the variables, or the presumed influence of one (or more) of the variables on the other.

Secondly, we can expect to read a hypothesis which really can be tested: that is, it looks to us as though it will become possible to assign operational definitions to the constructs or variables described and thereby produce usefuldata which can then be analysed.

In research reports there are generally two types of hypotheses: **Research hypotheses H1** and **Null hypotheses** often written as **H0** which is a neutral statement used as a basis for testing. The null hypothesis states that there is no relationship between items under investigation.

The statistical task is to reject the null hypothesis and to show that there is a relationship between X and Y.

The research hypothesis H1

"French-speaking learners of English will perform better following form-focused instruction than will Algerian- speaking learners of English."

The null hypothesis H° would be:

There will be no difference between the performance of the French group and the Algerian group on a posttest. We could then statistically test the differences I performance between these groups on a posttest following instruction to determine if any differences found were due to chance or due to treatment.

When, based on previous research reports in the literature, we expect a particular outcome, we can form research hypotheses. There are two ways that we can do this. The first is to predict that there will be a difference between two groups, although we do not have sufficient information to predict the direction of the difference

For example, we might have a research hypothesis that states simply that the two groups will be different, such as:

There will be a difference between the performance of the

French-speaking group and the Algerian-speaking group on a posttest.

This is known as a **nondirectional hypothesis**.

On the other hand, we may have enough information to predict a difference in one direction or another. This is called a **directional hypothesis**. To continue our example, we might believe (based on the closer linguistic relationship between English and French than between English and Algerian) that the French-speaking group will perform better than the Algerian-speaking group. We would then formulate our hypothesis as follows:

The French-speaking group will perform better on a posttest than the Algerian-speaking group. The

directional hypothesis may be **positive or negative** by

informing the reader about the specific trend of the difference or relationship (eg: better , worse , higher , lower) **Replication**

Replication is a central part of the development of any field of inquiry. If one cannot repeat the results of a particular study, the validity of the results of the original study might be called into question. Albert Valdman, the editor of the journal *Studies in Second Language Acquisition, asserted that "***the way to more valid and reliable SLA research is through replication**" (1993, p. 505).

As Porte (2002) further noted, without these critical replication studies, **"it will be extremely difficult ever to discover the definitive response to a research question or hypothesis found in one particular study ... which then permits us to generalize those findings to fit exactly another context of language learning" (p. 35).** It is thus crucial that researchers report in enough detail to allow others to determine with precision what has been done. Moreover, some journals such as the

journal *Language Learning* makes this explicit in their Instructions for Contributors by saying **"Methods sections must be detailed enough to allow the replication of research."**

Generally speaking, there are two primary reasons for replication: Verification and generalizability. However , there is a dearth of replication studies because as acknowledged by Vander Veer, Van Ijzendoorn, and Valsiner (1994): « …. these replication studies do not yield novelty, but rather check the reliability of the original results, they are less valued in a community where (limited) originality is highly valued"

In addition , There are also academic reasons having to do with the difficulty involved in replication. A researcher can easily replicate the instruments, the task, and the setting of a study. But when dealing with linguistic behavior, individual characteristics such as prior linguistic background and knowledge come into play that would clearly be impossible to replicate for a variety of reasons. For example , no group of participants is going to be "identical" to another group.

Lecture 5

Definition : In order to carry out any sort of measurement, we need to think about variables; that is, characteristics that vary from person to person, text to text, or object to object. Simply put, variables are features or qualities that change. For instance , a person's proficiency in English as a foreign language may differ over time as the person learns more and more English .Likewise , we can expect individuals to vary in their respective levels of proficiency in English at any given time . Thus , proficiency in English can be considered a variable because it may change over time or differ among individuals .

Most variables that differ over time also vary among individuals , but the reverse is not necessarily true . Consider , for instance , gender (sex) , (the state of being male or female) ; a variable that is often considered in studies . Certainly there are observable and interesting differences among individuals on this variable . Yet few people would expect to see numerous changes in this variable over time . Most individuals remain male or female throughout their lifetimes.

There are many other variables of interest in language studies that differ both among individuals and over time include : language proficiency , motivation , self-esteem , second language performance . A few that typically vary only among individuals are : gender , nationality , first language background , intelligence , and language ability .(Although there is some controversy about whether the last two can vary over time as well) . **Variables Versus Constructs**

It is very important that we distinguish variables from the underlying constructs that they represent . Both variables and constructs vary over time or among individuals . However , a variable is essentially what we can observe or quantify of the human characteristics or abilities involved , whereas a construct is the actual characteristic or ability that it represents in human beings . Proficiency in English , for example is something that goes on inside an individual's head . As such , it is difficult to observe and may be different from the indirect observations that a researcher makes (perhaps, scores on an English proficiency test) to define this variable.

The construct proficiency in English (the actual human ability) could be represented by the variable test scores in English proficiency (what we can observe and measure of the construct in question . However , it is important to remember that the scores are not the ability but a reflection of the ability .Like any reflection , it may be a not clear or distorted representation of the actual construct in question .

Variable Versus Level

In a research project , we may wish to look at levels within a variable . For example , we might want to know how well ESL foreign students are able to do some task . The variable is ESL students . This variable may be divided into levels for the purposes of the study . If the study was designed to

compare the performance of ESL students who are foreign students with those who are immigrant students , the variable would have two levels . If the study concerned geographic area , a student might be subclassified as South American , European , Middle Eastern , or Asian so that comparisons among these levels of ESL students could be made . The variable would consist of four levels . Or , for the purposes of the study , we might want to divide the variable ESL students into proficiency levels such as advanced , intermediate ,and beginner . The variable would then have three levels . For example , If we take Bilingual as a variable in a research project , we might say that people either are or are not bilingual (yes/no levels) . The matter of proficiency in each language would not be an issue in such a study . The research question , however , might subclassify the bilingual speakers on their proficiency in the second language using school labels such as FEP (fluent English proficiency) , LEP (Limited English proficiency) , and NEP (No English proficiency) , three levels of the variable bilingual . The selection of levels , as with the identification of variables , depends on the research questions .

Variable Types (Functions) Dependent Vs Independent

There are two main variable types: independent and dependent. The independent variable is the one that we believe may "cause" the results; the dependent variable is the one we measure to see the effects the independent variable has on it. The independent variable is manipulated to determine its effect on the dependent variable. For example , if you wanted to study the construct communicative competence of a group of students , then the dependent variable is the construct and it might be operationalised as students' scores or ratings on some measures of communicative competence . The measurement would be part of the operational definition of communicative competence for the study . This variable (communicative competence) is the dependent variable. We expect performance on the dependent variable will be influenced by the independent variable. You might believe that male students and female students differ on this variable . You could , then , assign gender as the independent variable which affects the dependent variable in this study .

Assume you wanted to know how well ESL students managed to give and accept compliments , one small part of communicative competence . Their videotaped performances during role-play were rated on a 10-point scale

(10 being high) for giving compliments and a 10-point scale for receiving compliments . The students' total score could range from 0 to 20 . The rating that measures the dependent variable compliment performance might be influenced by L1 membership as an independent variable .

Moderator Variables

Moderator variable is a type of independent variable that may not be the main focus of the study, but may modify the relationship between the independent variable and the dependent variable. Of course, moderator variables can "sneak" into a study without the researcher realizing that they may be important. For example , in the study of compliments , you might believe that gender is the most important variable to look at in explaining differences in students' performance . However , you might decide that the amount of exposure to the English culture might moderate the effect of gender on compliments and responses to compliments . That is you might believe that women will be more successful than men in offering and receiving compliments in English . However , you might decide that , given more exposure to English culture , men would be as successful as women in the task . In this case , the amount of exposure is an independent variable that functions as a moderator variable . Thus , the essential difference between independent and moderator variables lies in how the researcher views each in the study . For independent variable , the concern is with their direct relationship to the dependent variable , whereas for moderator variables , the concern is with their effect on that relationship . **Intervening Variables**

Intervening variables are similar to moderator variables, but they are not included in an original study either because the researcher has not considered the possibility of their effect or because they cannot be identified in a precise way. For instance, consider a study that measures the effect of pedagogical

treatment (independent variable) on learners' overall language proficiency (dependent variable, as measured by TOEFL scores). A variable that cannot be measured or understood easily might be the individuals' test-taking abilities.

In other words, the results may be due to test-taking abilities rather than to the treatment. Because this variable was not controlled for, it is an intervening variable that could complicate the interpretation of the results. Therefore , intervening variables are hard to grasp because they are abstract , theoretical labels applied to the relationship or a process that links the independent and dependent variables. Intervening variables are the same as moderator variables the only difference is that the intervening variable has not been or cannot be identified in a precise way for inclusion in the research . For example , when we talk about

L1 → L2 transfer or interference , we are talking about an internal mental process that we may or may not be to measure accurately . Intelligence and test-taking talents may not be directly measurable yet play some role in changing research outcomes . **Control Variables**

When conducting research, one ideally wants to study simply the effects of the independent variable on a dependent variable. For example, consider the impact of feedback type on a performance measure. Variables that might interfere with the findings include the possibility that learners with different levels of proficiency respond differently to different types of feedback. Another possibility is that different students, depending on their prior language learning experiences, respond differently to different types of feedback.

Whenever possible, researchers need to identify these possible factors and control for them in some way, although it should be recognized that identifying and controlling for all variables in L2 research may be difficult. One way to determine if gender or possibly native language background (as a way of operationalizing language learning experiences) might have an effect is to balance these variables by having an equal number of men versus women or an equal number of Korean versus Japanese versus Spanish speakers (or whatever languages one is dealing with).

These variables, then, become moderator variables. Another way to control for possibly interfering, or confounding, variables is to eliminate the variable completely (i.e., to keep it constant). In our hypothetical example, our study might include only men or only women, or only Korean or Japanese or Spanish speakers. Gender and native language then become control variables. This latter solution, of course, limits the degree of generalizability of one's study.

The central relationship within the study is between the independent variable chosen by the researcher and the dependent one . The arrows are meant to indicate the direction of focus in the researcher's thinking and design of the study , rather than any causal or temporal relationship .

A study is initially designed to determine the effect of the independent variable on the dependent variable . The intervening variable serves to label the relationship or process that links the independent and dependent variables but is not itself observable .
The researcher may wish to consider a special kind of independent variable , called a moderator variable , to determine what change , if any , it causes in the central relationship between the independent and dependent variables. But to ensure that the picture is clear within the study , the author may think that other variables called control variables must be neutralised , kept constant , or otherwise eliminated from the study .

Lecture 6

Scales of Measurement : Measuring variables

All quantifiable data are observable in some way . The problem is that data may be observed or measured in different ways . For example , the variable proficiency in English as a second language can be measured on a test that will produce a set of different scores for a group of students . Variables like gender or nationality , however , usually are determined by asking the students themselves for the information . Of course , this procedure produces a set of categories with certain numbers of people in each , rather than a set of scores . Do you see the difference between how the data must be organised for the variables language proficiency and nationality ? Language proficiency is observed as a set of test scores and nationality is observed a set of categories .
This distinction is accounted for by the different kinds of scales used in statistical analysis .
Scales : are means for the different ways of observing , organising , and assigning numbers to data which makes them important for understanding the entire data collection process.
The different types of scales can be said to measure with varying degrees of precision . As you will see the four types of scales differ markedly and can be arranged hierarchically from least precise to most precise this is why they are termed levels of measurement ordered as follows :
1)Nominal 2)Ordinal 3) Interval 4) Ratio

Nominal Scales

Nominal scales are used for naming and categorising data in a variable ; usually in the form of identifying groups into which people fall , and classify data according to presence or absence of the attribute (quality / feature) . Membership in groups may occur either naturally as in (gender , nationality) or artificially as in (a study that assigns students to different experimental and control groups) . Examples of variables that group people naturally include : gender , nationality , native language , social and economic status , level of study in a language and a specific like or dislike (e.g., whether the subjects like studying grammar rules) . Artificially occuring variables might include ,for example , membership in a particular class or language program , or being assigned to an experimental or control group .
Examples of Nominal scale variables :

- A study of gender, (1) may be assigned to male and (2) to female.
- The nominal variable native language in a study of English native speakers vs non native speakers might be 1=NS and 2=NNS , but it could also be 1=English , 2=Spanish , 3=Arabic, 4=Italian , 5=French , 6=Mandarin and so forth .
- An attribute can be a yes/no variable in one research project and a level of the variable in another . For example if a study includes student status as a research variable , this could be entered as 1=yes (student) , 2=no . In another study , student status might be entered as 1=elementary school , 2=secondary school , 3=undergraduate , 4=graduate .

The numbers in this scale are codes to represent levels of the nominal variable and have no arithmetic value (adding or multiplying , i.e., calculating)

Ordinal Scales

They are used to order or rank data . For instance , if you were interested in ranking your students from best to worst on the basis of their final examination scores (with1 representing the best , 2 the next best , and 30 being the worst) you would be dealing with an ordinal scale .

If the variable is happy and this is not to be treated as a nominal variable in the study . , we need some way of of measuring dehree of happiness . There is no reliable method of measuring precisely how much happiness one possesses at any moment .

We can say that a person is very unhappy , unhappy , happy , very happy .These can be assigned numbers from 1 to 4 . In this case the numbers do have arithmetic value . Some one with a 4 is happier than someone with a 1 . The 4 , however , does not say how much happiness to attribute to a person . Persons rated 4 are ordered higher than those with a 3 , and those with a 3 higher than those with a 2 , and so forth .

Ordinal measurement , then , describes a rank order measurement . The rank order can be of two sorts , first , one could take all the students Ss and rank order them in relation to each other so that with 100 Ss the rank order would be from 1 to 100 . Another possibility is to rank order Ss on a scale and then all Ss who rate 5 are higher than the group rated 4 , and so forth . In the first , each individual is ranked and in the second , groups are rank ordered .

In applied linguistics we do sometimes , want to know students' attitudes towards particular lessons or sets of materials . In our happiness variable , we only gave four points to the scale . Most researchers who use scales prefer to use a 5-point , 7-point or 9-point scale . The wider range encourages respondents to show greater discrimination in their judgments.

To do this you would set up a set of statements such as :

The lessons were boring 1 2 3 4 5 6 7

The lessons were unenjoyable 1 2 3 4 5 6 7

And ask students to mark the strength of their agreement with each statement (7 being strongly agree , and 1 being strongly disagree) . It's true that the scales in ordinal measurement have arithmetic value , but the value is not precise . Rather , ordinal measurement orders responses in relation to each other to show strength or rank . That is a person ranked 4 is not precisely twice as happy as one ranked 2 . Nor is the increase in number or amount from 1 to 2 necessarily equal to that from 2 to 3 or from 3 to 4 . The points on the scales and the numbers used to represent those points , are not equal intervals .

- If the word at either end of the scale very strongly describes your ideas and impressions about the concept , you would place your checkmarks shown below:(example)
- Boring …X… : ……. : …….. :…… : ……. : ……. : ……. Interesting
- Boring …… : ……. : …….. :….. : ……. : ……. : …X…. Interesting
- If the word at either end of the scale describes somewhat your ideas and impressions about the concept (but not strongly so) , you would place your checkmark as follows :
- Boring…… : …X…. : …….. :…… : ……. : ……. : ……. Interesting
- Boring…… : ……. : …….. :…… : ……. : …X…. : ……. Interesting
- If the word at the end of the scale only slightly describes your ideas and impressions about the concept , you would place your checkmark as follows :
- Boring…… : ……. : …X….. :……: ……. : ……. : ……. Interesting
- Boring …… : ……. : …….. :…… : …X…. : ……. : …….Interesting
- Boring …1… : …2…. : …3….. :…4… : …5…. : …6…. :…7….Interesting
- (The rating scale ,1 is (low) , (7) is high , and (4) is the average)
- Mark ONE "X" on each line:
- Boring …… : ……. : …….. :……. : ……. : ……. : ……. Interesting • Unenjoyable..... : ……. : ……. :…… : ……. : …….. : ……. enjoyable.
- Meaningless ……. : ……. : ……. :…… : ……. : ……. : ……. Meaningful

- Dull ….. : …… : ……. :……. : ……. : ……. : ……. Exciting
- Unsatisfying ……. : ……. : …… :……. : ……. : …….. : ……. Satisfying
- Unappealing ……. : ……. : ……. :…… : ……. : ……. : …….. appealing
- monotonous ……. : ……. : …….. :……. : …….. : …….. : …….. Absorbing

Interval Scales

Like ordinal scale measurement , interval scale data tell us how much of the variable to attribute to a person, text or object . The difference is that the measurement is much more precise . The intervals of measurement can be described . They reflect the interval , or distance , between points in the ranking . When you look at the final examination scores in one of the courses , you are dealing with an interval . For instance , if Jim scored 90 out of 100 , Jack scored 80 , and Jill scored 78 , you could rank these three students : first , second , and third ; that would be an ordinal scale . But the scores themselves give you more information than that . They also tell you the interval or distance between the performances on the examination : Jim scored 10 points higher than Jack but Jack only scored 2 points higher than Jill . Thus , an interval scale provides more precision and information than does an ordinal scale .

An interval scale gives you the ordering and the distances between points on that ranking . Examples of interval scales include most of the variables measured with tests like language proficiency , language placement , language aptitude , and so on . But some interval scales are measured in different ways , such as age , number of years of schooling and years of language study .

It is important to note that an interval scale assumes that the intervals between points are equal . Hence , on a 100-point test , the distance between the scores 12 and 14 (2points) is assumed to be equal to the distance between 98 and 100 (also 2 points) . **Ratio Scales**

The discussion of ratio scales will be short because such scales are not generally applied in the social and behavioral sciences , because a ratio scale has a zero value and it can be said that points on the scale are the most precise .

Ratio scales have a true zero point where zero represents the absence of the category.

For example , you can have zero electricity in your house . Can you , however , say that a person knows zero (no) Spanish ? I think not . Even a person who has never studied Spanish or Chinese will bring certain lexical phonological and syntactic information from the native language to bear on the task .

Information provided by different scales

Scale	Category/name	Order /Rank	Interval/Distance	Zero/Not Used
Nominal	**X**			
Ordinal	**X**	**X**		
Interval	**X**	**X**	**X**	
Ratio	**X**	**X**	**X**	**X**

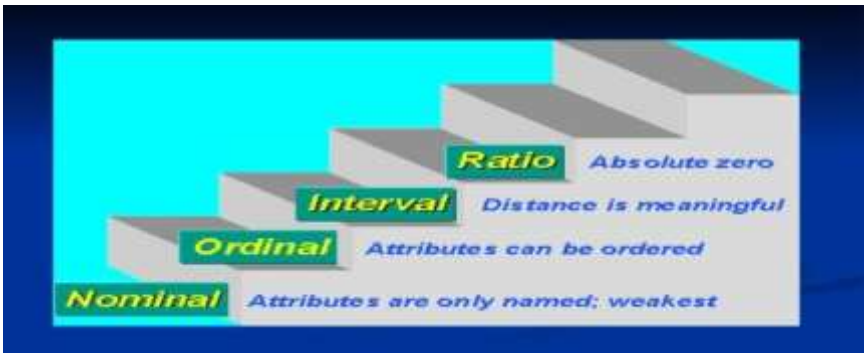
As the table displays , the four types of scales are related and build one on the other as shown in the previous table . Nominal scales name and categorize only . Ordinal scales are concerned with categories as well but they provide the ordering , or ranking , of those categories . Similarly , interval scales tell about the ordering within categories , but they provide additional information about the distances between points in that ordering .And finally , ratio scales give the intervals between points in the ordering of certain categories but with considerably more information . Remember that ratio scales are seldom applicable to

laguage studies . It is also important to recognize that scales can change forms in the hands of a researcher . If an investigator wishes to convert a set of observations from one scale to another it is possible . How ?
For example , let's consider a set of scores on an interval scale for a German achievement test . These scores could easily be changed into an ordinal scale by going through the scores and ranking the students first , second , third and so on . Likewise , either the interval scale scores or the ordinal scale ranks could be changed into a nominal scale by grouping the scores into « high achievers » (the top 50% of the students) and « Low achievers » (the bottom 50%) . The result would be a nominal scale with all students falling into one of the two groups .

Frequency Data vs Score Data:

Another way to think about difference in measurement is to consider whether the study measures how much on an interval or ordinal scale or it measures how often something occurs , the frequency of nominal measurement . For Novice researchers , it is easy to identify a nominal , ordinal or interval measurement , but somehow the distinction becomes blurred in moving to frequency counts .

By now it should be clear that the way you measure variables will depend in part on the nature of the variables itself and its role in the research , and in part on the options available for precision of measurement . Therefore , it is very important in the operational definition of the variable that the researcher plan precisely how the variable is to be measured . The measurement should be appropriate for the research question . For example , if we want to classify bilingualism according to the languages spoken , then a nominal scale is appropriate .



Summary of Research Types