CHAPTER ONE

Approaches and Methods in Applied Linguistics Research

Aek Phakiti and Brian Paltridge

This chapter introduces approaches and methods in applied linguistics research. First, it discusses how applied linguistics has been defined and presents key research areas in the field. Next, it discusses dimensions such as primary versus secondary, cross-sectional versus longitudinal, and quantitative versus qualitative research. It then outlines the notion of research paradigms which underlie choices in research approaches and methods. The concepts of validity, trustworthiness, reliability and research ethics are also introduced.

Defining applied linguistics

Applied linguistics (AL) is an interdisciplinary field of study that aims to understand the multifaceted roles and nature of language use and/or language problems in social contexts (see e.g. Berns & Matsuda 2006; Cook 2003; Davies & Elder 2004; Hall, Smith & Wicaksono 2011; McCarthy 2001; Pawlak & Aronin 2014; Pennycook 2001; Schmitt 2002 for detailed discussions). AL researchers are interested, for example, in understanding how language is used or learnt as well as what problems or difficulties people face when using language to communicate in a variety of situations and contexts. To achieve this, applied linguistics researchers draw on a range of theories and research methodologies not only from linguistics, but also from other disciplines such as education, psychology and sociology.

Copyright 2015. Bloomsbury Academic.
All rights reserved. May not be reproduced in any form without permission from the publisher, except fair uses permitted under U.S. or applicable copyright law.

EBSCO Publishing : eBook Collection (EBSCOhost) - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ)
AN: 3315834 ; Brian Paltridge, Aek Phakiti.; Research Methods in Applied Linguistics : A Practical Resource
Account: s1097571.main.ehost

AL researchers would agree that it is not straightforward to precisely define applied linguistics. This is because language, human characteristics (e.g. behaviours, thoughts, beliefs) and social contexts (e.g. cultures, religions) are highly complex. Cambridge English Language Teaching (ELT) (n.d) has asked leading scholars in the fields of applied linguistics to define applied linguistics. Here are excerpts from what some of these scholars have written that reflect the diversity of opinion regarding how applied linguistics is conceived:

> For me, applied linguistics means taking language and language theories as the basis from which to elucidate how communication is actually carried out in real life, to identify problematic or challenging issues involving language in many different contexts, and to analyse them in order to draw out practical insights and implications that are useful for the people in those contexts. (Anne Burns, p. 1)
>
> Applied linguistics (AL) is one of several academic disciplines focusing on how language is acquired and used in the modern world. It is a somewhat eclectic field that accommodates diverse theoretical approaches, and its interdisciplinary scope includes linguistic, psychological and educational topics. Although the field's original focus was the study of foreign/second languages, this has been extended to cover first language issues, and nowadays many scholars would consider sociolinguistics and pragmatics to be part of the AL rubric. (Zoltán Dörnyei, p. 3)
>
> Applied linguistics (AL) provides the theoretical and descriptive foundations for the investigation and solution of language-related problems, especially those of language education (first-language, second-language and foreign language teaching and learning), but also problems of translation and interpretation, lexicography, forensic linguistics and (perhaps) clinical linguistics. The main distinguishing characteristic of AL is its concern with professional activities whose aim is to solve 'real-world' language-based problems, which means that research touches on a particularly wide range of issues – psychological, pedagogical, social, political and economic as well as linguistic. As a consequence, AL research tends to be interdisciplinary. (Richard Hudson, p. 4)

Under the applied linguistics umbrella, there are many sub-fields, including first and second language acquisition (FLA/SLA), language teaching, language testing and assessment, world Englishes and critical applied linguistics, to name a few (see Davies & Elder 2004 for a wide range of topics that are discussed under the general heading of applied linguistics). Each of these sub-fields asks a variety of research questions and utilizes particular research methodologies to answer these questions.

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

Topics in applied linguistics

Given the nature of applied linguistics research and the wide range of contexts in which it is carried out, the range of topics examined by applied linguists is vast. Below, ordered alphabetically, is a list of academic journals that have the term *applied linguistics* in their title and which illustrate the diversity of topics that are examined in the area of applied linguistics.

Annual Review of Applied Linguistics (http://journals.cambridge.org/action/displayJournal?jid=APL)

This journal provides reviews of research in key areas of applied linguistics. Most articles are state-of-the-art reviews and allow readers to understand current issues and research approaches that have used to examine them. In every fourth or fifth issue, this journal publishes a survey of research in a specific area. Previous issues have focused on topics such as language learning and pedagogy, discourse analysis, teaching innovations, SLA, computer-assisted instruction, language use in professional contexts, sociolinguistics, language policy and language assessment.

Applied Linguistics (http://applij.oxfordjournals.org/)

This journal publishes research into language that is associated with real-world problems. It views applied linguistics not only as the link between theory and practice, but also as the study of language and language-related problems in situations in which people use and learn languages. Areas of research published in this journal include bilingualism and multilingualism, computer-mediated communication, conversation analysis, corpus linguistics, critical discourse analysis, deaf linguistics, discourse analysis and pragmatics, first and additional language learning, teaching and use, forensic linguistics, language assessment, language planning and policies, language for special purposes, lexicography, literacies, multimodal communication, rhetoric and stylistics and translation.

Australian Review of Applied Linguistics (http://www.alaa.org.au/page/aral_journal.html)

This is the journal of the Applied Linguistics Association of Australia. It aims to promote the development of links between language-related research and its application in education, professional and other language-related settings. Articles published in this journal include articles on first and second language teaching and learning, bilingualism and bilingual

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

education, discourse analysis, translation and interpreting, language testing and language planning and policy.

European Journal of Applied Linguistics (http://www.degruyter.com/view/j/eujal)

This journal focuses on problems that are relevant to the language situation in Europe. The topics of interest for this journal include language testing for citizenship, language choice in European Union (EU) institutions, the age factor, consequences of the supremacy of EU legislation for legal terminology in the languages of member states, language contact in Europe, language policies at the national and EU levels, the linguistic needs of migrants and minorities, multilingualism in the workplace, multilingual families and bilingual first language acquisition in Europe and European approaches to foreign language teaching.

International Journal of Applied Linguistics (http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1473-4192)

This journal publishes research addressing the links between expertise in language and the experience of people using language. Thus, research areas may include the way language works, how it affects peoples' lives and what interventions are desirable and feasible in differing domains of language use and learning. This journal focuses on areas most closely related to language use and learning in society such as language policy, language in the professions, language in public discourse, and media and translating between languages and registers.

ITL International Journal of Applied Linguistics (http://poj.peeters-leuven.be/content.php?journal_code=ITL&url=journal)

This journal publishes research in the broad area of applied linguistics, with a strong preference for contributions relating to language acquisition such as SLA, foreign/second language teaching and educational linguistics.

Modern Journal of Applied Linguistics (http://www.mjal.org/)

This journal publishes work in all areas of language and linguistics studies including language teaching, language testing, English for specific purposes, pragmatics, computer-assisted language learning, sociolinguistics, language

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

learning problems, discourse analysis, curriculum development, classroom research and language policy.

Aims of applied linguistics research

AL aims to gain an understanding of language learning, the use of and problems associated with language in particular social contexts. There are various aims to applied linguistics research. For example:

- To gain basic knowledge or theory about language learning or use (e.g. first, second, third, bilingualism, multilingualism) generally or in a specific context or for a specific purpose.
- To confirm existing knowledge, theories or ideas about language learning, use or problems through the gathering of empirical evidence.
- To understand the roles of individuals and real-world contexts affecting the nature of language learning or use generally or in a particular context.
- To address problems in language learning, use or communication worldwide (e.g. in particular sociopolitical contexts, or in relation to educational policies and practices).
- To assess or evaluate a situation involving language learning or use such as language teaching, language testing and assessment, language program evaluation, translation, discourse and conversation analysis.
- To reduce or minimize issues concerning unfairness or inequality among people due to language and language-related issues and barriers.

Defining research in applied linguistics

Having introduced some of the aims of applied linguistics research, we now turn to how research is defined in the area of applied linguistics. We start with definitions of *research* provided by a number of applied linguists:

- Research is a systematic process of inquiry consisting of three elements or components: (1) a question, problem or hypothesis; (2) data; and (3) analysis; and interpretation of data (Nunan 1992, p. 3).
- Research is the organized, systematic search for answers to the questions we ask (Hatch & Lazaraton 1991, p. 1).

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

- 'Research' simply means trying to find answers to questions, an activity every one of us does all the time to learn more about the world around us (Dörnyei 2007, p. 15).

The above definitions are useful to help conceptualize what is involved in research. For the purpose of this chapter, research in applied linguistics can be defined as *an investigation, examination or inquiry that requires planning, organizing and ethical considerations as well as systematic and careful analysis of data, sound interpretations and conclusions on the basis of evidence and inferences being made*. To unpack this definition:

- *Investigation* means paying vigilant, methodical attention to every step in the research process, from the beginning to the end. Care is essential since it helps researchers avoid mistakes or errors in collecting and analysing data, for example.
- *Planning* and *organizing* include identifying what questions are worth asking, how they have been researched to date and why and how they need to be further researched.
- *Systematic* and *careful investigation* include the need to understand what research methods are appropriate and feasible, what approaches to data analysis have been taken by other methodologists or researchers in analysing similar kinds of data and what is acceptable or not in the analysis of the data.
- *Putting forward sound interpretations and conclusions* means not making a claim beyond the available evidence. It is thus essential to consider any limitations in the research that may influence the findings, inferences and conclusions that have been made.

Dimensions of research

Research can be classified into various dimensions. This section of the chapter examines the distinction between *primary* and *secondary* research, *basic* and *applied* research, *cross-sectional* and *longitudinal* research and *quantitative* and *qualitative* research. *Mixed methods* research is also discussed.

Primary versus secondary research

The distinction between *primary* and *secondary* research is determined by whether a new set of data is needed (primary research) or not (secondary research) to answer a research question. *Primary research* requires that empirical data be collected to answer the research question(s). For example,

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

if the aim is to understand people's attitudes or beliefs about something, their motivation to learn a particular language or the typical processes or procedures they use to do something, primary data needs to be collected to provide insights into these questions. The research, thus, might employ particular instruments (e.g. questionnaires) or techniques (e.g. interviews) to collect data which is then analysed in order to answer the research question.

If, however, the aim is to find out what other scholars have done on a particular topic, academic books and journals might be examined in order to do this. This form of inquiry is sometimes termed *secondary research* as it relies on other research and sources to answer the research question(s). Students are likely to begin with secondary research before they move on to conducting primary research. Secondary research can also be described as *library study* or a *review of the literature* on a particular topic. This form of research can be about existing theories or the status of current knowledge on a particular issue that can then be used to form the basis of a primary research project. In recent years, a new form of secondary research has become known as *research synthesis*, which includes a *meta-analysis* (see Ortega this volume) that aims to gain information about the current status of knowledge through a systematic analysis of empirical findings in a particular research area. This form of systematic review is useful as it is able to inform researchers as to what still needs to be done in future research.

Basic versus applied research

Most applied linguistics research can be placed on a basic-applied research continuum. The key distinction between *basic* and *applied* research lies in what researchers aim to achieve in their research. *Basic research* aims to produce fundamental knowledge about something that we currently lack, to refine or to fine-tune current knowledge, so that explanations of a phenomenon are meaningful, sufficient or robust. For example, in SLA research, researchers aim to understand the basic processes involved in language learning (e.g. morpheme acquisition, the roles of long-term and working memories, cross-linguistic influences, and individual and social differences affecting language learning and use; see e.g. Lightbown & Spada 2013; Ortega 2009). Research in these areas has the primary intent of gaining knowledge of or developing theories regarding what underlies individuals' processes or behaviours.

Applied research is related to situations in which researchers or practitioners aim to make use of or apply knowledge or theories from basic research to address a problem by systematically applying them through activities with a group of individuals and observing how they work to, for example, enhance learning or improve a process. In applied research, therefore, researchers aim to seek solutions to a problem.

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

Action research (see Burns this volume) is an example of applied research. Experimental research can be either basic or applied research depending on the research topics, aims and designs (see Gass this volume). It is important to note, however, that most studies in applied linguistics contain elements of both basic and applied research. It is often difficult to say that an applied linguistics study is basic or applied research due to the nature of the study design employed, which can have both basic and applied purposes.

Cross-sectional versus longitudinal research

The distinction between cross-sectional and longitudinal research relates to the *time* at which the data is collected and the *length* of time taken for the data collection. *Cross-sectional research* refers to research in which researchers collect data from one or more cohorts (a person, group of people) at a single point in time or within a short period of time (e.g. using questionnaires, one-off interviews). Cross-sectional research is often described as a *snapshot of data collection*. Survey research (see Wagner this volume) often adopts a cross-sectional data collection design.

Longitudinal research refers to research in which researchers gather the same aspects of information from the same participant(s) over a period of time. This allows researchers to observe changes or stability in behaviours, learning, abilities and/or other cognitive/social development. Longitudinal research can help researchers establish sequences of events or changes (see Dörnyei 2007 who discusses cross-sectional and longitudinal research distinctions in applied linguistics research; also Flick 2014 who addresses cross-sectional and longitudinal research with a qualitative orientation).

Quantitative versus qualitative research

The key distinction between *quantitative* and *qualitative* research lies in the types of data collected by the researchers. Quantitative data are *numerical data* that researchers obtain to answer research questions, such as test scores, Likert-scale questionnaire responses and academic grades (see Phakiti this volume), whereas qualitative data are data that can be described or conceptualized in words and these include data collected through interviews, observations, texts or pictures, rather than in numbers (see Holliday this volume). It is not, however, sufficient to classify research as just quantitative or qualitative due to the diversity of underlying philosophies and perspectives about what constitutes reality or knowledge that underlie various (so-called) research paradigms (see Research Paradigms below).

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

Quantitative research generally seeks to *explore* or *determine the relationship* between variables. Such relationships can be linear (two variables can increase or decrease in value in tandem) and causal (one variable can change the characteristics of another variable). Quantitative researchers use *variables* to represent what they are investigating (e.g. language proficiency, anxiety) and objective measures or tests to elicit variables as sources of research data. The researchers attempt to control the object of their investigation by, for example, manipulating or varying conditions of learning and standardizing research instruments and data-collection procedures. Quantitative researchers stress the importance of *objectivity* throughout their research processes (e.g. by avoiding personal opinions, values or judgments). Quantitative researchers often aim to have a *large sample size*, so that they can make better inferences about the variables under investigation and generalize their findings in light of an associated theory or to other populations or settings. Quantitative researchers analyse their data by means of numerical or *statistical* analysis. A statistical analysis can be descriptive (e.g. average scores, frequency counts or percentages) or inferential (e.g. it may employ a *probability* test to investigate the likelihood of a theoretical relationship). There are different quantitative research designs in applied linguistics including experimental research (see Gass this volume) and survey research (see Wagner this volume). Phakiti (this volume) provides an overview of quantitative research and data analysis.

Qualitative research in applied linguistics typically seeks to make sense of language, language learning or use in context, or a social phenomenon as it occurs in *natural settings* such as social and classroom settings. Unlike quantitative researchers, qualitative researchers do not aim to control the research setting. Qualitative researchers take the position that human behaviours such as language learning and use or actions are bound to the context in which they occur. Consequently, social reality within cultures, institutions and values cannot be interpreted in the same manner as physical reality. Qualitative researchers stress the importance of *meaning* and *holistic concerns* rather than discrete variables, statistics and standardization. Qualitative researchers allow themselves to be involved in formulating meanings and interpretations of what they have observed. In some situations, findings are viewed in light of insights from study participants as in ethnographic research (see Starfield this volume). Qualitative researchers employ techniques such as individual or group interviews, naturalistic observations and a range of qualitative data (see Holliday this volume) to help them develop an understanding of the research issue. They may also use research tools such as notes and audio or video recordings in their data collection. Case studies (Casanave this volume), ethnographic research (Starfield this volume) and narrative inquiry (Barkhuizen this volume) are typical examples of qualitative research designs.

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

Mixed methods research

In recent years, applied linguistics research has begun to combine quantitative and qualitative research methodologies in a single study. This is described as *mixed methods research* (MMR). Creswell and Plano Clark (2011), Ivankova and Greer (this volume) and Riazi and Candlin (2014) provide comprehensive discussions of mixed methods research design. This approach argues that employing both quantitative and qualitative methodologies can strengthen the quality of a study because one can support, complement or expand the other. A mixed methods design is, however, not simply a matter of quantitative data plus qualitative data (see Dörnyei 2007). The rationale and decisions for combining two distinct methodologies are needed for a mixed methods study to be appropriate. Riazi and Candlin (2014) point out that issues involved in MMR designs are highly complex as, for example, they need to be dealt with at the level of research paradigms (e.g. postpositivism and constructivism; further discussed below), purposes of mixed methods research (e.g. triangulation, complementarity, development) and parallelism or sequences of quantitative or qualitative phases. It should also be noted that while *survey research* (Wagner this volume) has a tradition of being quantitative research and *action research* (Burns this volume) has a tradition of being qualitative research, in recent years, both have the potential to be seen as MMR designs since researchers can collect both quantitative and qualitative data while still working with the same approach.

There are three common mixed methods designs in applied linguistics research.

- Researchers can use one research method to complement another; that is, a one-after-the-other design (Flick 2014). The study, thus, may commence with a research question that can be answered through quantitative analysis. On the basis of the findings of the quantitative component of the study, qualitative data may be collected through, for example, individual and group interviews or observations. The researchers then analyse the qualitative data to add to or counterbalance the quantitative findings.
- Researchers use one research approach as a starting point for another; that is, a dominance design (Flick 2014). In this design, the emphasis is more often on the latter method of the two. For example, researchers may interview a group of learners and, on the basis of qualitative analysis of the data, develop a Likert-scale questionnaire that is used with a much larger group of learners to examine the question from a quantitative perspective.
- Researchers ask a set of research questions and use one method to answer each question separately and independently, that is, a side-

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

by-side design (Flick 2014). For example, the question 'what is the relationship between intrinsic motivation and self-efficacy?' could be answered via the use of correlational analysis of questionnaire data. The question 'what are the key factors influencing their relationship?' could then be answered via qualitative analysis of individual interviews with high-, medium- and low-ability students who were part of the questionnaire phase of the study.

People new to research methods can find it difficult to understand the difference between *data triangulation* and *mixed methods research*. Although a mixed methods design may allow researchers to triangulate research results, data triangulation refers only to the strategy of collecting information from different or multiple sources to help gain a deeper understanding of a particular matter. For example, ethnographic researchers who use a combination of interviews, observations and document analysis to answer their research questions are not necessarily employing a mixed methods design since they analyse the data qualitatively, not mixing quantitative and qualitative methods. Similarly, experimental researchers who collect data from language tests, academic grades, self-assessment and various kinds of questionnaire are not necessarily using a mixed methods design since they may choose to analyse all the data statistically. In both examples, data triangulation is not the same as mixed methods research.

Research paradigms

This section of the chapter expands the discussion of research to the level of (so-called) *research paradigms*. Understanding and making sense of research paradigms can be one of the most challenging tasks for new researchers. Indeed, it may take a whole book to address a single research paradigm. Nevertheless, students and other people new to research need to be aware of the research paradigm that underlies the approach(es) to uncovering knowledge that is being used in the research. There is, of course, no good or bad research paradigm, since research is judged on the basis of the topic it investigates, its aims and the methodology being used. Researchers using different paradigms have the same basic mission: to improve knowledge on a particular topic.

A research paradigm is the underlying philosophical view of what constitutes knowledge or reality as the researcher seeks to gain an understanding of a particular topic. The paradigm directs researchers to collect data and/or evidence that can be viewed as valid, legitimate or trustworthy. Predominant research paradigms include positivism, postpositivism, constructivism and critical-realism (see Guba & Lincoln 2005 for a comprehensive review of research paradigms across academic

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

disciplines). A researcher's adopted paradigm is not something that is always boldly stated or labelled by the researcher. Researchers hardly ever say 'I am a postpositivist' or 'This research takes a constructivist perspective' in their published research. However, we can speculate and infer a researcher's paradigm by observing the principles they follow and how they go about their pursuit of knowledge.

So far, this chapter has discussed various approaches to and methods employed in applied linguistics research, including a discussion of both quantitative and qualitative methods. This leads to the question of *why* researchers collect data in a particular way. For example, why do experimental researchers attempt to control or manipulate the research setting? Why do ethnographic researchers not attempt to control or manipulate the research setting, but take it as it is? According to Guba and Lincoln (2005), the question of *why* leads us to the twin concepts of *paradigm* and *strategy*. A research paradigm is a set of beliefs or a philosophical view that underlies the approach to research, whereas a research strategy is the way in which researchers go about trying to understand what they aim to investigate.

There are three key concepts that help us understand the different dimensions of a research paradigm: *ontology* (i.e. our views on the nature of reality), *epistemology* (i.e. our views on the nature of knowledge and how it can be acquired) and *methodology* (i.e. the research approach we use to investigate reality) (Guba & Lincoln 2005). At an ontological level, we ask: what do we think we can know? What is reality? At an epistemological level, we ask: what is our relationship to the thing we are trying to know? Do we need to be *objective* or *subjective* in order to better know it? At a methodological level, we ask: how do we go about our pursuit of knowledge? Is a case study appropriate, for example?

It is important to note that when research authors mention 'quantitative and qualitative research paradigms', what they are actually referring to only distinguishes research at the methodological level, and not at the overarching research paradigm level. We now provide brief definitions of key research paradigms (positivism, postpositivism, constructivism) and pragmatism:

- *Positivism* is a research philosophy that believes that reality can be understood objectively. There is a set of immutable laws or theories that govern reality. Reality is seen as quantifiable and measurable.
- *Postpositivism* is a modified version of positivism that believes reality can only be approximated and cannot be perceived with total accuracy. Objectivity is viewed as an ideology to guide researchers.
- *Constructivism* is a research philosophy that views social realities (e.g. cultures, cultural objects, institutions, values) as multiple and dependent on who is involved, what is being studied and the context in which a study takes place. Reality is typically seen as being socially co-constructed.

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

- *Pragmatism* is a pluralistic approach to research that stresses the importance of *problem solving* over the adoption of a particular approach to research methods. Pragmatism is not a paradigm in the traditional sense. This research approach adopts methods (quantitative and/or qualitative) that work best to address a particular research problem, rather than committing to a particular research philosophy which may have a specific view of what constitutes reality. Pragmatism seeks an application of multiple methods, types of data and data analyses that can fully provide answers to research questions or problems. This paradigm can be said to underpin mixed methods research.

Ontology

In a *positivist paradigm*, evidence takes on a *realist* perspective. Positivists believe that the object of their inquiry exists objectively. Positivism assumes that physical or social reality is governed by immutable laws that are essentially independent of by whom, when and how it is examined (Guba & Lincoln 2005). This paradigm is the basis of several types of quantitative research, including experimental research and survey research.

A modified positivist or what is now known as a *postpositivist paradigm* would maintain that, although the object of inquiry exists independently of the human mind, researchers cannot observe and perceive it with total accuracy. This view can be regarded as a *critical realist ontology*. Positivists and postpositivists, for example, strive for testable and confirmable theories that explain phenomena by showing how they are derived from theoretical assumptions. They, for example, posit that there is a cause–effect relationship between two variables and seek scientific explanations and laws governing human behaviours, thoughts and behaviours.

Unlike positivism and postpositivism, *constructivism* does not share the realist or critical realist perspective. That is, it takes the *relativist* stance that realities are multiple and exist in people's minds. Although there is no one way to describe constructivism due to varying perspectives of what constitute the truth and diverse starting points of research inquiry (Flick 2014; LeCompte & Schensul 2010), constructivists would agree in their assertion that the subject matter of social sciences differs fundamentally from the subject matter of physical or natural sciences and, therefore, requires a different goal for inquiry and a different set of methods for investigation. They further argue that social reality (e.g. cultures, cultural objects, institutions, values) cannot be reduced in the same manner as physical reality. Hence, perceived reality can be multiple depending on who is involved and the context in which the study takes place. It is the task of the researcher to understand and portray social settings or events as they are, rather than trying to manipulate them.

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

Pragmatism does not necessarily view truth or reality as something independent of human minds or something socially co-constructed. Pragmatists do not have to commit to a traditional system of reality arguments. Rather, they focus on the need to use a variety of methods from various research paradigms to advance their knowledge about the research problem under investigation.

Epistemology

In relation to its ontology, *positivism* assumes an *objectivist* stance towards research inquiry. That is, positivists must remove their influence from the research setting and distance themselves from their object of inquiry, so that they can determine an accurate correspondence between their observations and this reality. Unlike positivists, *postpositivists* argue that complete objectivity is nearly impossible to achieve. They do, nonetheless, retain the notion of objectivity as an idea to regulate their research. That is, they can never absolutely know the truth, but they can approximate it, and can get closer to it with better theories, and through their experiences of conducting research.

Unlike positivism and postpositivism, the *constructivist paradigm* takes the *subjectivist* position that attempts to know things are inherently and unavoidably subjective. Reality, as they perceive it, is dependent upon, rather than independent of, their inquiry. They argue that facts cannot be established as aspects of knowledge independent of a researcher's values and background. Taking the epistemological aspect into consideration when examining research in applied linguistics, significant differences can be seen in the way in which researchers collect data. In a language classroom, for example, an observer may choose to sit at the back of the classroom and observe quietly what is going on using a structured observation scheme. He or she would try to be as objective as possible and be aware of the need to avoid any personal bias during the observation. Another observer may choose to be actively involved in the classroom activities and attempt to establish *trust* with the participants. This method of being involved, he/she argues, allows him/her to gain deeper insights into the participants' minds and perspectives.

Proponents of pragmatism are aware of the issues related to objectivity and subjectivity in research. They acknowledge that research takes place in a social setting and to be objective or subjective depends on what is socially accepted. For example, when the setting involves testing and assessment, which may have high-stakes implications on individuals and/or society, objectivity is needed. However, when the object of inquiry is related to individuals' feelings or attitudes towards some sociocultural activities, subjectivity will be critical to facilitate insight into participants' minds.

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

Pragmatically speaking, objectivity and subjectivity need to be considered in relation to real-world research topics and traditional views of methods associated with such topics.

Methodology

Positivists conduct their research by defining and controlling variables and manipulating the research setting. In experimental research, researchers vary the independent variable (the variable believed to influence other variables) under various conditions to test its effect. Participants are randomly assigned to different conditions to avoid subjective selection by the researchers and to minimize the impact of other independent variables that might coexist during the experimental study (e.g. the different ages and levels of language proficiency of participants). In survey and correlational research, research instruments (e.g. questionnaires and tests) and data-collection procedures should be validated (trialled and analysed) before actually being used in the main study. These are examples of control and manipulation.

Postpositivists take a similar stance to the positivists. However, they modify the positivists' position by promoting the use of multiple strategies for gathering and analysing data (including qualitative data such as interviews and observations). It should be noted that within postpositivism, data collection and analysis must still be carried out within the critical realist ontology (to maintain as much objectivity as possible). For example, qualitative data such as interview data must be coded by two or more trained coders, and intra- and inter-coder reliability estimates must be calculated and reported.

The constructivist paradigm, in contrast, adopts a non-experimental, non-manipulative set of research procedures including the range of techniques associated with participant observation and in-depth interviews. The term *hermeneutics* is used to describe a research process in which the researcher forms interpretations or constructions, from a close understanding of the data (e.g. observation notes, interview recordings). This initiates a cycle (potentially never-ending the hermeneutic circle) of interpreting these constructions and then refining and forming new constructions.

Finally, pragmatists look for various approaches and methods to address a real-world research problem. They attempt to use the best of both quantitative and qualitative research methods to maximize their understanding. Pragmatists might combine a traditional survey research method using a large sample size, followed by a case study utilizing individual interviews (with students, teachers and administrators) and classroom observations using both structural observation schemes and qualitative observations.

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

Owing to the complexity of paradigm dimensions and research specificities, there are other research paradigms that we have not included here (e.g. the ecological paradigm, the critical paradigm, the social network paradigm, the feminism and the participatory paradigm; see e.g. Flick 2014; Guba & Lincoln 2005). Some authors in this volume do however touch on some of these research paradigms in their chapters.

Table 1.1 summarizes the differences between key research paradigms at the ontological, epistemological and methodological levels (e.g. Creswell 2014; Flick 2004, 2014; Guba & Lincoln 2005; LeCompte & Schensul 2010).

Validity, reliability and ethics

The adopted research paradigm plays a significant role in defining what is considered to be valid research. In this volume, various authors describe what they see as valid or trustworthy within a particular research design. Here, we introduce the concept of validity/trustworthiness, reliability and ethics.

The term *validity* is largely associated with traditional quantitative research. However, some qualitative researchers do use the term 'validity' to describe the legitimacy of their research. An alternative term adopted in qualitative research, however, is *trustworthiness*. Regardless of a preference for one term or the other, validity and trustworthiness are related to the extent to which we can trust the research findings; that is, what the researchers claim as knowledge and understanding of a research problem. See Gass (this volume) and Wagner (this volume) for further types of validity of quantitative research; see Casanave (this volume) and Burns (this volume) for discussions of trustworthiness in qualitative research.

Reliability is driven by quantitative research and is about *consistency* in measuring something of interest. Often, reliability is associated with research instruments. In quantitative research, research validity cannot be attained when the research instruments used are unreliable. However, reliable instruments may not be valid. For example, an English grammar test may be reliable because students will get similar scores if they take the test on multiple occasions. However, if the scores from the grammar test are used to make claims about how well students can write in English, an invalid claim is being made because writing ability involves more than just grammatical knowledge. In qualitative research, researchers use the concept of *dependability*, which allows readers to understand any shifting conditions that are associated with the participants and the setting being researched

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

Table 1.1 Differences between four research paradigms (e.g. Creswell 2014; Flick 2014; Guba & Lincoln 2005; LeCompte & Schensul 2010)

Level	Positivism	Postpositivism	Constructivism	Pragmatism
Ontology	Realism: Reality is 'out there' and can be known; hypothetical linear or cause–effect relationships	Critical realism: Reality is out there but probable facts; no absolute truth about relationships	Relativism: Multiple realities as constructed by the local and specific; co-construction of knowledge or understanding of relationships	Not committed to one system of reality
Epistemology	Objective; context- and value-free; to prove or test theory; generalize findings; to establish universal theory	Objective; context-bound; to prove, test and/or falsify theory	Subjective; value-bound; to portray people, social settings or events	Objectivity and subjectivity depends on the real-world problem being focused.
Methodology	Control and manipulation of variables, testing and measurement of variables, quantitative research methods such as experimental, survey, statistical research; quantitative instrument (e.g. tests, questionnaires); stress reliability and validity of measurement and analysis	Similar to positivism, but modified quantitative research designs; multiple strategies (including qualitative techniques, but must be objective)	Hermeneutical; dialectical; qualitative research methods (e.g. case studies, ethnographies, narrative inquiry); qualitative techniques (e.g. interviews, observation, documents); employ trustworthiness criteria	Flexible to adopt a variety of methods and techniques across other research paradigms. It takes a problem-centred approach.

and any research modifications researchers make as they progress through their study. Such explicit and honest accounts of research methods can help both researchers and their readers understand the research findings. Dependability, thus, in qualitative research is analogous to *reliability* in quantitative research.

Ethical considerations are critical to all research. If knowledge is gained through research processes that might harm human beings (physically or psychologically), intentionally or unintentionally, then the price of this knowledge may be considered too high. With regard to research participants, some points researchers should consider include whether *informed consent should be sought* (i.e. should all research participants be informed of the potential risks and benefits of the research before giving their consent, and is this consent required?), should *anonymity* be maintained (i.e. should the identities of research participants remain undisclosed, potentially even to the researcher?) and should *confidentiality* be respected? (e.g. in the case in which the researcher is aware of the identities of research participants, should these identities be revealed or not in the reporting of the data). Ethics approval needs to be obtained from the institution where the study is being carried out prior to the data collection. In most academic institutions, there is a research ethics committee that considers research projects and makes sure that a high ethical standard in the research has been met (see De Costa this volume for a discussion of this).

Peer-reviewed journals in applied linguistics

The following refereed journals publish on a variety of research topics in applied linguistics:

> *Applied Linguistics; Bilingualism: Language and Cognition; English for Specific Purposes; English Language Teaching Journal; International Review of Applied Linguistics; Journal of Bilingualism; Language Learning; Language Teaching; Language Teaching Research; Second Language Research; Studies in Second Language Acquisition; System; TESOL Quarterly; The Modern Language Journal; World Englishes.*

A further useful resource for locating applied linguistics journals is the document published each year by the International TESOL Association titled *How to Get Published in TESOL and Applied Linguistics Serials* which is available at:

> http://www.tesol.org/docs/default-source/books/how-to-get-published-in-applied-linguistics-serials.pdf?sfvrsn=4

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

Resources for further reading

Each of the chapters of this book recommends further reading on the particular approaches, methods or topics being discussed. Here, we list a number of books on research methods that readers will find useful.

Allison, D 2002, *Approaching English Language Research*, Singapore University Press, Singapore.

Allison presents the process of carrying out research. This book discusses practical problems in undertaking research, reading and reporting on research, data analysis and the interpretation of findings. There is a chapter on writing a research proposal as well as a section on problems that students often meet in carrying out research.

Brown, JD & Rodgers, TS 2002, *Doing Second Language Research*, Oxford University Press, Oxford.

This book discusses both qualitative and quantitative research. Specific topics include case study research, introspective methods, classroom-based research, the use of statistics and language program evaluation. There are many self-study exercises in the book.

Dörnyei, Z 2007, *Research Methods in Applied Linguistics*, Oxford University Press, Oxford.

This book provides an extensive discussion of quantitative, qualitative and mixed method research. There are also chapters on data analysis and reporting on research.

Flick, U 2014, *An Introduction to Qualitative Research*, 5th edn, Sage, London.

Now in its fifth edition, this book comprehensively presents approaches to qualitative research and methodologies involved in conducting qualitative research. Although this book is not written specifically for applied linguistics research, it is accessible and extremely useful for researchers who are new to qualitative research.

Gass, S & Mackey, A 2007, *Data Elicitation for Second and Foreign Language research*, Lawrence Erlbaum, Mahwah.

This book presents a detailed discussion of data elicitation techniques for second and foreign language research. This includes a discussion of psycholinguistics-based research, research which examines cognitive processes, survey research, pragmatics-based research and classroom-based research.

McKay, SL 2006, *Researching Second Language Classrooms*, Lawrence Erlbaum, Mahwah.

This book provides a very good overview of methods for researching second language classrooms. It contains chapters on different types of research, ways of researching classroom discourse, and provides guidance for writing research reports. Particular attention is given to action research, survey research, introspective research, case studies and ethnographic studies.

Mackey, A & Gass, S 2005, *Second Language Research: Methodology and Design*. Lawrence Erlbaum, Mahwah.

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

This book discusses issues in data gathering, common data-collection techniques and the coding of data. It also discusses qualitative and quantitative research, classroom-based research and issues in the reporting of research.

Mackey, A & Gass, SM (eds) 2012, *Research Methods in Second Language Acquisition: A Practical Guide*, Wiley-Blackwell, Malden.

This edited book provides a comprehensive, step-by-step guide to various research designs in second language research. There are two parts to this book: data types (e.g. areas of research including learner corpora, instructed SLA, second language writing and reading), and data coding, analysis and replication (e.g. how to code qualitative data and run statistical analysis, how to do a meta-analysis and replication study).

Richards, K, Ross, S & Seedhouse, P 2012, *Research Methods for Applied Language Studies: An Advanced Research Book for Students*, Routledge, London.

This book presents quantitative, qualitative and mixed methods research designs in applied language studies, particularly in the areas of foreign language learning, teaching and assessment. In each chapter, the authors provide a range of tasks and discussion points to help readers understand some specific research concepts and topics.

Walliman, N 2011, *Research Methods: The Basics*, Routledge, London.

This book introduces various aspects of research principles, theories and methodologies. Topics include types of data, data-collection procedures, data analysis and research writing.

References

Berns, M & Matsuda, PK 2006, 'Applied linguistics: Overview and history', in K Brown (ed.), *The Encyclopedia of Language and Linguistics*, 2nd edn, Elsevier, Oxford, pp. 394–405.

Cambridge English Language Teaching (ELT) n.d, 'What is applied linguistics?', viewed 30 July 2014 http://www.cambridge.org.br/for-teachers/applied-linguistics?uk_url=/servlet/file/store7/item5633198/version1/Article_What%20is%20applied%20linguistics.pdf.

Cook, G 2003, *Applied Linguistics*, Oxford University Press, Oxford.

Creswell, JW 2014, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 4th edn, Sage, Thousand Oaks, CA.

Creswell, JW & Plano Clark, VL 2011, *Designing and Conducting Mixed Methods Research*, 2nd edn, Sage, Thousand Oaks, CA.

Davies, A & Elder, C (eds), 2004, *Handbook of Applied Linguistics*, Blackwell, London.

Dörnyei, Z 2007, *Research Methods in Applied Linguistics: Quantitative, Qualitative, and Mixed Methodologies*, Oxford University Press, Oxford.

Flick, U 2004, 'Constructivism', in U Flick, Ev Kardorff & I Steinke (eds), *A Companion to Qualitative Research*, Sage, London, pp. 88–94.

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

——— 2014, *An Introduction to Qualitative Research*, 5th edn, Sage, London.
Guba, EG & Lincoln, YS 2005, 'Paradigmatic controversies, contradictions, and emerging confluences', in NK Denzin & YS Lincoln (eds), *The Sage Handbook of Qualitative Research*, 3rd edn, Sage, Thousand Oaks, CA, pp. 191–215.
Hall, CJ, Smith, PH & Wicaksono, R 2011, *Mapping Applied Linguistics: A Guide for Students and Practitioners*, Routledge, London.
Hatch, E & Lazaraton, A 1991, *The Research Manual: Design and Statistics for Applied Linguistics*, Newbury House, Rowley, MA.
LeCompte, MD & Schensul, J 2010, *Designing and Conducting Ethnographic Research: An Introduction*, AltaMira Press, Plymouth.
Lightbown, PM & Spada, N 2013, *How Languages are Learned*, 4th edn, Oxford University Press, Oxford.
McCarthy, M 2001, *Issues in Applied Linguistics*, Cambridge University Press, Cambridge.
Nunan, D 1992, *Research Methods in Language Learning*, Cambridge University Press, Cambridge.
Ortega, L 2009, *Understanding Second Language Acquisition*, Hodder, London.
Pawlak, M & Aronin, L 2014, *Essential Topics in Applied linguistics and Multilingualism: Studies in Honor of David Singleton*, Springer, New York, NY.
Pennycook, A 2001, *Critical Applied Linguistics: A Critical Introduction*, Lawrence Erlbaum Associates, London.
Riazi, M & Candlin, CN 2014, 'Mixed-methods research in language teaching and learning: Opportunities, issues and challenges', *Language Teaching*, vol. 47, no. 2, pp. 135–173.
Schmitt, N 2002, *An Introduction to Applied Linguistics*, Arnold, London.

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use

EBSCOhost - printed on 6/11/2025 3:20 AM via UNIVERSITY OF QUEENSLAND (UQ). All use subject to https://www.ebsco.com/terms-of-use