SOCIETY Publishing

How to Write a Research Paper:

A Handbook for International Students

Hamed Barjesteh, Fereshteh Azizmohammadi
and Mohamad Heidarzadi

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LIST OF ABBREVIATIONS

AEOP	Awaiting Editorial Office Processing
AGFI	Adjusted Goodness-of-Fit Index
AGFT	Adjusted Goodness of Fit Test
AHCI	Arts and Humanities Citation Index
ANCOVA	Analysis of Covariance
ANOVA	Analysis of Variance
APA	American Psychological Association
AR	Action Research
CCDA	Critical Classroom Discourse Analysis
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMS	Chicago Manual of Style
COIs	Conflicts of Interest
COPE	Committee on Publication Ethics
CRediT	Contributor Roles Taxonomy
CSIC	Consejo Superior de Investigaciones Científicas
DOAJ	Directory of Open Access Journals
DOI	Digital Object Identifier
DV	Dependent Variable
EFA	Exploratory Factor Analysis
EFL	Iranian English Foreign Language
e-ISSN	Electronic ISSN
ESCI	Emerging Sources Citation Index
ESI	Essential Science Indicators
FIB	Fill in the Blank
GFI	Goodness-of-Fit Index
HCI	Humanities Citation Index
HSD	Honestly Significant Difference

ICMHESR	Islamic Conference of the Ministers of Higher Education and Scientific Research
ICMJE	International Committee of Medical Journal Editors
IdP	Identity Provider
IF	Impact Factor
IPA	Interpretative Phenomenological Analysis
IRE	Initiation-Response-Evaluation
IRF	Initiation-Response-Feedback
ISC	Islamic World Science Citation Center
ISI	Institute for Scientific Information
ISSN	International Standard Serial Number
IV	Independent Variable
JCR	Journal Citation Reports
JIF	Journal Impact Factor
L2	Second Language
MLA	Modern Language Association
MLE	Maximum Likelihood Estimation
NFI	Normed Fit Index
OA	Open Access
OASPA	Open Access Scholarly Publishers' Association
ORCID	Open Researcher and Contributor Id
OUP	Oxford University Press
PAR	Participatory Action Research
PET	Preliminary English Test
PFI	Parsimonious Fit Index
p-ISSN	Print ISSN
QRD	Quasi-Experimental Research Design
RFI	Relative Fit Index
RMSEA	Root Mean Square Error of Approximation
SaaS	Software as a Service
SCI	Science Citation Index
SCIE	Science Citation Index Expanded
SEM	Structural Equation Modeling
SJR	SCImago Institution Rankings

SNIP	Source Normalized Impact per Paper
SSCI	Social Sciences Citation Index
SW	Sentence Writing
TA	Thematic Analysis
TLI	Tucker-Lewis Index
WOS	Web of Science
WTC	Willingness to Communicate

ACKNOWLEDGEMENT

We would like to appreciate our masters and doctorate students who inspired us and gave us many insights into the preparation of this book. Our special thanks go to our colleagues who read portions of the manuscript and offered feedback and suggestions. To be sure, we do not hold anyone else responsible for any errors contained in this book. We would like to appreciate those who had significant input and wonderful insight into this edition. Special thanks also go to the publisher who did some excellent proofing at a critical stage of the development of the book. Finally, we appreciate our families who put up with our hectic work and writing schedules.

PREFACE

In the last two decades, we have seen growing emphasis on research at the postgraduate level. Through years of teaching research at the master and PhD level, we found students have trouble writing an academic paper. The books published on research methods do not put students inside the research processes as research reporters. In fact, they help classroom teachers to become better consumers of research studies (Brown, 1988). Students read different books on research methods that provide them information at the theoretical level. Yet, most of the students need to write for different purposes. What it comes at the practical phase, writing turns to be a demanding task for students. This book aims to provide to learn a sense of research by involving them in the practical test. To this end, the book was designed in two parts. Part one provides key concepts in writing an academic paper, to that general end, part one has been organized at six specific objectives.

1. To familiarize students with different science citation indexes (SCIs), journal impacts, citation databases scholar metrics, and predatory publishers;
2. To illustrate a feel of what writing an academic paper is like by providing information about journals submitting a paper, types of journals, and typical workflow of manuscript from submission to publication;
3. To provide the most notable changes in APA manual seventh edition;
4. To offer how to write a research report by providing details of how to write title, abstract, introduction, method, result, discussion, and references;
5. To give samples of different qualitative data analysis by providing a various classification of parametric and non-parametric statistics; and
6. To show the process of data analysis in qualitative research by familiarizing students with common qualitative research approaches, designs, sampling techniques, data collection, and types of data analysis.

The second part provides the main research methodology research questions. We wrote this section in question and answer (Q and A) format. This section aims to provide our intended readership, including postgraduate students, and researchers with a source read which they can acquire immediate experience. The key feature of Q and A items is that they have been posted by visit ResearchGate members, who are established university professors, postgraduate students, or PhD candidates studying one of the majors in applied linguistics of different universities all over the world. Notably, the ResearchGate is a social networking site for researchers and scholars, which provides intellectual areas for scientific interaction. Thus, Q and A items provided in Part 2 seem to shed light on our readership with various topics posed by the members. This section

will strengthen the critical thinking skill of postgraduate students about how to answer the question. We hope that reading this book helps our intended readership to maximize their academic potential. We also hope all readers find this book a practical and easy-to-use guide for writing an academic paper.

—Hamed Barjesteh

Fereshteh Aziz Mohammadi

Mohamad Heidarzadi

PART I:
BASIC ISSUES IN WRITING A RESEARCH PAPER

CHAPTER 1

SCIENCE CITATION INDEX

At the end of this chapter, students will learn:

- Author Impact;
- Journal Impact and Citation Database;
- Global Publishers of Quality Academic References;
- Scholar Metrics;
- Predatory Publishers.

1.1. AUTHOR IMPACT

1.1.1. H-Index

H-index corresponds to a scientist's h of his/her N papers that have been cited at least h times each, while the rest of the N papers have less than h citations each. The h-index measures both the productivity and citation impact of the publications of a scientist or scholar. The web of science (WOS) uses the H-Index to quantify research output by measuring author productivity and impact.

H-Index = number of papers (h) with a citation number $\geq h$.

Example: A scientist with an H-Index of 37 has 37 papers cited at least 37 times.

- Advantages of the H-Index:
  - Allows for direct comparisons within disciplines;
  - Measures quantity and impact by a single value.
- Disadvantages of the H-Index:
  - Does not give an accurate measure for early-career researchers;
  - Calculated by using only articles that are indexed in WOS;
  - If a researcher publishes an article in a journal that is not indexed by WOS, the article as well as any citations to it will not be included in the H-Index calculation.

1.1.2. Tools for Measuring H-Index

- Web of science;
- Google scholar.

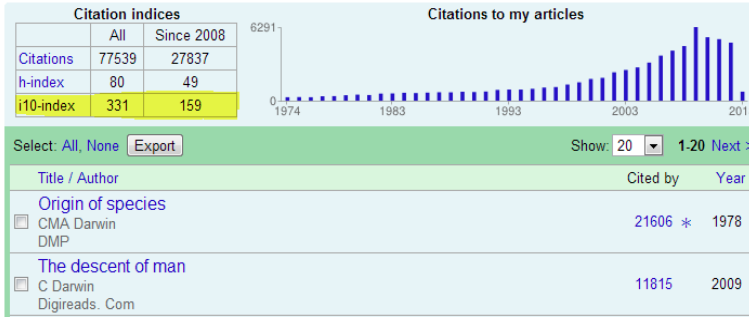
1.1.3. i10-Index

i10 index refers to the number of papers with 10 or more citations. i10-Index = the number of publications with at least 10 citations. This very simple measure is only used by Google Scholar, and is another way to help gauge the productivity of a scholar.

- Advantages of i10-Index:
  - Very simple and straightforward to calculate;
  - My Citations in Google Scholar is free and easy to use.
- Disadvantages of i10-Index:

- Used only in Google Scholar.

Here is an example of citation indices:



1.1.4. G-Index

For the citations received and given a number of papers ranked in a decreasing order according to the citations received till now, the G-index is the biggest number such that the top G articles received (altogether) at least G2 (G square) citations. This index assists the h-index and gives more weight to the highly-cited paper. The G-index was proposed by Leo Egghe in his paper "Theory and Practice of the G-Index" in 2006 as an improvement on the H-Index. G-Index is calculated this way: "[Given a set of articles] ranked in decreasing order of the number of citations that they received, the G-Index is the (unique) largest number such that the top g articles received (together) at least g^2 citations."

- Advantages of the G-Index:
  - Accounts for the performance of author's top articles;
  - Helps to make more apparent the difference between authors' respective impacts. The inflated values of the G-Index help to give credit to lowly-cited or non-cited papers while giving credit for highly-cited papers.
- Disadvantages of the G-Index:
  - Introduced in 2006. and debate continues whether G-Index is superior to H-Index. It might not be as widely accepted as H-Index.

1.1.5. Web of Science (WOS)

Web of Science (WOS) (previously known as Web of Knowledge) is a website which provides subscription-based access to multiple databases that provide

comprehensive citation data for many different academic disciplines. It was originally produced by the Institute for Scientific Information (ISI) and is currently maintained by Clarivate Analytics (previously the Intellectual Property and Science business of Thomson Reuters.

1.1.6. Essential Science Indicators (ESI)

Essential science indicators (ESI) is an analytical tool that helps you identify top-performing research in WOS Core Collection. ESI surveys more than 11,000 journals from around the world to rank authors, institutions, countries, and journals in 22 broad fields based on publication and citation performance. Data covers a rolling 10-year period and includes bi-monthly updates to rankings and citation counts. ESI is sourced from the science citation index-expanded (SCIE) and the social sciences citation index (SSCI) in WOS core collection.

- **Document Types:** ESI analyzes articles and reviews from SCIE and SSCI journals to determine how well a paper is performing. [Letters, editorial materials, corrections, etc., aren't regularly cited and, therefore, aren't included in ESI calculations].
- **Depth of Data:** ESI data consists of a 10-year rolling file, which increases with each bi-monthly update, accumulating up to 11 years. After 11 full years of data are added, the first year is then dropped, setting the file back to a 10-year period.
- **Fields:** ESI uses 22 broad disciplines to rank entities and identifies top-performing papers. Each journal is assigned to only one field, and the research published in that journal will take on that field assignment.

1.1.7. Journal Citation Reports (JCR)

Journal citation reports (JCR) is a product of Clarivate analytics and is an

authoritative resource for impact factor (IF) data. This database provides IFs and rankings of many journals in the social and life sciences based on millions of citations. It offers numerous sorting options including IF, total cites, total articles, and immediacy index. In addition, JCR provides a 5-year IF and visualized trend data.

1.1.8. How Do I Find the Impact Factor (IF) of a Journal?

Use the JCR available through the Web of Knowledge service. To check the IF of a specific journal, you can search by title. Otherwise, you can browse by subject (subject categories are brought together in the Science and Social Science strands). Thomson Reuters is the owner of journal impact factor (JIF) and the only one who should be using that term. There are other measures from Elsevier (Cite Score), CWTS Leiden (SNIP) SCImago (SJR) that try to exclude predatory journals from their lists. Google Scholar uses a 5 year H index and it does not scan for questionable journals. The newcomer to the field, Dimensions, uses field citation ratios. While there are some questionable journals in their dataset, this is a good free J alternative that covers more publications than Clarivate Analytics publications or Scopus.

1.1.9. Scopus and Elsevier

Scopus is Elsevier's abstract and citation database launched in 2004. Scopus covers nearly 36,377 titles (22,794 active titles and 13,583 inactive titles) from approximately 11,678 publishers, of which 34,346 are peer-reviewed journals in top-level subject fields: life sciences, social sciences, physical sciences and health sciences. It covers three types of sources: book series, journals, and trade journals. All journals covered in the Scopus database, regardless of who they are published under, are reviewed each year to ensure high quality standards are maintained. Searches in Scopus also incorporate searches of patent databases (Heigham and Croker 2009) [1]. Scopus gives

four types of quality measures for each title; those are *h*-Index, CiteScore, SJR (SCImago Journal Rank) and SNIP (Source Normalized Impact per Paper). Both Science Direct and Scopus are subscription-access scientific literature databases owned by the publisher Elsevier, but Science Direct hosts the full text of Elsevier content whereas Scopus includes abstracts and citation statistics about both Elsevier and non-Elsevier content.

1.1.10. Thomson Reuters

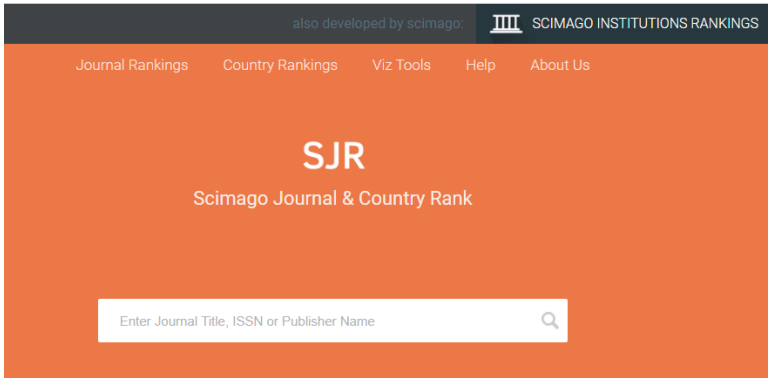
1.1.10.1. Master Journal List

The Master Journal List is an invaluable tool to help you to find the right journal for your needs across multiple indices hosted on the WOS platform. Spanning all disciplines and regions, WOS *Core Collection* is at the heart of the WOS platform. Curated with care by an expert team of in-house editors, WOS *Core Collection* includes only journals that demonstrate high levels of editorial rigor and best practice. As well as the WOS *Core Collection*, you can search across the following specialty collections: *Biological Abstracts*, *BIOSIS Previews*, *Zoological Record*, and *Current Contents Connect*, as well as the *Chemical Information* products. It was acquired by Thomson Scientific and Healthcare in 1992. Thomson ISI is a part of the Healthcare and Science business of Thomson Reuters. ISI offered bibliographic database services. Its specialty: citation indexing and analysis, a field pioneered by Garfield. Master Journal List lets you search across all journals indexed in:

- Science citation index expanded (SCIE);
- Social sciences citation index (SSCI);
- Arts and humanities citation index (AHCI);
- Emerging sources citation index (ESCI).

1.1.11. SCImago Journal Rank

SCImago Journal Rank is a measure of scientific influence of scholarly journals that accounts for both the number of citations received by a journal and the importance or prestige of the journals where such citations come from. A journal's SJR is a numeric value indicating the average number of weighted citations received during a selected year per document published in that journal during the previous 3 years. Higher SJR values are meant to indicate greater journal prestige. It also provides rankings by journal country of origin and numerous visual representations of journal impact data. The ranking method is based on the well-known Google Page Rank algorithm.



1.1.12. What Is SJR?

The SCImago Institution Rankings (SJR) is an index of weighted citations per article over a period of 3 years. As far as citation-based indicators of prestige go, it is quite good. Citations and documents applied in this formula are based on the Scopus database. The SCImago Journal and Country Rank is a publicly available portal that includes the journals and country scientific indicators developed from the information contained in the Scopus database (Elsevier B.V.). These indicators can be used to assess and analyze scientific domains. Journals can be compared or analyzed separately. Country rankings may also be compared or analyzed separately. Journals can be grouped by subject area (27 major thematic areas), subject category (313 specific subject categories) or by country. Citation data is drawn from over 34,100 titles from more than 5,000 international publishers and country performance metrics from 239 countries worldwide.

The SJCR allows you also to embed journal metrics into your web as a clickable image widget. This platform takes its name from the SCImago

Journal Rank (SJR) indicator (PDF), developed by SCImago from the widely known algorithm Google Page Rank™. This indicator shows the visibility of the journals contained in the Scopus database from 1996. SCImago is a research group from the Consejo Superior *de Investigaciones Científicas* (CSIC), University of Granada, Extremadura, Carlos III (Madrid) and Alcalá de Henares, dedicated to information analysis and retrieval by means of visualization techniques. As well as the SJR Portal, SCImago has developed The Shape of Science, the SIR and the Atlas of Science. The Shape of Science is an information visualization project whose aim is to reveal the structure of science. Its interface has been designed to access the bibliometric indicators database of the SCImago Journal and Country Rank portal. The SIR is a classification of academic and research-related institutions ranked by a composite indicator that combines three different sets of indicators based on research performance, innovation outputs and societal impact measured by their web visibility. The Atlas of Science project proposes the creation of an information system whose major aim is to achieve a graphic representation of Ibero American Science Research. Such representation is conceived as a collection of interactive maps, allowing navigation functions throughout the semantic spaces formed by the maps.

1.1.13. Institute for Scientific Information (ISI)

The *Institute for Scientific Information (ISI)* was an academic publishing service, founded by Eugene Garfield in Philadelphia in 1960. ISI offered scientometric and bibliographic database services. Its specialty was citation indexing and analysis, a field pioneered by Garfield. The ISI server provides indexing of major international journals and proceedings. The author can get information about international journal IF, proceedings (research papers), and information on upcoming events. All the journal pages have pointers to Web pages of the publishers which are integrated into the ISI stream pages.

The purpose is to increase the visibility and ease of use of open access (OA) scientific and scholarly journals. If your journal is indexed and got validated stamp from ISI, you can request for the calculation of IF for your journal. ISI is a service that provides access to quality-controlled OA Journals. The ISI aims to be comprehensive and cover all OA scientific and scholarly journals that use an appropriate quality control system, and it will not be limited to particular languages or subject areas. The aim of the ISI is to increase the visibility and ease of use of OA scientific and scholarly journals thereby promoting their increased usage and impact.

1.1.14. World Science Citation Center

The establishment of Islamic *World Science Citation Center (ISC)* has been approved by the Islamic Conference of the Ministers of Higher Education and Scientific Research (ICMHESR) in a meeting held by ISESCO in 2008 in Baku, capital of Azerbaijan. Since then, Islamic universities and research institutes are required to cooperate with ISC. Based on the ratification of the Development Council of Higher Education in Iran Ministry of Science and Technology, the establishment of ISC has been approved in 2008. Currently, all ISESCO member countries, including Southeast Asia, Arab countries, African non-Arab Islamic countries, Central Asia and the Caucasian Regional countries, and other Islamic countries in the Middle East, and South America, have been covered by ISC. Some of the major deeds of ISC since its opening are as the following: Indexing all prestigious Islamic journals in all subject areas and languages to establish a scientific network among Islamic countries Consistent assessment of Islamic countries' scientific network with the aim of their promotion consistent monitoring of countries' scientific position (specifically Islamic countries) to inform about the gaps, weaknesses, and strengths in diverse scientific spheres Ranking and evaluating world universities, Islamic countries, and other countries as well, based on the approved indicators and providing various scientific and technological reports from countries and specifically, Islamic universities, and holding promoting workshops on research effectiveness in universities and research institutes.

1.2. SCHOLAR METRICS

1.2.1. Google Scholar Metrics

Google Scholar Metrics allows authors to view journal rankings and ratings by various h-indices. Journal ranking can be viewed for the top 100 publications in 9 different languages, or by broad subject research areas and numerous subcategories. Scholar Metrics uses those articles published between 2009 and 2013 and citation from all articles indexed in Google Scholar.

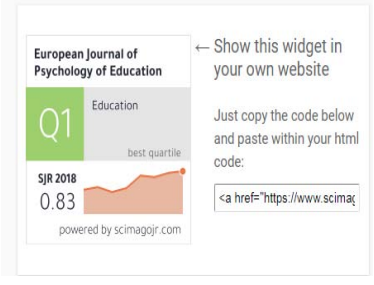
1.2.2. Google Scholar

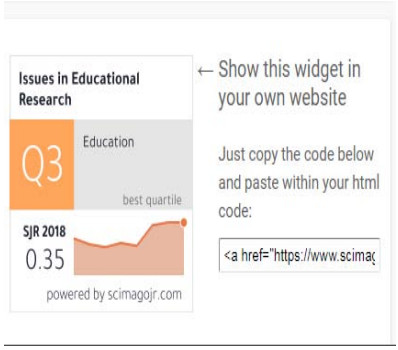
Google Scholar provides a simple way to broadly search for scholarly literature. From one place, you can search across many disciplines and

sources: peer-reviewed papers, theses, books, and articles, from academic publishers, professional societies, preprint repositories, and other scholarly organizations. Google Scholar helps you identify the most relevant research across the world of scholarly research. To get Google Scholar, go to *http://scholar.google.com*. Select settings above search box. Select library links from the left side of the page. You'll be taken to a screen where you can search for your library. If you do not already have one, please register for one, it may take a few minutes on google.com and click on the sign up icon. Scholar webpage www.scholar.google.com and click on my citations. You should fill in the required fields in the registration profile page, and then click Next Step.

1.2.3. What Does It Mean That a Journal Is Ranked Q1 According to SCImago Journal and Country Rank?

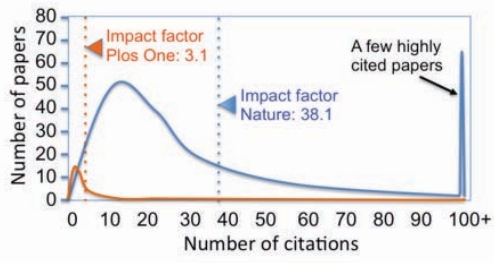
Q1 to Q4 refer to journal ranking quartiles within a sub-discipline using the SJR citation index. Thus, a first quartile journal (i.e., Q1) has an SJR in the top 25% of journals for at least one of its classified sub-disciplines. Journals are often categorized in multiple sub-disciplines, and the quartile can, and often does, vary based on the sub-discipline. The badge shown on SCImago seems to take the most favorable ranking. So, for example, if the journal is ranked in the top quartile for at least one, it will have a badge as a Q1 journal. Q1 presumably means "first quartile."





1.2.4. Citation Impact

Citation impact quantifies the citation usage of scholarly works. It is a result of citation analysis or bibliometric. Among the measures that have emerged from citation analysis are the citation counts for an individual article, an author, and an academic journal.



1.2.5. Citation Index

A citation index is a kind of bibliographic index, an index of citations between publications, allowing the user to easily establish which later documents cite which earlier documents. A form of citation index is first found in 12th-century Hebrew religious literature. Legal citation indexes are found in the 18th century and were made popular by citators such as Shepard's Citations (1873). In 1960, Eugene Garfield's ISI introduced the first citation index for papers published in academic journals, first the SCI, and later the SSCI and the Arts and AHCI. The first automated citation indexing was done by Cite Seer in 1997. Other sources for such data include Google Scholar and Elsevier's Scopus.

1.2.6. Science Citation Index (SCI)

The SCI is a citation index originally produced by the ISI and created by Eugene Garfield. It was officially launched in 1964. It is now owned by Clarivate Analytics (previously the Intellectual Property and Science business of Thomson Reuters). The larger version (science citation index expanded) covers more than 8,500 notable and significant journals, across 150 disciplines, from 1900 to the present. These are alternatively described as the world's leading journals of science and technology, because of a rigorous selection process. The index is made available online through different platforms, such as the WOS and SciSearch. (There are also CD and printed editions, covering a smaller number of journals). This database allows a researcher to identify which later articles have cited any particular earlier article, or have cited the articles of any particular author, or have been cited most frequently. Thomson Reuters also markets several subsets of this database, termed "Specialty Citation Indexes," such as the Neuroscience Citation Index and the Chemistry Citation Index.

1.3. GLOBAL PUBLISHER OF QUALITY ACADEMIC REFERENCES

1.3.1. Wiley

John Wiley and Sons, Inc., commonly known as Wiley, is an American multinational publishing company founded in 1807 that focuses on academic publishing and instructional materials. The company produces books, journals, and encyclopedias, in print and electronically, as well as online products and services, training materials, and educational materials for undergraduate, graduate, and continuing education students.

1.3.2. Springer

Springer is a leading global scientific and medical portfolio, providing researchers in academia, scientific institutions and corporate R&D departments with quality content through innovative information and

services. Springer has one of the strongest STM and HSS eBook collections and archives, as well as a comprehensive range of hybrid and OA journals and books under the Springer Open imprint. Springer is part of Springer Nature, a global publisher that serves and supports the research community. Springer Nature aims to advance discovery by publishing robust and insightful science, supporting the development of new areas of research and making ideas and knowledge accessible around the world. As part of Springer Nature, Springer sits alongside other trusted brands like Nature Research and Palgrave Macmillan.

1.3.3. de Gruyter

Walter de Gruyter GmbH (German: [də ˈgʁɔʏtɐ]; brand name: De Gruyter) is a scholarly publishing house specializing in academic literature. The company has its roots in the bookstore of the *Königliche Realschule* in Berlin, which had been granted the royal privilege to print books by King Frederick II of Prussia in 1749. In 1801 the store was taken over by Georg Reimer. In 1919, Walter de Gruyter (1862–1923) merged it with 4 other publishing houses into the company that became *Verlag Walter de Gruyter and Co* in 1923, and *Walter de Gruyter GmbH* in 2012.

1.3.4. Taylor & Francis

Taylor & Francis Group is an international company originating in England that publishes books and academic journals. It is a division of Informa plc, a United Kingdom-based publisher and conference company. The company

was founded in 1852 when William Francis joined Richard Taylor in his publishing business. Taylor had founded his company in 1798. Their subjects covered agriculture, chemistry, education, engineering, geography, law, mathematics, medicine, and social sciences.

1.3.5. Routledge

Routledge (/ˈraʊtlɪdʒ/) is a British multinational publisher. It was founded in 1836 by Routledge is the world's leading academic publisher in the Humanities and Social Sciences. We publish thousands of books and journals each year, serving scholars, instructors, and professional communities worldwide. Our current publishing program encompasses groundbreaking textbooks and premier, peer-reviewed research in the Social Sciences, Humanities, and Built Environment. We have partnered with many of the most influential societies and academic bodies to publish their journals and book series. Readers can access tens of thousands of print and e-books from our extensive catalog of titles. Routledge is a member of Taylor & Francis Group, an Informa business.

1.3.6. Publons

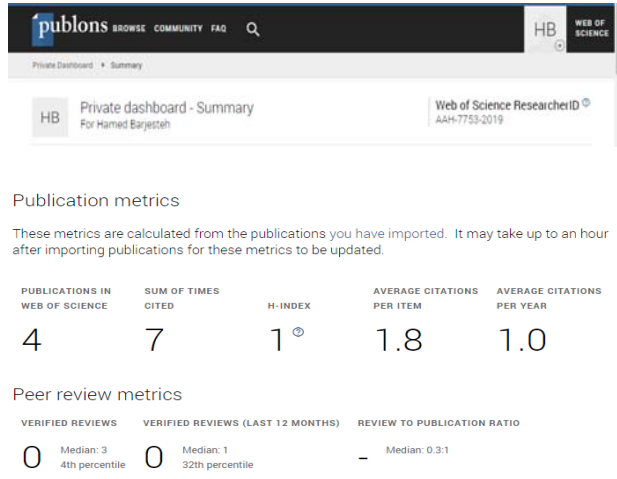
Publons is a commercial website that provides a free service for academics to track, verify, and showcase their peer review and editorial contributions for academic journals. Publons helps you to record, verify, and showcase your peer review contributions for use in promotion applications. You can use Publons to track your publications, citation metrics, peer reviews, and journal editing work in a single, easy-to-maintain profile:

- All your publications instantly imported from WOS, ORCID, or your bibliographic reference manager (e.g., EndNote or

Mendeley).

- Trusted citation metrics, automatically imported from the WOS Core Collection.
- Correct author attribution, with your unique *Researcher ID* automatically added to the publications you claim in WOS collections.
- Your verified peer review and journal editing history, powered by partnerships with thousands of scholarly journals.
- Downloadable record summarizing your scholarly impact as an author and peer reviewer.

Publons' mission is to "speed up science by harnessing the power of peer review." Publons claims that by turning peer review into a measurable research output, academics can use their review and editorial record as evidence of their standing and influence in their field. Publons says its business model is based on partnering with publishers.



1.3.7. SAGE

SAGE Publishing, formerly SAGE Publications, is an independent publishing company founded in 1965 in New York by Sara Miller McCune and now based in Newbury Park, California. It publishes more than 1,000 journals, more than 800 books a year, (Heigham and Croker 2009) [1] reference works and electronic products covering business, humanities, social sciences, science, and medicine. SAGE also owns and publishes under the imprints of Corwin Press (Creswell, 2014) [2] (since 1990), CQ

Press (Creswell, 2014) [3] (since 2008), Learning Matters (Creswell, 2014) [4] (since 2011), and Adam Matthew Digital (since 2012) (Creswell, 2014) [5]. It has more than 1,500 employees in its principal offices in Los Angeles, London, New Delhi, Singapore, Washington DC, and Melbourne.

1.3.8. Emerald Group Publishing

Emerald Group Publishing Limited is a scholarly publisher of academic journals and books in the fields of management, business, education, library studies, health care, and engineering. It was founded in the United Kingdom in 1967 and has its headquarters in Bingley. It operates worldwide with offices and associates in Australia, Brazil, China, the Czech Republic, Dubai, India, Indonesia, Japan, Lithuania, Malaysia, Mexico, Singapore, South Africa, South Korea, Turkey, and the United States.

1.3.9. Oxford University Press (OUP)

Oxford University Press (OUP) publishes the highest quality journals and delivers this research to the widest possible audience. We achieve this by working closely with our society partners, authors, and subscribers in order to provide them with publishing services that support their research needs.

1.3.10. Cambridge University Press

Cambridge University Press dates from 1534 and is part of the University of Cambridge. We further the University's mission by disseminating knowledge in the pursuit of education and research at the highest international levels of excellence.

1.3.11. Pearson Education

Pearson Education is a British-owned education publishing and assessment service to schools and corporations, as well as for students directly. Pearson owns educational media brands including Addison-Wesley, Peachpit, Prentice Hall, e College, Longman, Scott Foresman, and others. Pearson is part of Pearson plc, which formerly owned the *Financial Times*. It was created in July 1998 when Pearson plc purchased the education division of Simon and Schuster (including Prentice Hall and Allyn and Bacon) from Viacom and merged it with its own education division, Addison-Wesley Longman, to form Pearson Education. Pearson Education was rebranded to Pearson in 2011 and split into an International and a North American division.

1.3.12. LinkedIn

LinkedIn (/lɪŋkt'ɪn/) is an American business and employment-oriented service that operates via websites and mobile apps. Founded on December 28, 2002 (Nicholas, 2015) [6], and launched on May 5, 2003 (LinkedIn – About , 2019) [7], it is mainly used for professional networking, including employers posting jobs and job seekers posting their CVs. As of 2015, most of the company's revenue came from selling access to information about its members to recruiters and sales professionals (LinkedIn – About , 2019) [8]. Since December 2016, it has been a wholly-owned subsidiary of Microsoft. As of June 2019, LinkedIn had 630 million registered members in 150 countries. To join LinkedIn and create your profile:

- Navigate to the LinkedIn sign up page;
- Type your first and last name, email address, and a password you'll use;
- Click Join now;
- Complete any additional steps as prompted.

1.3.13. ResearchGate

ResearchGate is a European commercial social networking site for scientists and researchers to share papers and answer questions, and find collaborators. According to a 2014 study by *Nature* and a 2016 article in *Times Higher Education*, it is the largest academic, social network in terms of active users, although other services have more registered users, and a 2015–2016 survey suggests that almost as many academics have Google Scholar profiles. Your weekly stats report shows you which of your research items people are reading… You'll only be able to see who has read your work if they have their profile activity set to be publicly visible.

1.3.14. DeepDyve

DeepDyve is a commercial website launched in late 2010 that provides access to mainly scientific and scholarly articles from a large range of commercial and non-commercial academic publishers. A novel aspect of DeepDyve's business model is that access is on an affordable, online rental basis for web browser viewing, rather than the conventional buy-and-download access already provided by most academic publishers. In an interview with one of the company founders, the article rental concept is mainly pitched as a way of giving researchers unaffiliated with academic libraries, access to otherwise expensive scholarly articles (Meredith, 2013). [1]. Similar to other 'rental' or online access services such as Spotify and Netflix, DeepDyve charges a monthly or annual subscription.

1.4. PREDATORY PUBLISHERS

1.4.1. Hijacked Journals and Predatory Publishers

Journal hijacking refers to the brandjacking of a legitimate academic journal by a malicious third party. Typically the imposter journal sets up a fraud website for the purpose of offering scholars the opportunity to rapidly publish their research online for a fee. The term hijacked journal may refer to either the fraud or the legitimate journal. Similar hijacking can occur with academic conferences as well.

1.4.2. Predatory Publishing

Predatory publishing, sometimes called write-only publishing or deceptive publishing, is an exploitative academic publishing business model that involves charging publication fees to authors without checking articles for quality and legitimacy and without providing the other editorial and publishing services that legitimate academic journals provide, whether OA or not. They are regarded as predatory because scholars are tricked into publishing with them, although some authors may be aware that the journal is poor quality or even fraudulent. New scholars from developing countries are said to be especially at risk of being misled by predatory publishers. According to one

study, 60% of articles published in predatory journals receive no citations over the 5-year period following publication. Predatory journals exploit the OA model by deceptively removing the main value added by the journal (peer review) and parasitize the OA movement, occasionally hijacking or impersonating other journals. A blacklist of predatory publishers is also maintained by Cabell's blacklist.

1.4.3. Brand-Jacking

Brand-jacking is an activity whereby someone acquires or otherwise assumes the online identity of another entity for the purposes of acquiring that person's or business's brand equity. The term combines the notions of 'branding' and 'hijacking' and has been used since at least 2007 when it appeared in a Business Week article. The tactic is often associated with the use of individual and corporate identities on social media or Web 2.0 sites. While similar to cybersquatting, identity theft or phishing in nature and in possible tactics, brand-jacking is usually particular to a politician, celebrity, or business and more indirect in its nature. A brand-jacker may attempt to use the reputation of its target for selfish reasons or seek to damage the reputation of its target for malicious or for political or campaigning reasons. These reasons may not be directly financial, but the effects on the original brand-holder may often include financial loss.

1.4.4. Open Access (OA)

Open access (OA) means more readers, more potential collaborators, more citations for their work, and ultimately more recognition for them and their institution. OA means improved access to research for all. OA journals are universally available. Libraries have no need to subscribe, and researchers can access OA articles freely. OA publishers therefore aim to ensure quality via auditing by registries such as *Directory of Open Access Journals (DOAJ)* and *SciELO* and comply to a standardized set of conditions.

1.4.5. Checklist

For those concerned about the issue of predatory publishing there are number of factors that can be used to assess an individual publisher:

- **Association Membership:** If a journal claims to be supporting OA then check if it is a member of either the Open Access Scholarly Publishers' Association (OASPA) or the DOAJ. It's also worth checking if they belong to the Committee on Publication Ethics (COPE) which maintains a code of conduct for publishers.
- **Transparency:** A good publisher will be open about their practices with contact information and a mission statement easily found on their website. Check the sending address of any emails carefully and look for spelling or grammatical mistakes but be aware of cultural differences that may explain overly formal language. Exercise caution if the publisher appears to focus on a huge range of topics as this may indicate a for-profit rather than for-research approach.
- **Indexing:** Appearing in typical indexes and databases for their associated discipline is a good sign for a publisher. However, remember that there may be perfectly valid reasons why a particular journal is not indexed, such as being very niche or new. Authors could also try searching for other titles from the same publisher to overcome this problem.
- **Quality of Previous Publications:** Assessing previous output from the publisher in question may give an idea of the academic quality of the publication. Check for basic mistakes in spelling or grammar in the work, which may indicate a lack of peer review.
- **Fees:** Any author fees should be clearly explained prior to publication and be easily accessible to potential authors. Be wary of any 'hidden' fees which are raised during the publication process.
- **Copyright:** If the publisher claims to operate under an OA model, then check whether a Creative Commons of other types of open license is being applied. The publisher should also be upfront about the rights the author will retain after publication. It is the author's responsibility to check that these don't conflict with any funder mandates.

- **Peer Reviews:** The process of the individual journal should be clearly highlighted, and guidelines for both authors and reviewers should be easily accessible. Beware of the promise of fast peer review periods as this may indicate a less than through process.
- **Editorial Board:** Members should be listed, along with a named Editor in Chief. Authors should consider if the names mentioned are recognized experts in the field the publisher is covering. It may also be worth checking the web presence of some members to see if their membership is mentioned elsewhere.
- **Website Quality:** Check if the website looks professional but be aware of cultural differences. What may look sophisticated to someone from a large UK university may be out of reach of a smaller publisher in another country.

The next page summarizes the types of papers present in a journal and conference with the national and regional classifications (Figure 1.1).

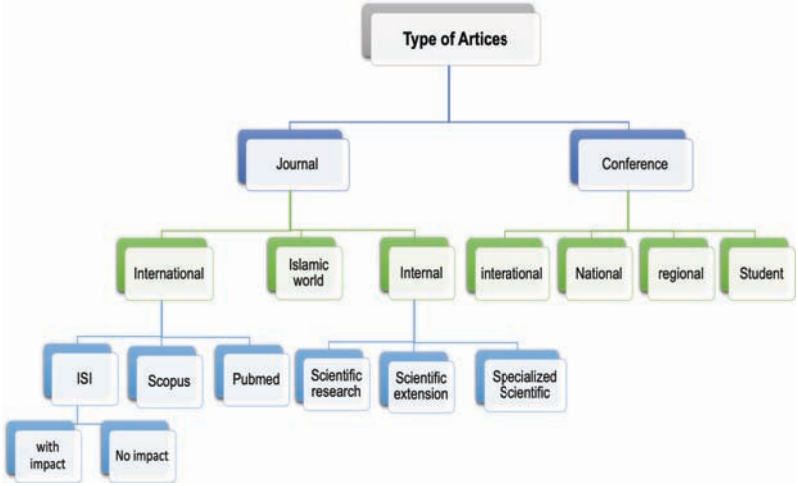


Figure 1.1. Types of papers with different classification at regional, national, and international levels.

CHAPTER 2

KEY CONCEPTS IN WRITING ACADEMIC PAPERS

At the end of this chapter, students will learn:

- Information about Journals;
- How to Submit a Paper;
- Authorship;
- Plagiarism Check;
- Review Process;
- How to Track Papers;
- Decision Letter;
- The Status of their Submission;
- Types of Journal Articles;
- Typical Workflow of a Manuscript from Submission to Publication;
- Sample Forms.

2.1. ABOUT JOURNAL

2.1.1. Aims and Scope

Aims and scope are the journal's purpose or objective. It's what the publication wants to achieve by delivering its content to its readers. Also known as "aim" or "mission," a journal's goals contain many factors you will want to consider when deciding if the journal is right for you.

2.1.2. Editorial Board

The editorial board is a group of experts, usually at a publication, who dictate the tone and direction the publication's editorial policy will take.

2.1.3. Editor-in-Chief

An editor-in-chief, also known as a lead editor or chief editor, is a publication's editorial leader who has final responsibility for its operations and policies. The highest-ranking editor of a publication may also be titled editor, managing editor, or executive editor, but where these titles are held while someone else is editor-in-chief, the editor-in-chief outranks the others. The editor-in-chief gives the ultimate decision whether a submitted manuscript will be published. This decision is made by the editor-in-chief after seeking input from reviewers selected on a basis of relevant expertise. For larger journals, the decision is often upon the recommendation of one of several associate editors who each have responsibility for a fraction of the submitted manuscripts.

Typical responsibilities of editors-in-chief include:

- Ensuring that content is journalistically objective;
- Fact-checking, spelling, grammar, writing style, page design and photos;
- Rejecting writing that appears to be plagiarized, ghostwritten, published elsewhere, or of little interest to readers;
- Evaluating and editing content;
- Contributing editorial pieces;
- Motivating and developing editorial staff;
- Ensuring the final draft is complete;
- Handling reader complaints and taking responsibility for issues after publication;

- For books and journals, cross-checking citations and examining references;
- Working to advance the commercial success of the publication;
- Position may involve recruiting and firing staff.

2.1.4. Director-in-Charge

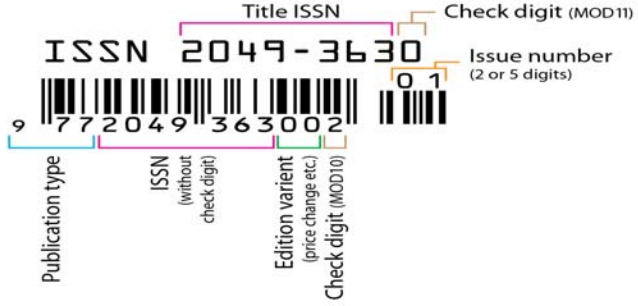
The board of directors is in charge of the management of the company's business; they make the strategic and operational decisions of the company and are responsible for ensuring that the company meets its statutory obligations.

2.1.5. Executive Director

The executive director is responsible for specific programs or services that are assigned to the by the Board of Directors or the managing director. Executive directors are answerable to the board of directors, join the meetings, listen to their views and decide what the best move for a journal is.

2.1.6. ISSN

An ISSN (International Standard Serial Number) is an 8-digit code used to identify newspapers, journals, and periodicals of all kinds and on all media-print and electronic. many serials are published both in print and electronic media. The ISSN system refers to these types as print ISSN (p-ISSN) and electronic ISSN (e-ISSN), respectively.



2.1.7. Indexing and Abstracting

Indexing is the systematic process of arranging of entries designed to enable information users to locate items in a document. It is a process fixed at

providing a guide to the information and knowledge contained in documents. Subject terms or heading and descriptors which described the intellectual content or cover the main theme of documents are carefully chosen in indexing. In essence, indexing is the process that produces entries in an index by analyzing the content of documents, revealing the essential details of the document item in a summarized form and indicating the location of the information; creating substitutes to information items. An abstracting service is a service that provides abstracts of publications, often on a subject or group of related subjects, usually on a subscription basis. An indexing service is a service that assigns descriptors and other kinds of access points to documents. The word indexing service is today mostly used for computer programs, but may also cover services providing back-of-the-book indexes, journal indexes, and related kinds of indexes. An indexing and abstracting service is a service that provides shortening or summarizing of documents and assigning of descriptors for referencing documents.

2.2. JCR INDEX

2.2.1. The Impact Factor (IF)

The impact factor (IF) or journal impact factor (JIF) of an academic journal is a scientometric index that reflects the yearly average number of citations that recent articles published in a given journal received. It is frequently used as a proxy for the relative importance of a journal within its field; journals with higher IFs are often deemed to be more important than those with lower ones.

2.2.2. Immediacy Index

The immediacy index is the average number of times an article is cited in the year it is published:

- The journal Immediacy Index indicates how quickly articles in a journal are cited;
- The aggregate Immediacy Index indicates how quickly articles in a subject category are cited.

The immediacy index is calculated by dividing the number of citations to articles published in a given year by the number of articles published in that year. Because it is a per-article average, the Immediacy Index tends to discount the advantage of large journals over small ones. However, frequently

issued journals may have an advantage because an article published early in the year has a better chance of being cited than one published later in the year. Many publications that publish infrequently or late in the year have low Immediacy Indexes.

2.2.3. Cited Half-Life

This metric refers to the median age of the citations received by a journal during the JCR year. A citation's age is equal to the publication year of the citing item (i.e., JCR year) minus the publication year of the cited item. By definition, half of a journal's earned citations are to items published before the Cited Half-Life, and half are to items published after the Cited Half-Life. JCR caps Cited Half-Life at 10 years—any journal scoring over 10 years will display as >10 in the product. If a journal has a Cited Half-Life of 4, it means the median age of citations is 4 years—half of the citations are to items newer than 4 years, and the other half are older. In the JCR, Cited Half-Life is shown on the Cited Journal Graph as a gray division. So for example, in the journal below, the Cited Half-Life is 9, so half of the citations are to items published after 2007 (9 years back from 2015), and half to items prior to 2007: Cited Half-Life is a good measure if you are interested in looking at a journal and finding out if older or newer material is receiving attention.

2.2.4. Hot Papers

Hot papers are papers that receive a large number of citations soon after publication, relative to other papers of the same field and age. A paper is selected as a Hot Paper if it meets a citation-frequency threshold determined for its field and bimonthly group. Citation-frequency distributions are compiled for each field and cohort. Thresholds are set by finding the closest citation count that would select the top fraction of papers in each field and period. The fraction is set to retrieve about 0.1% of papers. More information about the actual thresholds used in ESI.

2.2.5. Highly Cited Papers

Highly Cited Papers are defined as those that rank in the top 1% by citations for field and year indexed in the. web of science (WOS), which is generally but not always year of publication.

2.2.6. Article Influence

Article Influence is calculated by dividing the *Eigen factor* score by the percentage of all articles recorded in the journal citation reports (JCR) that were published in a specific journal. The Article Influence score measures the average influence per article of the papers in a journal.

2.2.7. Eigenfactor

The Eigenfactor score, developed by Jevin West and Carl Bergstrom at the University of Washington, is a rating of the total importance of a scientific journal. Eigenfactor scores and Article Influence scores are calculated by eigenfactor.org, where they can be freely viewed. Eigenfactor:

- Intended to reflect the influence and prestige of journals;
- Created to help capture the value of publication output vs. journal quality (i.e., the value of a single publication in a major journal vs. many publications in minor journals).

2.2.8. Allegations of Research Misconduct

Research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. Fabrication is making up data or results and recording or reporting them.

2.2.9. Submit Manuscript

2.2.9.1. Manuscript

A manuscript (abbreviated MS for singular and MSS for plural) was, traditionally, any document that is written by hand—or, once practical typewriters became available, typewritten—as opposed to being mechanically printed or reproduced in some indirect or automated way. More recently, the term has come to be understood to further include any written, typed, or word-processed copy of an author's work, as distinguished from its rendition as a printed version of the same. Before the arrival of printing, all documents and books were manuscripts.

2.2.9.2. Title Page

The title page includes Running Head, Page Number, Title of the Paper, the Author's Name (aka: you!), and the Institutional Affiliation. What you include in your cover page depends slightly on which citation style you are using, but the rules are generally the same. For APA cover pages: Include the title of the paper, running head, the author's name, institutional affiliation, and an author's note. APA recommends that your title be no more than 12 words in length and that it should not contain abbreviations or words that serve no purpose. Your title may take up one or two lines. All text on the title page, and throughout your paper, should be double-spaced.

2.2.9.3. Cover Sheet/Cover Letter

The manuscript should have a cover sheet with the following information: Title of the paper, name of author(s); institutional affiliation (department, university, city, and country), a biographical note, and postal addresses; and telephone number, and word counts for the manuscript and for the abstract.

What should be included in a cover letter?

- Editor's name (when known);
- Name of the journal to which you are submitting;
- Your manuscript's title;
- Article type (review, research, case study, etc.);
- Submission date;
- Brief background of your study and the research question you sought to answer;
- Brief overview of methodology used.

Tip: All cover letters should contain these sentences:

- We confirm that this manuscript has not been published elsewhere and is not under consideration by another journal.
- All authors have approved the manuscript and agree with its submission to [insert the name of the target journal].

2.2.9.4. Template

A template is a file that serves as a starting point for a new document. When you open a template, it is pre-formatted in some way. For example, you might use the template in Microsoft Word that is formatted as a business

letter. The term template, when used in the context of word processing software, refers to a sample document that has already some details in place; those can (that is added/completed, removed or changed, differently from a fill-in-the-blank of the approach as in a form) either by hand or through an automated iterative process, such as with a software assistant.

2.2.9.5. Volume (Issue)

Volume typically refers to the number of years the publication has been circulated, and issue refers to how many times that periodical has been published during that year. For example, the April 2011 publication of a monthly magazine first published in 2002 would be listed as, "volume 10, issue 4." Volume numbers in references should be italicized (American Psychological Association [APA], 2020, p. 294), but "do not italicize the issue number, the parentheses, or the comma after the issue number" (APA, 2020, p. 294). For example, in the reference below, the volume number is 49 and the issue number is 4:

Godfrey, D., (2005). Adapting historical citations to APA Style. *Journal of Broadcasting and Electronic Media*, *49*(4), 544–547. https://doi.org/10.1207/s15506878jobem4904_15.

2.2.10. Declaration of Interest

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in two places.

2.2.11. Highlights

Highlights consist of a short collection of bullet points, three to five (three to four for Cell Press articles), that capture the novel results of a research as well as new methods that were used during the study (if any). Highlights offer your paper a considerable advantage in the online world, as they ensure that search engines pick up your article and match it to the right audience. (Nowadays, machines read your work just as often as humans do!). Highlights have been proven to widen the reach of your work and help to ensure that your article is brought to the attention of interested colleagues,

both inside and outside your usual research community. Please have a look at the examples here:

From: Learning and Instruction, Volume 21, Issue 6, December 2011, 746–756

➢ **Highlights:**

- Fading of a script alone does not foster domain-general strategy knowledge.
- Performance of the strategy declines during the fading of a script.
- Monitoring by a peer keeps performance of the strategy up during script fading.
- Performance of a strategy after fading fosters domain-general strategy knowledge.

2.2.12. Attributes

In science and research, an attribute is a characteristic of an object (person, thing, etc.). Attributes are closely related to variables. A variable is a logical set of attributes. Variables can "vary"-for example, be high or low. How high, or how low, is determined by the value of the attribute (and in fact, an attribute could be just the word "low" or "high"). While an attribute is often intuitive, the variable is the operationalize way in which the attribute is represented for further data processing. In data processing, data are often represented by a combination of *items* (objects organized in rows) and multiple variables.

2.2.13. Conflict of Interest and Source of Funding

Conflicts of interest (COIs) often arise in academic publishing. Such conflicts may cause wrongdoing and make it more likely. Ethical standards in academic publishing exist to avoid and deal with COIs, and the field continues to develop new standards. Standards vary between journals and are unevenly applied. According to the International Committee of Medical Journal Editors (ICMJE), "[a]uthors have a responsibility to evaluate the integrity, history, and reputation of the journals to which they submit manuscripts." COIs increase the likelihood of biases arising; they can harm the quality of research and the public good (even if disclosed). COIs can involve research sponsors, authors, journals, journal staff, publishers, and peer reviewers. COIs include financial issues (for example, patent, ownership, stock ownership, consultancies, speaker's fee). Journal of Modern Research

in English Language Studies requires that sources of institutional, and corporate financial support for the work within the manuscript must be fully acknowledged, and any potential COIs noted. The corresponding author signs this form on behalf of all other authors and confirms its validity. The corresponding author also declares that the work is an original composition by the author(s); it has not been previously published; it is not presently under consideration for publication elsewhere.

2.2.14. What Is Third-Party Copyright?

Third party copyright includes material that is not your own work, or material which is not in the public domain. It may also include material that is your own work but to which you do not hold the copyright because of an agreement you have entered into with a publisher or some other party. Copyright material includes text, music scores, computer software, film, animation, music, and images (including drawings, cartoons, paintings, graphs, maps, photographs, tables, etc.). It doesn't matter whether the item comes from a print or physical source or from the internet-copyright will still apply. In most cases, copyright lasts 70 years from the death of the creator. For sending a manuscript, you need to choose one of the following options:

* Please advise on the status of using third-party material in your article:

- I have obtained the appropriate permission for use of third party materials, as required, kept copies of correspondence.
- I am still working through permissions-related questions regarding the use of third-party materials.
- I am not using third-party material for which formal permission is required.

2.2.15. Submission Declaration

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere including electronically in the same form, in English or in any other language, without the written consent of the copyright holder.

2.2.16. ORCID/ˈɔːrkɪd/

Open Researcher and Contributor ID (ORCID) is a non-profit organization dedicated to solving the long-standing name ambiguity problem in scholarly communication by creating a central registry of unique identifiers for individual researchers and an open, transparent linking mechanism between ORCID and other current author identifier schemes. ORCID's vision is a world where all who participate in research, scholarship, and innovation are uniquely identified and connected to their contributions across disciplines, borders, and time. ORCID uses cookies to improve authors' experience and to help ORCID understand how authors use the websites. The *ORCID* addresses the problem that a particular author's contributions to the scientific literature or publications in the humanities can be hard to recognize as most personal names are not unique, they can change (such as with marriage), have cultural differences in name order, contain inconsistent use of first-name abbreviations and employ different writing systems. It provides a persistent identity for humans, similar to that created for content-related entities on digital networks by digital object identifiers (DOIs). The ORCID organization, ORCID Inc., offers an open and independent registry intended to be the *de facto* standard for contributor identification in research and academic publishing. On 16 October 2012, ORCID launched its registry services and started issuing user identifiers.

To learn more about ORCID, please visit http://orcid.org/content/initiative.

2.2.17. Shibboleth

Institutional (Shibboleth) Sign In is a single sign-on log-in system for computer networks and the Internet. It allows people to sign in using just one identity to various systems run by federations of different organizations or institutions. Shibboleth allows direct login to a limited number of library databases from off-campus. It is an alternative to the Off-campus Access Proxy and Campus VPN services.

2.2.18. Open Athens

Open Athens is an authentication system for accessing electronic resources.

Registering for an Open Athens account allows you to access the National Health Library and Knowledge service's electronic resources with one username and password. It is a British not-for-profit information technology services company. Identity provider (IdP) organizations can keep usernames in the cloud, locally or both. Open Athens Accounts:

- Click on the link to Journals and Databases.
- Scroll Down for OpenAthens>Register for OpenAthens.
- Complete the online process using your work e-mail account ending nhs.uk or nhs.net.
- Respond to the e-mail that comes from OpenAthens to create a Password and activate your account.

2.2.19. Digital Object Identifier (DOI)

A DOI is a unique alphanumeric string assigned by a registration agency (the International DOI Foundation) to identify content and provide a persistent link to its location on the Internet. The publisher assigns a **DOI** when your article is published and made available electronically. In most recently published articles, the DOI will be printed with the article itself, usually on the first page somewhere, or in the header or footer. If the DOI isn't on the article, look it up on the website CrossRef.org. You can turn any DOI into a URL by adding http://doi.org/ before the DOI. For example, http://doi.org/10.3352/jeehp.2013.10.3.

2.2.20. APA Format

Author, A. A., & Author, B. B., (Date of publication). Title of article. Title of Journal, volume number, page range. doi:0000000/000000000000 or http://doi.org/10.0000/0000.

2.2.21. Cookie-Web Cookies

A cookie is a message given to a web browser by a web server. The browser stores the message in a text file. The message is then sent back to the server each time the browser requests a page from the server. An HTTP cookie (also called web cookie, Internet cookie, browser cookie, or simply **cookie**) is a small piece of data sent from a website and stored on the user's computer by the user's web browser while the user is browsing. Cookies were designed to be a reliable mechanism for websites to remember information (such as items added in the shopping cart in an online store) or to record the user's browsing activity (including clicking particular buttons, logging in, or recording which pages were visited in the past). They can also be used to remember arbitrary pieces of information that the user previously entered into form fields such as names, addresses, passwords, and credit card numbers. Cookies perform essential functions in the modern web. Perhaps most importantly, authentication cookies are the most common method used by web servers to know whether the user is logged in or not, and which account they are logged in with. Without such a mechanism, the site would not know whether to send a page containing sensitive information or require the user to authenticate them by logging in. The security of an authentication cookie generally depends on the security of the issuing website and the user's web browser, and on whether the cookie data is encrypted. Security vulnerabilities may allow a cookie's data to be read by a hacker, used to gain access to user data, or used to gain access (with the user's credentials) to the website to which the cookie belongs.

2.2.22. International Standard Name Identifier

ISNI is an ISO certified global standard for identifying the millions of contributors to creative works and those active in their distribution, including writers, artists, creators, performers, researchers, producers, publishers, aggregators, and more. It is part of a family of international standard identifiers that includes identifiers of works, recordings, and right holders in all repertoires, e.g., DOI, ISAN, ISBN, ISRC, ISSN, ISTC, and ISWC. ISNI can be assigned to all parties that create, produce, manage, distribute or feature in creative content, including natural, legal, or fictional parties, and is essential to those working in the creative industries for quick and easy identification.

2.2.23. Data Curation

Data curation is the organization and integration of data collected from various sources. It involves annotation and presentation of the data such that the value of the data is maintained over time and the data remains available for reuse and preservation. Data curation includes all the processes needed for principled and controlled data creation, maintenance, and management, together with the capacity to add value to data.

2.2.24. Authorship

All authors should have made substantial contributions to all of the following: (i) the conception and design of the study, or acquisition of data, or analysis and interpretation of data; (ii) drafting the article or revising it critically for important intellectual content; (iii) final approval of the version to be submitted.

2.2.25. Authors' Commitment

Authors' Commitment is agreement between a Journal and author(s). The following conditions are certified and warranted by the Author(s), that: (1) The Work in question is an original composition by the Author(s); (2) The Work in question has not been previously published; (3) The Work in question is not presently under consideration for publication elsewhere.

2.2.26. Corresponding Author

Corresponding author is usually the senior author who provides the intellectual input and designs and approves the protocols to be followed in

the study. He is responsible for the manuscript. The first author is usually the student /researcher who has undertaken the research work.

Corresponding author, First author, and all their responsibilities. The first author is usually the student /researcher who have undertaken the research work. First author is often also referred to as the presenting author. He /She is responsible for doing the research practically along with the co-authors who might assist him/ her in the research work or might be the colleagues from the same workgroup. He is also responsible for preparing the manuscript and analyzing the data.

Corresponding author is usually the senior author who provides the intellectual input and designs and approves the protocols to be followed in the study. He is responsible for the manuscript correction, proof reading, and whole correspondence during the paper submission, handling the revisions and re-submission of revised manuscripts up to the acceptance of the manuscripts. This is the usual practice in most cases. In some cases, when the work is done in collaboration with some other institutes, the actual researcher or the first author and corresponding author remains the same, but co-authors increase depending on the number of helping hands in the paper along with the senior collaborator or senior scientist with whom you liaised with. There are some institutes also where the corresponding author becomes the first author also. The person doing the work or the actual researcher/ Student becomes the second author or even a co-author also. This is, in my opinion, unethical or injustice on the part of the actual researcher/student. But this practice is prevalent in some institutions, and the students are bound to stick to it being the beginners in most cases.

2.2.27. Author Contributions

For transparency, journals encourage authors to submit an author statement file outlining their individual contributions to the paper using the relevant CRediT roles: Conceptualization; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing-original draft; Writing-review and editing. Authorship statements should be formatted with the names of authors first and CRediT role(s) following.

2.2.28. Changes to Authorship

This policy concerns the addition, deletion, or rearrangement of author names in the authorship of accepted manuscripts: Before the accepted manuscript

is published in an online issue: Requests to add or remove an author, or to rearrange the author names, must be sent to the Journal Manager from the corresponding author of the accepted manuscript and must include: (a) the reason the name should be added or removed, or the author names rearranged and (b) written confirmation (e-mail, fax, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed. Requests that are not sent by the corresponding author will be forwarded by the Journal Manager to the corresponding author, who must follow the procedure as described above. Note that: (1) Journal Managers will inform the Journal Editors of any such requests and (2) publication of the accepted manuscript in an online issue is suspended until authorship has been agreed. After the accepted manuscript is published in an online issue: Any requests to add, delete, or rearrange author names in an article published in an online issue will follow the same policies as noted above and result in a corrigendum.

2.2.29. CRediT Author Statement

CRediT (Contributor Roles Taxonomy) was introduced with the intention of recognizing individual author contributions, reducing authorship disputes and facilitating collaboration. The idea came about following a 2012 collaborative workshop led by Harvard University and the Welcome Trust, with input from researchers, the ICMJE and publishers, including Elsevier, represented by Cell Press. CRediT offers authors the opportunity to share an accurate and detailed description of their diverse contributions to the published work:

- The corresponding author is responsible for ensuring that the descriptions are accurate and agreed by all authors;
- The role(s) of all authors should be listed, using the relevant above categories;
- Authors may have contributed in multiple roles;
- CRediT in no way changes the journal's criteria to qualify for authorship.

CRediT statements should be provided during the submission process and will appear above the acknowledgment section of the published paper as shown further below (Table 2.1).

Table 2.1. CRediT Author Statement

Term	Definition
Conceptual-ization	Ideas; formulation or evolution of overarching research goals and aims
Methodology	Development or design of methodology; creation of models
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components
Validation	Verification, whether as a part of the activity or separate, of the overall replication/ reproducibility of results/experiments and other research outputs
Formal analysis	Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools
Data curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse
Writing-original draft	Preparation and/or presentation of the published work, specifically writing the initial draft (including substantive translation)
Writing-review and editing	Preparation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision-including pre-or post-publication stages
Visualization	Preparation and/or presentation of the published work, specifically visualization/ data presentation
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team
Project administration	Management and coordination responsibility for the research activity planning and execution

Funding acquisition	Acquisition of the financial support for the project leading to this publication.

2.2.30. Publication Rate

Publication Rate or Journal Acceptance Rate is the percentage of manuscripts accepted for publication, compared to all manuscripts submitted.

2.2.31. Author Rights Reversion

A right of reversion is a contractual provision that permits authors to work with their publishers to regain some or all of the rights in their books when certain conditions are met (see at the end of this chapter for a sample of Reversion letter).

2.3. PLAGIARISM CHECK

2.3.1. Plagiarism

Imitation may be the sincerest form of flattery, but in professional writing imitation without appropriate attribution is not acceptable. Authors should cite the sources of their ideas and methods as well as put quotation marks around phrases taken from another source. The change or reordering of a few words in a sentence does not relieve authors of the obligation to quote and recognize appropriately the source of their material. As recent cases inform us, authors need to be scrupulous in their note taking (especially in the electronic form) and careful about using those notes in their own manuscripts (Figure 2.1).

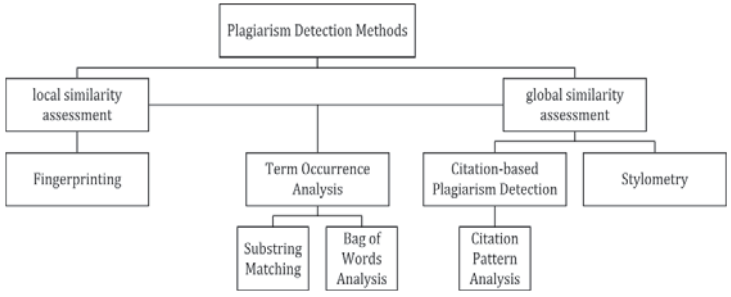


Figure 2.1. Plagiarism decision methods.

To avoid plagiarism, you need to be aware of what it is, and have good writing skills and referencing knowledge. You need to be able to:

- Paraphrase and summarize;
- Know when to quote a source and when to paraphrase it;
- Link information from sources with your own ideas;
- Correctly use referencing conventions.

When you quote a source, you use an extract exactly as it was used in/by the source. You indicate a quote by using quotation marks or indenting the text for long quotes. When you paraphrase or summarize, you put the author's ideas in your own words. However, you still need to attribute the idea to the author by including a reference. It's usually better to paraphrase than quote, as it shows a higher level of thinking and writing skills. To rephrase ideas, you need a large vocabulary of formal and technical words for the subject matter, as well as grammatical flexibility.

2.3.2. Maximum of Plagiarism Allowed in a Review Paper

Plagiarism is a very good reason for the rejection of manuscripts. However, when editors receive manuscripts, they frequently check the content with plagiarism software. The software highlights sections that also appear in other sources and gives a percentage of suspicious sections (e.g., similarity index). It is then for the editor to decide whether this is real plagiarism or probably accidental or just an issue of the software (which might not see that some sections are direct quotes). There is no official rule which percentage makes a manuscript unacceptable but anything above 10% will most likely be regarded as highly suspicious and probably rejected right away.

2.3.3. Turnitin

Turnitin is an American commercial, Internet-based plagiarism detection service which is a subsidiary of Advance. Founded in 1997 and high schools typically buy licenses to use the software as a service (SaaS) website, which checks submitted documents against its database and the content of other websites with the aim of identifying plagiarism. Results can identify similarities with existing sources, and can also be used in formative assessment to help students learn to avoid plagiarism and improve their writing.

Students may be required to submit work to Turnitin as a requirement of taking a certain course or class. The software has been a source of

controversy, with some students refusing to submit, arguing that requiring submission implies a presumption of guilt. Some critics have alleged that the use of this proprietary software violates educational privacy as well as international intellectual property laws, and exploits students' works for commercial purposes by permanently storing them in Turnitin's privately held database.

How do I create an account in Turnitin?

- Note the relevant Turnitin class ID and password from your StudyDesk course;
- Go to the Turnitin website (www.turnitin.com);
- Click Create account;
- Select to create a student account;
- Enter the Class ID and other information;
- Read the User agreement and if you agree, click the I agree… Create Profile button.

2.3.4. Grammarly

Grammarly is an app that automatically detects potential grammar, spelling, punctuation, word choice, and style mistakes in writing. Grammarly's algorithms flag potential issues in the text and suggest context-specific corrections for grammar, spelling, wordiness, style, punctuation, and plagiarism. Grammarly is a Ukrainian technology company that develops a digital writing tool using artificial intelligence and natural language processing. Website www.grammarly.com.

2.3.5. Falsification

Falsification is "manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record." Plagiarism is "the appropriation

of another person's ideas, processes, results, or words without giving appropriate credit."

2.3.6. Self-Citation

A self-citation is a reference to an article from the same journal. Self-citations can make up a significant portion of the citations a journal gives and receives each year.

2.4. REVIEW PROCESS

2.4.1. Initial Check

This step is usually performed by the non-scientific staff of the journal. It may include: for example:

- Checking for missing or broken files;
- Checking compliance with length requirements, if any;
- Checking central formatting requirements, e.g., line numbers, if required by the journal;
- A plagiarism check;
- Excluding manuscripts of very low quality, such as automatic translations or manuscripts with very poor language.

Also known as: technical check, initial QC (AIP), admin checklist (IEEE), awaiting editorial office processing (Scholar One), quality check (NPG).

2.4.2. Assigned to the Editor (NPG)

Based on the topic of the manuscript and suggestions by the authors, an editor is assigned to handle the manuscript. Depending on the journal, the assignment may be done by technical staff, the journal's chief editor, or automatic by submission category or author suggestion. With some journals, editors are invited and not assigned. *Also known as: with editors (APS), editor assigned (Editorial Manager, AIP), AE assignment (IEEE).*

2.4.3. Peer Review Process

Peer review is the evaluation of work by one or more people with similar competencies as the producers of the work (peers). It functions as a form of self-regulation by qualified members of a profession within the relevant

field. Peer review methods are used to maintain quality standards, improve performance, and provide credibility. In academia, scholarly peer review is often used to determine an academic paper's suitability for publication. *Also known as: with reviewers, with referees, under review, awaiting referee assignment, awaiting referee reports, awaiting reviewer scores, reviewers assigned, manuscript assigned to peer-reviewed/s (NPG)*. Figure 2.2 summarizes the review process schematically.

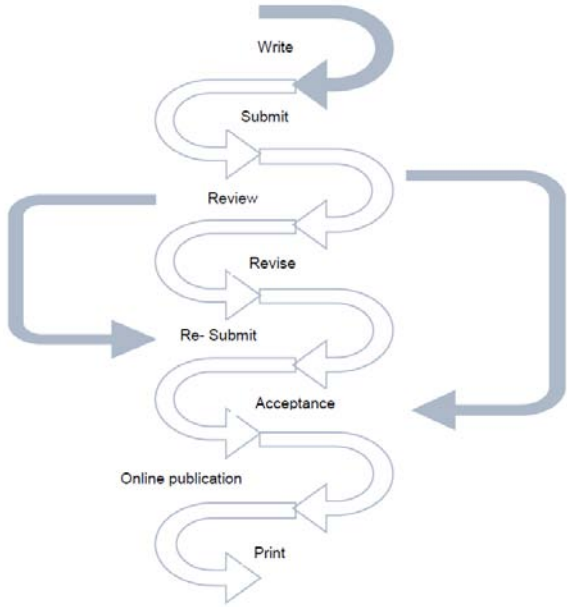


Figure 2.2. The peer-review process.

2.4.4. Single Blind Review

In this type of review, the names of the reviewers are hidden from the author. This is the traditional method of reviewing and is the most common type by far. Points to consider regarding single-blind review include:

- Reviewer anonymity allows for impartial decisions-the reviewers should not be influenced by the authors;
- Authors may be concerned that reviewers in their field could delay publication, giving the reviewers a chance to publish first;
- Reviewers may use their anonymity as justification for being unnecessarily critical or harsh when commenting on the authors' work.

2.4.5. Double-Blind Review

Double-blind review means the identities of the authors are concealed from the reviewers, and vice versa. To facilitate this, please include the following separately: *Title page (with author details):* This should include the title, authors' names, affiliations, and any Declaration of Interest statement, and a complete address for the corresponding author including an e-mail address. *Blinded manuscript (no author details):* The main body of the paper (including the references, figures, and any acknowledgments) should not include any identifying information, such as the authors' names or affiliations.

2.4.6. Triple-Blind Review

With triple-blind review, reviewers are anonymous, and the author's identity is unknown to both the reviewers and the editor. Articles are anonymized at the submission stage and are handled in such a way to minimize any potential bias towards the author(s). However, it should be noted that:

- The complexities involved with anonymizing articles/authors to this level are considerable.
- As with double-blind review; there is still a possibility for the editor and/or reviewers to correctly divine the author's identity from their style, subject matter, citation patterns, or a number of other methodologies.

2.4.7. Open Review

Open peer review is an umbrella term for many different models aiming at greater transparency during and after the peer-review process. The most common definition of open review is when both the reviewer and author are known to each other during the peer review process. Other types of open peer review consist of:

- Publication of reviewers' names on the article page;
- publication of peer review reports alongside the article, whether signed or anonymous;
- publication of peer review reports (signed or anonymous) together with authors' and editors' responses alongside the article;
- Publication of the paper after a quick check and opening a discussion forum to the community who can comment (named or anonymous).

2.4.8. Suggested Reviewers

Journals ask you to suggest reviewers because you know better than anyone else who could be interested in your work. For the journal, this means more chances of finding willing reviewers.

2.4.9. Opposing Reviewer

Some journals give you the option to name reviewers that you don´t want to review your paper. Our advice is to not identify opposed reviewers, unless absolutely necessary. The only strong reason to exclude someone is if your work is focused on criticizing his or her work (I don't mean a simple critique in the literature review, but a case where your entire paper is directed against the work or thesis of someone else).

➢ **Track Paper/Decision Letter**

*Req.	Recommendation
✓	Accept
	Minor Revision
	Major Revision
	Reject and Resubmit
	Reject

All submissions are evaluated by a member of the Editorial Board. In some cases, multiple rounds of review are necessary before an article is accepted. Authors may receive the following different types of decision letters:

- The paper is accepted for publication without any additional changes and will be sent to production for processing.
- The paper must be revised in response to the comments from the editor or reviewers. In this case, the decision regarding acceptance will be made after the editor and reviewers have evaluated the point-by-point response submitted by the authors.
- The majority of revised submissions will be returned to the reviewers, but in some instances, we will request additional minor revisions that will not require review. In these cases, the editor or a member of the Editorial Board will evaluate the revision.
- For some revisions, the editor will state that a revised paper is unlikely to be accepted. In these cases, it may be worthwhile for the authors to consider submission elsewhere.

- The paper is rejected for publication. Rejections can occur when the Board, an editor, or at least one reviewer finds the paper not appropriate for publication. The decision letter will explicitly state whether a resubmission would be considered. Resubmissions must be invited by the editor or Editorial Board, and should be submitted as a new submission. Resubmissions must include a resubmission/revision cover letter that references the original manuscript tracking number and outlines the changes made to the manuscript.
- Minor revision means that your paper accepted by about 70% but not final acceptance until you fix further comments. Time varies from journal to others, but within one month.

2.4.10. Desk Rejection

A desk reject means that the program chairs (or editors) reject a paper without consulting the reviewers. This is done for papers that fail to meet the submission requirements, and which hence cannot be accepted. Filtering out desk rejects in advance is common practice for both conferences and journals. the Editor must identify among submitted papers those which have little chance to pass the hurdle of the first-round review and eventually move forward to acceptance. To do so, the Editor answers the following questions which represent a first screening:

- Does the topic fit within the journal's scope?
- Is the content (literature review, conceptual development, methodology, analysis, conclusions) adequate (i.e., it does not reflect major flaws or gaps) and indicative of a potential contribution to the literature?
- Are the format and grammar consistent with the journal's policies and expectations?

2.4.11. Under Review

The "out for review" or "under review" status indicates that your paper has passed the initial admin check and is now being scrutinized by peer reviewers. The fact that your paper has been considered for and sent for peer review is a good sign!

- **External Reviews Completed, Waiting for Editorial Decision:** Some external reviews are in, please wait patiently for the editor to make a decision.

- **Awaiting Author Revision-See Editor/Author Email Log:** A decision has been made and we are waiting for a revision/ response to reviewer comments from the author.
- **In Editing:** Manuscript has been accepted and is currently in copyediting, typesetting or proofreading. Click on the link and check the Editing tab to see if we are awaiting a response from authors, either in the context of copyediting or proofreading (approving final galleys).

2.4.12. Redundant Publication

Duplicate/fragmented publication, multiple publications, or redundant publication refers to publishing the same intellectual material more than once, by the author or publisher. It does not refer to the unauthorized republication by someone else, which constitutes plagiarism, copyright violation, or both.

2.5. THE STATUS OF MY SUBMISSION

2.5.1. Incomplete

The manuscript has not been submitted yet, either because not all submission steps have been completed, or because the submission fee (if any) has not been paid yet.

2.5.2. Unassigned

Currently awaiting assignment to an editor.

2.5.3. Article Withdrawal

Only used for Articles in Press which represent early versions of articles and sometimes contain errors, or may have been accidentally submitted twice. Occasionally, but less frequently, the articles may represent infringements of professional ethical codes, such as multiple submission, bogus claims of authorship, plagiarism, fraudulent use of data or the like.

2.5.4. Articles in Press

Articles in Press (articles that have been accepted for publication but which have not been formally published and will not yet have the complete volume/issue/page information) that include errors, or are discovered to

be accidental duplicates of other published article(s), or are determined to violate our journal publishing ethics guidelines in the view of the editors (such as multiple submission, bogus claims of authorship, plagiarism, fraudulent use of data or the like), may be "Withdrawn."

2.5.5. Copy Editing and Typesetting

The article is copy-edited and typeset by the publisher. Occasionally, requests to the authors may occur at this stage, e.g., due to low-quality figures. For some journals, a pre-copy-editing version of the manuscript will be put online at this point under a category like *Just Accepted,* with a warning that the current version has not yet been copy-edited and may change further before publication. Also known as: *in production, in press.* Typical duration**:** This mostly depends on the publisher's backlog-between a few workdays to over a year, roughly correlated with the length of the publication delay.

2.5.6. Article Retraction

Infringements of professional ethical codes, such as multiple submission, bogus claims of authorship, plagiarism, fraudulent use of data or the like. Occasionally a retraction will be used to correct errors in submission or publication. The retraction of an article by its authors or the editor under the advice of members of the scholarly community has long been an occasional feature of the learned world. Standards for dealing with retractions have been developed by a number of library and scholarly bodies, and this best practice is adopted for article retraction.

2.5.7. Article Removal: Legal Limitations

In an extremely limited number of cases, it may be necessary to remove an article from the online database. This will only occur where the article is clearly defamatory, or infringes others' legal rights, or where the article is, or we have good reason to expect it will be, the subject of a court order, or where the article, if acted upon, might pose a serious health risk. In these circumstances, while the metadata (Title and Authors) will be retained, the text will be replaced with a screen indicating the article has been removed for legal reasons.

2.5.8. Article Replacement

In cases where the article, if acted upon, might pose a serious health risk, the authors of the original article may wish to retract the flawed original and replace it with a corrected version. In these circumstances the procedures for retraction will be followed with the difference that the database retraction notice will publish a link to the corrected re-published article and a history of the document.

2.6. DECISIONS

2.6.1. Gallery Proof

In printing and publishing, proofs are the preliminary versions of publications meant for review by authors, editors, and proofreaders, often with extra-wide margins. Galley proofs may be uncut and unbound, or in some cases electronically transmitted. They are created for proofreading and copyediting purposes, but may also be used for promotional and review purposes.

2.6.2. Submissions with a Decision

2.6.3. What Does DOI Stand for?

DOI, is a string of numbers and symbols used to permanently identify an article or document and link to it on the web. A DOI will help your reader easily locate a document from your citation. The full DOI, e.g., https://doi.org/10.5555/12345678. Resource URL-The URL that Crossref has on file (stored in our system). This is where the browser is initially redirected. Destination URL-The URL that we end up at if we follow all the redirects.

2.6.4. What Is a Disclaimer Letter?

A disclaimer is generally any statement intended to specify or delimit the scope of rights and obligations that may be exercised and enforced by parties

in a legally recognized relationship.

2.6.5. Affiliation

An affiliated school or affiliated college is an educational institution that operates independently, but also has a formal collaborative agreement with another, usually larger institution that may have some level of control or influence over its academic policies, standards or programs.

2.6.6. Journal Ranking

Journal ranking is widely used in academic circles in the evaluation of an academic journal's impact and quality. Journal rankings are intended to reflect the place of a journal within its field, the relative difficulty of being published in that journal, and the prestige associated with it. They have been introduced as official research evaluation tools in several countries.

2.6.7. Copyright vs. Copy Left

Copyrights exist in order to protect authors of documentation or software from unauthorized **copying** or selling of their work. A Copy left, on the other hand, provides a method for software or documentation to be modified, and distributed back to the community, provided it remains Libre. Copy left, distinguished from copyright, is the practice of offering people the right to freely distribute copies and modified versions of a work with the stipulation that the same rights be preserved in derivative works created later.

2.6.8. Reviewing vs. Peer Interviewing

Peer reviewing is where a research application or research report is read and commented on by people with similar interests and expertise to those who wrote the application or report. It helps to check the quality of a report or research application. Peer reviewers might be members of the public, researchers, or other peers. Members of the public who act as peer reviewers may choose to comment on: whether the research addresses an important and relevant question; the methods used by researchers the quality of public involvement in the research. *Peer interviewing* is where people are interviewed by others who have a similar experience to them-their peers. For example, in a study to find out about children's experiences of after school care, children with experience of using after school care may act as peer interviewers, asking other children about their experience. Some researchers

believe that this kind of interviewing enables people to talk more freely about their experience.

2.7. TYPES OF JOURNAL ARTICLES

2.7.1. Academic Journal

An academic or scholarly journal is a periodical publication in which scholarship relating to a particular academic discipline is published. Academic journals serve as transparent forums for the presentation, scrutiny, and discussion of research. They are usually peer-reviewed or refereed.

2.7.2. Research Paper

2.7.2.1. Original Article

This is the most common type of journal manuscript used to publish full reports of data from research. It may be called a *Research Article, Research,* or just *Article,* depending on the journal. The Original Research format is suitable for many different fields and different types of studies. It includes full Introduction, Methods, Results, and Discussion sections.

2.7.2.2. Letter/ Short Reports

The length is less than 600 words including tables and figures. Authors should comment to recently published articles in a Journal or author's response to such comment. Abstract and keywords are not required. These papers communicate brief reports of data from original research that editors believe will be interesting to many researchers, and that will likely stimulate further research in the field. As they are relatively short the format is useful for scientists with results that are time sensitive (for example, those in highly competitive or quickly-changing disciplines). This format often has strict length limits, so some experimental details may not be published until the authors write a full *Original Research* manuscript. These papers are also sometimes called *Brief communications*.

2.7.2.3. Review Articles

A review article is an article that summarizes the current state of understanding on a topic. A review article surveys and summarizes previously published

studies, rather than reporting new facts or analysis. Review articles are sometimes also called survey articles or, in news publishing, overview articles. Academic publications that specialize in review articles are known as review journals. Reviews commonly cite approximately 100 primary research articles. A review paper may be a narrative review, a systematic review or a meta-analysis. A narrative review is like a book chapter: it explains a topic in detail based on previously published research. A systematic review systematically searches the previously published research studies for the answers to a specific question.

Note: *If you would like to write a Review but have not been invited by a journal, be sure to check the journal website as some journals to not consider unsolicited Reviews. If the website does not mention whether Reviews are commissioned it is wise to send a pre-submission enquiry letter to the journal editor to propose your Review manuscript before you spend time writing it.*

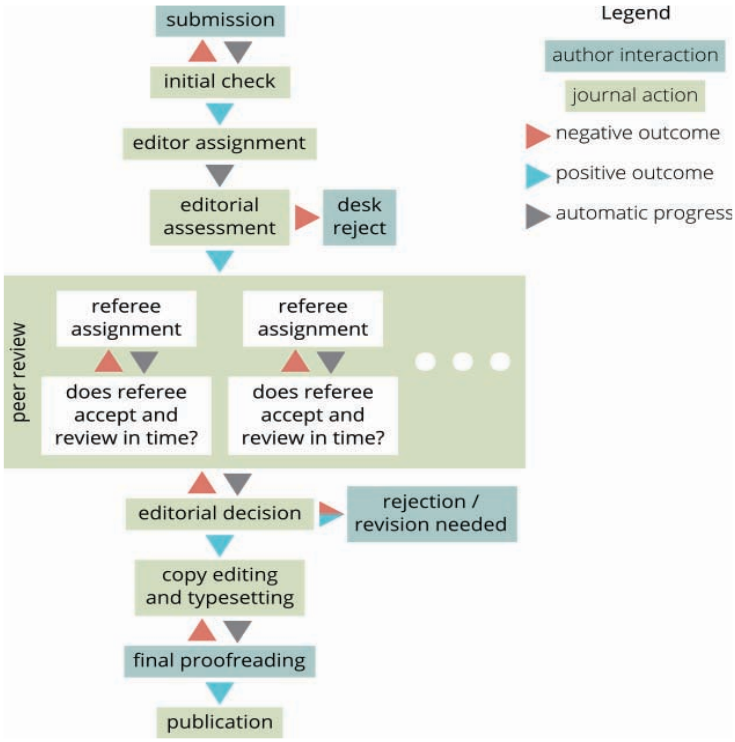
2.7.3. Book Review

A book review is a form of literary criticism in which a book is merely described or analyzed based on content, style, and merit. A book review may be a primary source, opinion piece, summary review or scholarly review. Books can be reviewed for printed periodicals, and newspapers, as school work, or for book web sites on the Internet. A book review's length may vary from a single paragraph to a substantial essay. Such a review may evaluate the book on the basis of personal taste. Reviewers may use the occasion of a book review for an extended essay that can be closely or loosely related to the subject of the book, or to promulgate their own ideas on the topic of a fiction or non-fiction work.

2.7.4. Case Studies

These articles report specific instances of interesting phenomena. A goal of Case Studies is to make other researchers aware of the possibility that a specific phenomenon might occur. This type of study is often used in medicine to report the occurrence of previously unknown or emerging pathologies.

2.7.5. Typical Workflow of a Manuscript from Submission to Publication (Rejection)



2.8. SAMPLE FORMS

1. Sample Form for Cover Sheet/Cover Letter:

Cover letter for manuscript submission

September 12, 2019

Dear Editor,

I am enclosing a submission to the Journal of Poetry and Psychology entitled "xxxxxxxxxxxx." The manuscript is xx pages long and includes xxx tables and xxx figures. I wish for the manuscript to be given a masked review. I request that my ex-partner [xxxx] not be one of the reviewers. Although they are an expert in the area, I do not believe that they would be able to provide an unbiased review at this time. My coauthors and I do not have any COIs to disclose. APA ethical standards were followed in the conduct of the study. All of the authors listed in the byline have agreed to the byline order and

to submission of the manuscript in this form. I have assumed responsibility for keeping my coauthors informed of our progress throughout the editorial review process, the content of the reviews, and any revisions made to the manuscript. I understand that, if accepted for publication, a certification of authorship form will be required that all coauthors will sign.

Sincerely,

Xxxxxxx

2. Cover Letter for Revised Manuscript:

December 12, 2020
Dear Dr. xxxxx,

On behalf of my coauthors, I would like to thank you for the opportunity to revise and resubmit our manuscript xxxxxx, entitled "xxxxxxxxxxx." We found the reviewers' comments to be helpful in revising the manuscript and have carefully considered and responded to each suggestion. In the majority of cases we were successful in incorporating the reviewers' feedback into our revised manuscript. We have included a response to reviewers in which we address each comment the reviewers made. In our response to reviewers, the reviewers' comments are numbered, and our responses follow below, in blue, and are prefaced by "Author response." Corresponding changes are highlighted in the manuscript text in the revised file. Thank you again for your consideration of our revised manuscript.

Sincerely,

Xxxxx

3. Sample Form for Conflict of Interest:

i. Conflict of Interest: A (author name) serves as a consultant to Z (entity name); B's spouse is chairman of Y; C received a research grant from X; D received lecture fees from V; E holds a patent on U; F has been reimbursed by T for attending several conferences; G received honoraria for writing promotional material for S; H has no conflict of interest.

Corresponding author's full name:	Email address:
Affiliation:	Telephone number:
Manuscript title:	
Have authors received any financial support from a third party (institutional, private, corporate, etc) to prepare their manuscript (including research plan, data analysis, etc)?	Yes□ No □
Are the authors busy inventing any work which may be related to the present study?	Yes□ No □
Can readers have access to additional information about the present work through contacting the authors?	Yes□ No □
Corresponding author's full name: _____ Date: _____ signature: _____	

4. Sample CRediT Author Statement:

Zhang San: Conceptualization, Methodology, and Software **Priya Singh:** Data curation, Writing-Original draft preparation. **Wang Wu:** Visualization, Investigation. ***Jan Jansen:*** Supervision.: **Ajay Kumar:** Software, Validation, **Sun Qi:** Writing-Reviewing and Editing.

5. Sample Form for Declaration of Interests:

To: Supervisor, Incorporated Management Committee of XXX School.

I hereby declare that:

□ I have no pecuniary or other personal interest, direct or indirect, in any matter that raises or may raise a conflict with my duties as a manager of the Incorporated Management Committee of XXX School.

□ I have pecuniary or other personal interest, direct or indirect, in certain matter that raises or may raise a conflict with my duties as a manager of the Incorporated Management Committee of XXX School. The particulars of such matter are stated below:

……

……

I also acknowledge that I shall make another declaration to state any change in any matter contained in this declaration within one month after the change occurs and shall provide further information on the particulars contained in this declaration if so required by the Incorporated Management Committee of XXX School.

Signature :
Name :

Date :
Note :
(a) Please put a "✓ " in the appropriate box.
(b) Please continue on supplementary sheet if necessary.

6. Cover Letter Template:

[My Name, Address]

[Dr. xx Editor-in Chief]

[August 3, 2020]

Dear [Dr. Editorian]:

I am pleased to submit an original research article entitled [xxxxxxxx] for consideration for publication in [the *Journal of Science*]. In this manuscript, I show that [xxx **list a few important results)**]. I believe that this manuscript is appropriate for publication by [the *Journal of Science*] because it… **[specific link to the journal's aims and scope]**. This manuscript has not been published and is not under consideration for publication elsewhere. We have no COIs to disclose, but we do respectfully request that [xxxxxxxxxxx] not review our manuscript. If you feel that the manuscript is appropriate for your journal, we suggest the following reviewers:

[List reviewers and contact info, if requested by the journal]

Thank you for your consideration!

Sincerely,

[Your Name, PhD Professor, Department]

2.8.1. Reversion of Rights Letter

Reference is made to an agreement dated _____(the "Agreement") between you (the "Author") and _____(the "Publisher") for a work entitled _____ (the "Work'). This letter, when signed by the parties hereto, will constitute the official termination of the Agreement and the return to the Author of all rights in the Work granted in the Agreement, subject to any existing licenses and/or agreements previously granted, including any renewals and extensions as defined below. It is understood and agreed that, in the event that another publisher or party agrees with the Author re-republish the Work ("new publication") and wishes to offset the Publisher's printed edition of the Work, then the Author agrees to obtain the Publisher's written permission at terms to be mutually agreed upon prior to a new publication. Furthermore, it is agreed that the above-mentioned edition shall not include the use of

any trademark, trade-name, logo or imprint of the Publisher, but the Author is hereby required to list the original Publisher on the copyright page of the new publication. Author and Publisher agreed that Publisher makes no warranties or representations with respect to Author's right or another publisher's right to republish in the new publication any elements presently included in Publisher's edition of the Work, and Publisher accept no liability hereafter. Author is solely responsible for clearing all necessary licenses, releases, and permissions for the new publication. The Publisher retains the right to sell off, dispose of or destroy any books previously printed, or those in the manufacturing process subject to the payment of royalties under the Agreement. It is understood and agreed that, upon termination, neither the Author nor the Publisher will have any further obligation to each other with respect to the Agreement, except as specified below, and except that all representations, warranties, and indemnities of the Author pursuant to the foregoing Agreement shall remain in full force and effect. Please sign and return both copies of this letter. A fully executed copy will be returned for your records.

Sincerely,

Agreed: _____ Author

Agreed: _____

on behalf of the Publisher and Title

2.8.2. Sample Form for Disclaimer Letter

2.8.3. Disclaimers

Disclaimers Responsibility for the accuracy of quoted and referenced material rests solely with the author(s) of the item in which such material appears. Opinions expressed in these articles are those of the authors and do not necessarily reflect the views of the editors.

CHAPTER 3

APA MANUAL 7TH EDITION: THE MOST NOTABLE CHANGES

At the end of this chapter, students will learn:

- APA versus MLA differences;
- APA Headings and Subheadings;
- APA Title Page (Cover Page);
- Writing Numbers: Words and Numerals;
- Table and Figure Components;
- Paragraph Indentation;
- References and In-Text Citations IN APA Style;
- The Basics of APA In-Text Citation;
- Punctuation in Citations;
- APA 6th/7th Comparison Quick Guide;
- Sample Experiment Paper APA 7th Edition.

3.1. APA VERSUS MLA

3.1.1. APA

The American Psychological Association (APA) style is, originally, a set of rules that authors use when submitting papers for publications in the journals of the APA. Established in 1929, the style has since been used to guide research writers and help them achieve – through the use of established standards for language, the construction of correct reference citations, the avoidance of plagiarism, the proper use of headers, among many others – "minimum distraction and maximum precision." As a complete style and guideline for writing, the APA is a valuable tool for writing scientific papers, laboratory reports, and papers covering topics in the field of psychology, education, and other social sciences. The APA style allows for in-text citations, direct quotations, and endnotes and footnotes. It is also enables the author to use the past tense of verbs in the reportage. Standards of the APA style include:

- Bibliographic list of references;
- Alphabetical order by author in the bibliographic list, then chronological by work;
- Referenced authors organized in the bibliographic list by last name, first initial, then middle initial;
- Italicized titles of periodicals listed in the bibliography, with the words of the title capitalized;
- Titles of books capitalized according to "sentence-style" capitalization;
- In-text citations in parenthesis, with the author's last name, year of publication, and page number included (Smith, 1988. p. 4);
- Double-spaced lines;
- Page numbers-plus the shortened title of the work-placed in the upper right of every page;
- Title centered an inch below the top of the page;
- Double-spaced footnotes/endnotes, used sparingly for non-crucial information, and which are subscripted with a number that relates to the footnote.

3.1.2. MLA

The modern language association (MLA) style is the leading style of documentation for literary research, as well as academic papers in the humanities field. It follows a specific set of rules for formatting manuscripts, and is considered, along with the APA style, a standardized reference format in college. Compared to the APA style, however, the MLA style focuses on the citation of books, anthologies, literary works, audio-visual material, multimedia, and similar works with much more detail. Also, unlike the APA style, the present tense of verbs is most commonly used in the MLA style. Other MLA standards include:

- Bibliographic list of works cited;
- Alphabetical order by author in the bibliographic list, then alphabetical by work;
- Centered titles an inch below the tops of the page;
- Referenced authors/names organized in the bibliographic list by last name, first name, then middle initial;
- In-text citations in parenthesis, with only the author's last name and page number included (Smith 4);
- Double-spaced lines, but with no extra line breaks between each citation;
- Footnotes (superscripted) also used to provide non-essential information.

3.1.3. Major Citation Styles

There are three major citation styles used in academic writing:

- **Modern Language Association (MLA):** Used by the vast majority of high schools, colleges, and in literature, linguistics, and the humanities programs;
- **American Psychological Association (APA):** Widely used in the scientific community; and
- **Chicago Manual of Style (CMS):** Typically used in books, magazines, corporate publications, and other popular outlets.

3.2. APA PUBLICATION MANUAL

In October 2019, the American Psychological Association (APA) introduced the 7th edition of the APA Publication Manual, which replaces the 6th edition

published in 2009. In that time a lot of things have changed. Citing online material has become more common, the use of inclusive and bias-free language is increasingly important, and the technology used by researchers and students has changed. The 7th edition addresses these changes by providing better and more extensive guidelines. This chapter outlines a quick reference to APA 7th edition and the main changes that you should know about.

3.3. APA TITLE PAGE (COVER PAGE)

An APA title page must include:

- A running head (including page number);
- The title of your paper (one or two lines long);
- The full name of the author(s);
- Your university or institution.

Write "Running head:" followed by a (shortened) version of your paper's title. It must be:

- Left aligned;
- Capitalized;
- Maximum 50 characters (not including the words "running head:").

3.4. PAPER TITLE

Use an informative, striking title that summarizes the main idea of your paper:

- Apply title case (capitalize the first letter of each word, except small words such as articles and short prepositions);
- Keep it shorter than 12 words;
- Don't use abbreviations or contractions;
- Place the title in the center of the page.

3.5. AUTHOR NAME(S)

The names of the authors are written in full (first name, initial of middle name(s), last name). Include the names of all authors in order of contribution. Don't include titles (Dr., Prof.) or degrees (PhD, MSc) (Table 3.1).

Table 3.1. Author Name

Multiple Author Variations	Example
Two authors, one affiliation	John T. Taylor and George Kotler University of California, Berkeley
Three authors, one affiliation	John T. Taylor, George Kotler and Dennis G. Parker University of California, Berkeley
Two authors, two affiliations	John T. Taylor University of California, Berkeley Laura Johnson Harvard University
Three authors, two affiliations	John T. Taylor and George Kotler University of California, Berkeley Laura Johnson Harvard University

3.6. APA HEADINGS AND SUBHEADINGS

A paper is usually divided into chapters and subsections. Each chapter or section has its own heading, and these headings provide structure to a document. As well as many other APA format requirements, there are specific guidelines for formatting headings to ensure that all papers are uniform and easy to read.

3.6.1. APA Heading Formatting

The APA formatting guidelines for each heading style are outlined in Table 3.2. APA recommends using 12 pt. Times New Roman font for both the body text as the headings.

Table 3.2. APA Heading Format

APA Heading Format	
Heading 1	Centered, bold, title case capitalization
Heading 2	Left-aligned, bold, title case capitalization
Heading 3	Indented, bold, sentence case capitalization, a final period. The body text begins immediately after the period.
Heading 4	Indented, bold, italics, sentence case capitalization,** a final period. *The body text begins immediately after the period.*

Heading 5	Indented, italics, sentence case capitalization, a final period. *The body text begins immediately after the point.*

3.7. WRITING NUMBERS: WORDS AND NUMERALS

Words should be used for numbers from zero through nine, and numerals should be used from 10 onwards. This is true for both cardinal numbers (e.g., two, 11) and ordinal numbers (e.g., second, 11th).

3.7.1. Exceptions

- Use numerals for numbers from zero to nine that are followed by a precise unit of measurement or grouped together with a number that is larger than 10.

Examples:

- The samples measured 7 cm in diameter. *("cm" is a unit of measurement)*
- However, only 3 of the 12 were usable. *("3" is being grouped with "12")*
- *But:* These three samples were subjected to further testing.

Use words for any number that is used to start a sentence, with the exception of years.

Examples:

- Seventy-two thousand ink cartridges are sold every day.
- Nineteenth-century novels often feature complicated plot lines.
- *But:* 2008 saw record olive crops throughout the Mediterranean.
- Use words for common fractions and set expressions.

Examples:

- According to the survey, two thirds of the employees are dissatisfied.
- Understanding the Five Pillars of Islam is a critical first step.
- The Fourth of July is traditionally marked by a firework display.

3.7.2. Writing Percentages

- With percentages, the standard is to use numerals and "%" (not "percent").

Example: According to the report, 45% of the workforce is employed in the service sector. Only 6% currently work in agriculture.

- The main exception is if you are using a percentage to begin a sentence. In this case, use words to express the entire percentage.

Example:

- Thirteen percent of the patients reported that their symptoms improved after taking the experimental drug.

3.7.3. Reporting Statistical Results That Include Numbers

Statistics, mathematical functions, ratios, and percentages are all written using numerals. Keep the following guidelines in mind:

- Report most statistics to two decimal places (such as $M = 5.44$).
- Report statistics that could never exceed 1.0 to three decimal places (such as $p < 0.001$).
- Italicize values that are not Greek letters (such as *M*, *SD*, *p*, and *F*).
- Include spaces before and after =, >, and <.

Examples:

The average IQ of the participants was relatively high ($M = 137.33$, $SD = 4.54$).

The results of the second test were statistically significant, $t(12) = 4.11$, $p < 0.05$.

- If a number comes immediately before a unit of measurement, use numerals.

Examples:

Each patient received 5 mg of the experimental drug.

The tallest participant was 2.03 m.

- Use numerals for precise ages, times, dates, scores, points on a scale, and amounts of money.

Examples:

- The final score of **Ghana 2, Brazil 1** did not represent a decisive victory.

- Children under **8 years** receive a **$50** discount.
- *But:* Most girls start reading when they are **about 5 years** old. ("about" makes the number imprecise).

Round up:

- About the age of **seven**, the girl's height was **1.47** m. This placed her in the **fifth** percentile, although her weight placed her in the top **7%** of her class. By the time she was **9** years old, she was taller than **half** of the boys in her year. **Five** years later, she was still ranked **15th**.
- **Thirteen thousand** viewers watched the performance of Shakespeare's ***Twelfth*** *Night* from the park, while another **2,000** watched from the surrounding buildings and **1.2 million** watched it on television. As **1** out of every **11** residents saw at least part of the play, this **one** event can definitely be considered a success.

3.8. TABLE COMPONENTS

APA style tables have the following basic components:

- **Number:** The table number appears above the table title and body in bold font. Number tables in the order in which they are mentioned in your paper.
- **Title:** The table title appears one double-spaced line below the table number. Give each table a brief but descriptive title, and capitalize the table title in italic title case.
- **Headings:** Tables may include a variety of headings depending on the nature and arrangement of the data. All tables should include column headings, including a *stub heading* (heading for the leftmost, or stub, column). The heading "Variable" is often used for the stub column if no other heading is suitable. Some tables also include column spanners, decked heads, and table spanners; these are described in the *Publication Manual*. Center column headings and capitalize them in sentence case.
- **Body:** The table body includes all the rows and columns of a table (including the headings row). A *cell* is the point of intersection between a row and a column. The table body may be single-spaced, one-and-a-half-spaced, or double-spaced.

- **Left-Align** the information in the leftmost column or stub column of the table body (but center the heading).
- In general, center information in all other cells of the table. However, left-align the information if doing so would improve readability, particularly when cells contain lots of text.
- **Note:** Three types of notes (general, specific, and probability) appear below the table as needed to describe contents of the table that cannot be understood from the table title or body alone (e.g., definitions of abbreviations, copyright attribution, explanations of asterisks used to indicate *p* values). Include table notes only as needed (Figure 3.1).

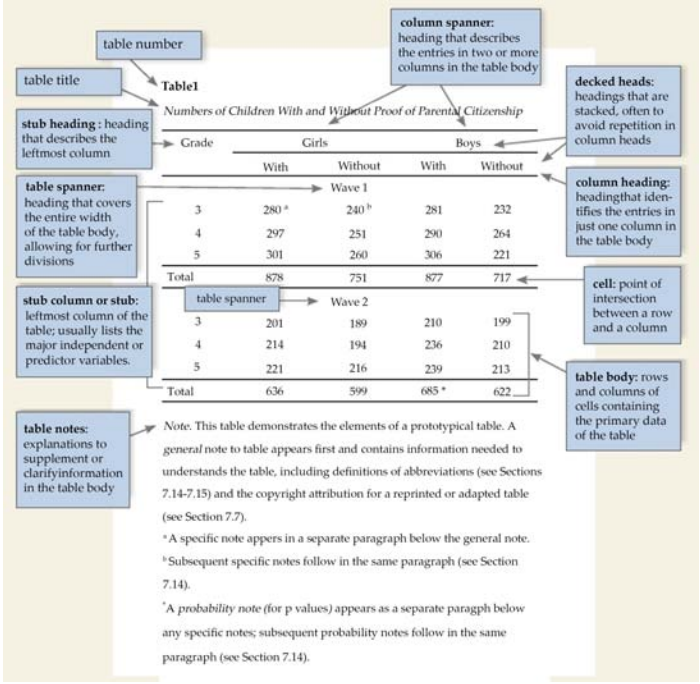


Figure 3.1. Notes appears in a table.

3.8.1. Figure Components

APA Style figures have the following basic components:

- **Number:** The figure number (e.g., Figure 3.1) appears above the figure title and image in bold font. Number figures in the order in which they are mentioned in your paper.

- **Title:** The figure title appears one double-spaced line below the figure number. Give each figure a brief but descriptive title, and capitalize the figure title in italic title case.
- **Image:** The image portion of the figure is the graph, chart, photograph, drawing, or other illustration itself. If text appears in the image of the figure (e.g., axis labels), use a sans serif font between 8 and 14 points.
- **Legend:** A figure legend, or key, if present, should be positioned within the borders of the figure and explains any symbols used in the figure image. Capitalize words in the figure legend in title case.
- **Note:** Three types of notes (general, specific, and probability) can appear below the figure to describe contents of the figure that cannot be understood from the figure title, image, and/or legend alone (e.g., definitions of abbreviations, copyright attribution, explanations of asterisks use to indicate *p* values). Include figure notes only as needed.

See the following diagram for an illustration of the basic figure components (Figure 3.2).

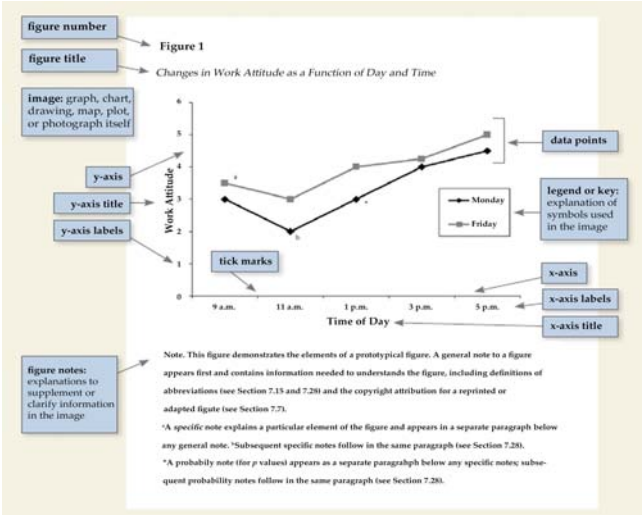


Figure 3.2. Diagram for an illustration of the basic figure components.

3.9. PARAGRAPH INDENTATION

Indent the first line of each paragraph of text 0.5 in. from the left margin. Use the tab key or the automatic paragraph-formatting function of your word-processing program to achieve the indentation (the default setting is likely already 0.5 in.). Do not use the space bar to create indentation. Exceptions to these paragraph-formatting requirements are as follows:

- **Title Page:** For professional papers, the title (in bold), byline, and affiliations should be centered on the title page. For student papers, the title (in bold), byline, affiliations, course number and name, instructor, and assignment due date should be centered on the title page.
- **Section Labels:** Section labels (e.g., "Abstract" and "References") should be centered (and bold).
- **Abstract:** The first line of the abstract should be flush left (not indented).
- **Block Quotations:** Indent a whole block quotation 0.5 in. from the left margin. If the block quotation spans more than one paragraph, the first line of the second and any subsequent paragraphs of the block quotation should be indented another 0.5 in., such that those first lines are indented a total of 1 in.
- **Headings:** Level 1 headings should be centered (and in bold), and Level 2 and 3 headings should be left-aligned (and in bold or bold italic, respectively). Level 4 and 5 headings are indented like regular paragraphs.
- **Tables and Figures:** Table and figure numbers (in bold), titles (in italics), and notes should be flush left.
- **Reference List:** Reference list entries should have a hanging indent of 0.5 in.
- **Appendices:** Appendix labels and titles should be centered (and bold).

3.10. REFERENCES AND IN-TEXT CITATIONS IN APA STYLE

3.10.1. Most Notable Changes in APA 7th Edition

- The *publisher location* is no longer included in the reference.

rFreire, P., (1970). *Pedagogy of the Oppressed*. New York: Herder and Herder.
aFreire, P., (1970). *Pedagogy of the Oppressed*. Herder and Herder.

- The in-text citation for works with three or more authors is now *shortened* right from the first citation. You only include the *first author's* name and "et al."

r (Taylor, Kotler, Johnson, and Parker, 2018).
a (Taylor et al., 2018).

- Surnames and initials for up to 20 authors (instead of 7) should be provided in the reference list.

r Miller, T. C., Brown, M. J., Wilson, G. L., Evans, B. B., Kelly, R. S., Turner, S. T., … Lee, L. H., (2018).
a Miller, T. C., Brown, M. J., Wilson, G. L., Evans, B. B., Kelly, R. S., Turner, S. T., Lewis, F., Lee, L. H., Cox, G., Harris, H. L., Martin, P., Gonzalez, W. L., Hughes, W., Carter, D., Campbell, C., Baker, A. B., Flores, T., Gray, W. E., Green, G., … Nelson, T. P., (2018).

- DOIs are formatted the same as **URLs.** The label **"DOI:"** is no longer necessary.

r doi: 10.1080/02626667.2018.1560449
a https://doi.org/10.1080/02626667.2018.1560449

- URLs are no longer preceded by "Retrieved from," unless a **retrieval date is needed**. The website name is included (unless it's the same as the author), and web page titles are italicized.

r Walker, A. (2019, November 14). Germany avoids recession but growth remains weak. Retrieved from https://www.bbc.com/news/business-50419127.
a Walker, A. (2019, November 14). *Germany avoids recession but growth remains weak*. BBC News. https://www.bbc.com/news/business-50419127.

- For eBooks, the format, platform, or device (e.g., Kindle) is no longer included in the reference, and the publisher is included.

r Brück, M. (2009). *Women in early British and Irish astronomy: Stars and satellites*[Kindle version]. https:/doi.org/10.1007/978-90-481-2473-2.

a Brück, M. (2009). *Women in early British and Irish astronomy: Stars and satellites*. Springer Nature. https:/doi.org/10.1007/978-90-481-2473-2.

- Clear guidelines are provided for including contributors other than authors and editors. For example, when citing a podcast episode, the host of the episode should be included; for a TV series episode, the writer and director of that episode are cited.
- Dozens of examples are included for online source types such as podcast episodes, social media posts, and YouTube videos. The use of emojis and hash tags is also explained.
- The singular **"they" or "their"** is endorsed as a gender-neutral pronoun.

r A researcher's career depends on how often he or she is cited.

a A researcher's career depends on how often they are cited.

- Instead of using adjectives as nouns to label groups of people, descriptive phrases are preferred.

r The poor.

a People living in poverty.

- Instead of broad categories, you should use exact age ranges that are more relevant and specific.

r People over 65 years old.

a People in the age range of 65 to 75 years old.

- Increased flexibility regarding fonts: options include Calibri 11, Arial 11, Lucida Sans Unicode 10, Times New Roman 12, and Georgia 11.
- The running head on the title page no longer includes the words "Running head:." It now contains only a page number and the (shortened) paper title.

r Running head: The Effect of Google on the Internet.

a The Effect of Google on the Internet.

- The running head is omitted in student papers (unless your instructor tells you otherwise).
- Heading levels 3–5 are updated to improve readability.
- Use only one space after a period at the end of a sentence.
- Use double quotation marks to refer to linguistic examples (e.g., APA endorses the use of the singular pronoun "they") instead of italics.

r	APA endorses the use of the singular pronoun *they*
a	APA endorses the use of the singular pronoun "they"

3.11. THE BASICS OF APA IN-TEXT CITATION

APA in-text citations consist of the *author's last name*, *publication year,* and if applicable, *page numbers*. Page numbers are required when quoting and encouraged when paraphrasing. Omit page numbers when referring to a source as a whole.

In-text citations can be included in multiple ways:

- The author claims that "plagiarism is becoming a bigger problem" (Smith, 2014, p. 170).
- Smith states that plagiarism is becoming increasingly widespread (2014, p. 170).
- As Smith (2014) has shown, plagiarism is a serious issue for universities.

3.12. PUNCTUATION IN CITATIONS

- Don't add anything (just use the quote's final punctuation):

  Peters (1986) indicated the following: "All of the research carried out previously now has no value."

  In her study, Trap (1962) asked: "How should the data be obtained?"

  The customer who could not use the discount exclaimed: "I do not agree with this!

  He said: "It's a difficult issue."
- Put the period after the citation:

Peters (1986) wrote: "All of the research carried out previously now has no value" (p. 3).

As discussed herein, the next question was "How should the data be obtained?" (Trap, 1962, pp. 44, 45).

According to a recent study, a customer who could not use the discount exclaimed: "I do not agree with this!" (Smith, 1999, p. 22).

3.12.1. Quote of 40 Words or More

If the quote contains 40 words or more, then place the quote in a separate block that begins on a new line and is indented in its entirety. This is called a ***block quote.***

- *Example*: **Block quote:** You might choose to begin the block quote with a lowercase letter. In this and the later examples we use "Lorem ipsum" text to ensure that each block quotation contains 40 words or more. Lorem ipsum dolor sit amet, consectetur adipiscing elit. (Organa, 2013, p. 234).

3.12.2. Removing or Shortening Text in a Quote

When you omit parts of text from a quote, you are then obligated to write the following in its place: "… ." This is called the ellipsis sign. When you remove a few words in a sentence, write three dots. Between each of the dots, put a space. When you remove an entire sentence from the quote, write four dots, again with spaces between the dots. Note that the first dot is a period. See the example below.

- *Example*: **Removing text from a quote:** According to Koeman (1996), shooting a free kick is not difficult: "Shooting at a… goal is simple: you only have to aim well… If you haven't trained to shoot at the goal then it's more difficult, of course" (p. 7) (Table 3.3).

Table 3.3. APA 6th/7th Comparison Quick Guide

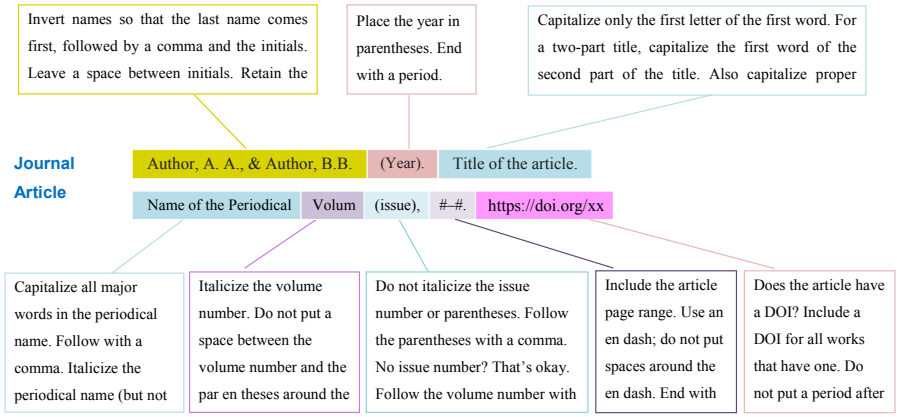
Topic/Reference	**APA 6th**	**APA 7th**
Student Paper Layout		

Student paper-title page layout	Not specified (only professional paper shared)	Components of title page: • No running head • Page number • Paper title • Author • Affiliation (school) • Course • Instructor • Due date
Student paper 2nd page and remainder of paper layout	Not specified (only professional paper shared)	Pages after title page: • Abstract (new page) • Text (new page) • References (new page) The following are not in ALL papers: • Footnotes • Tables • Figures • Appendices
Fonts allowed:	12 pt. Times New Roman	• 11 pt. Calibri • 11 pt. Ariel • 10 pt. Lucinda Sans Unicode • 12 pt. Times New Roman • 11 pt. Georgia
Mechanics of Style		
At the end of a sentence	*2 spaces* after a period	*1 space* after a period
Use double “” quotation marks to refer to linguistic example instead of italics.	APA endorses the use of the singular pronoun *they*	APA endorses the use of the singular pronoun *“they”*
References		

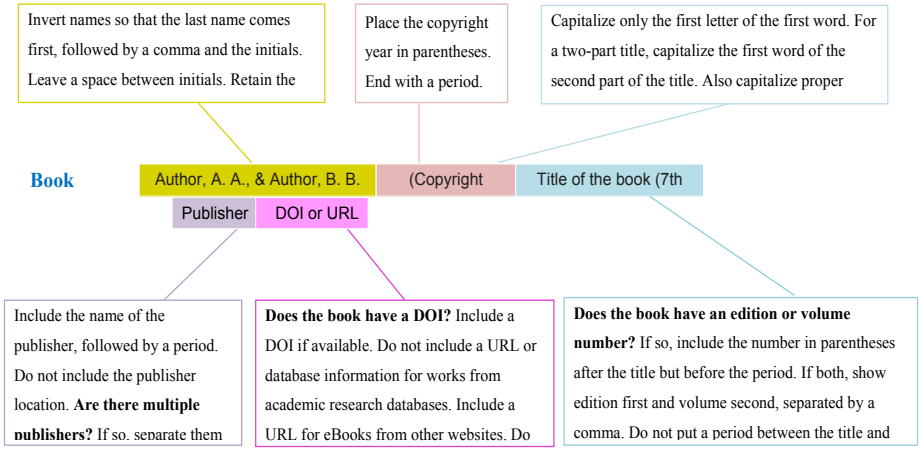
Journal Article	Herbst-Damm, K., & Kulik J. A., (2005). Volunteer support, marital status, and the survival times of terminally ill patients. *Health Psychology, 24,* 225–229. doi: 10.1037/0278-6133.24.2.225	Herbst-Damm, K. L., & Kulik J. A., (2005). Volunteer support, marital status, and the survival times of terminally ill patients. *Health Psychology, 24,* 225–229. https://doi.org/10.1037/0278-6133.24.2.225.
Book	Germer, C. K., (2009). *The Mindful Path to Self-Compassion: Freeing Yourself from Destructive Thoughts and Emotions.* New York, NY: The Guilford Press.	Germer, C. K. (2009). *The mindful path to self-compassion: Freeing yourself form destructive thoughts and emotions.* The Guilford Press.
eBook	Parker, M. E., (2005). *Nursing Theories and Nursing Practice (2nd edn.).* [eBook]. Retrieved from Ebscohost.com	Parker, M. E., (2005). *Nursing Theories and Nursing Practice* (2nd edn.). F. A. Davis Company. (add DOI here if available.
Chapter in an edited book	Orem, D. E., (2005). Part one: Dorothea E. Orem's self-care deficit nursing theory. In Parker's, M. E., (ed.), *Nursing Theories and Nursing Practice* (2nd edn., pp. 141–159). [eBook]. Retrieved from: Ebscohost.com	Orem, D. E., (2005). Part one: Dorothea E. Orem's self-care deficit nursing theory. In Parker's, M. E., (ed.), *Nursing Theories and Nursing Practice* (2nd edn., pp. 141–159). F. A. Davis Company.

Unpublished doctoral dissertation	Zimmerman, C. B., (1994). *Self-Selected Reading and Interactive Vocabulary Instruction: Knowledge and Perceptions of Word Learning Among L2 Learners.* Unpublished doctoral dissertation/ master's thesis. University of Southern California, LA.	Zimmerman, C. B., (1994). *Self-Selected Reading and Interactive Vocabulary Instruction: Knowledge and Perceptions of Word Learning Among L2 Learners.* Unpublished doctoral dissertation/ master's thesis. University of Southern California, LA.
Newspaper article	Neeley, O., (2019, November 24). County DSS report shows effective service. *The Wilson Times.* Retrieved from: http:// wilsontimes.com/stories/county-dssreport-showseffective service, 195618	Neeley, O., (2019, November 24). County DSS report shows effective service. *The Wilson Times.* http:// Wilson times. com/ stories/ county-dss report shows-effective-service, 195618
Government Report	United States Government Accountability Office, (2008). *Young Adults with Serious Mental Illness.* (GAO-08-678). Retrieved from: gao.gov/new. Items/ d08678. Pdf	United States Government Accountability Office, (2008). *Young Adults with Serious Mental Illness*. (GAO-08-678). https://gao.gov/new.items/ d08678.pdf
YouTube	So Yummy, (2019, August 9). *How to Decorate Pies*. [Video file]. Retrieved from: https://www.youtube.com/watch?v=VtKNrd-6Pwg	So Yummy, (2019, August 9). *How to Decorate Pies*. [Video]. You Tube. https:// www.Youtube.com/watch?v=VtKNrd-6Pwg

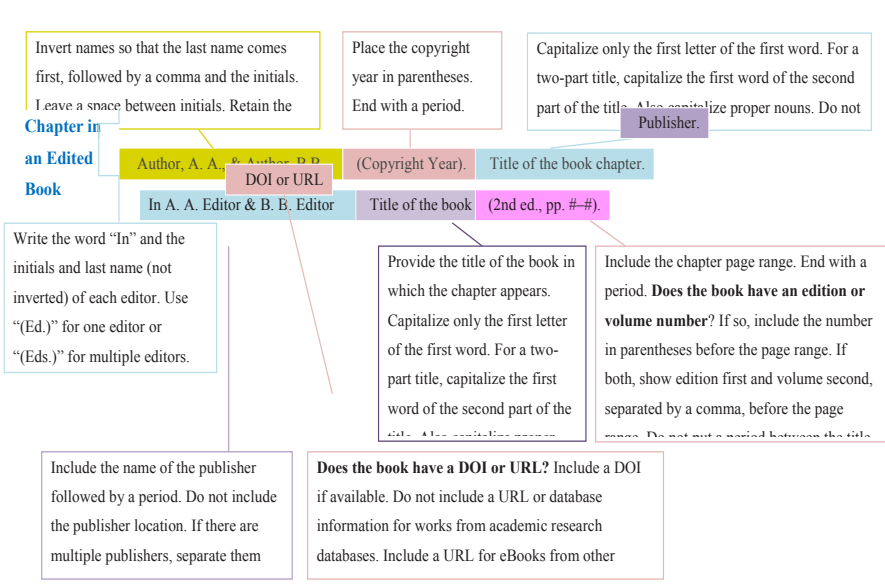
7th Edition Quick Reference Guide
Journal Article



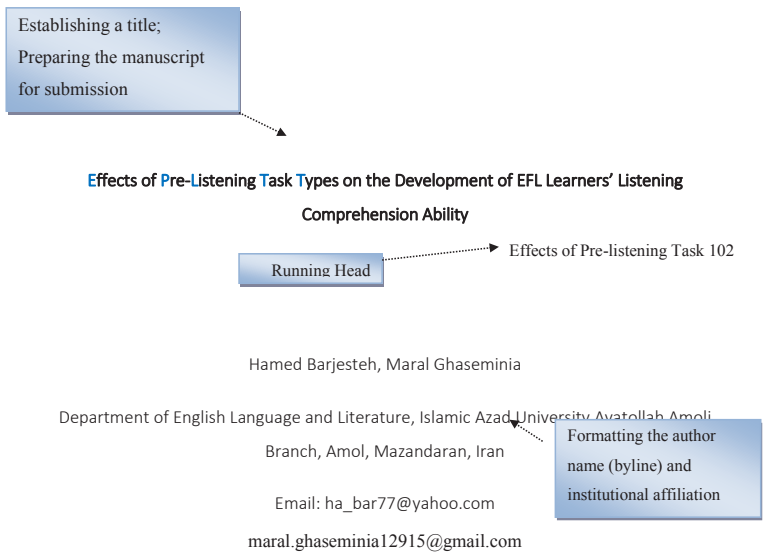
Book



Chapter in an Edited Book



Sample Experiment Paper APA 7th



Abstract
This study sought to examine the effects of pre-listening tasks in promoting the listening comprehension ability of Iranian English foreign language (EFL) learners. To undertake the study, Sixty-three female EFL University students were chosen to engage three task-based activities namely, podcast, video and topic preparation tasks. They were first homogenized by a Cambridge preliminary English test (PET), and then assigned into three groups comprising 21 students in each. The first group was randomly assigned into a podcast, the second group was nominated video-based, and the last group was invited to speak out around the topic. A teacher-made test of listening comprehension was employed to gauge students' listening performance. Each group was assigned jigsaw and filling the gap task to screen the effect of instruction. After collecting the data, one-way ANOVA and multiple regression analysis were conducted to determine the facilitative task. The results revealed that podcast-based task significantly promotes students' listening performance ability. This finding suggests that teachers can incorporate podcast as a pre-listening task to foster students' listening performance. The finding may help EFL teachers and materials developers put more focus on the podcast as a pre-listening task to gain better results in the teaching and learning process.
Keywords: Jigsaw, Listening Comprehension, Podcast, Topic-Based Task, Video-Based Task

Double-spaced manuscript, Times Roman typeface, 1-inch margins upper case the first letter; write 4/5 Keywords

Writing the introduction

Introduction

Listening is a demanding skill for many language teachers and learners. Many of the teachers find it a challenging skill to teach because it demands to find out what other people say in a natural setting. Listening skill is being neglected in many language learning situations due to the constructive involvements in bringing spoken texts (Buck, 2001). It was assumed to be as a passive skill because second language acquisition was essentially regarded in terms of the ability to speak and write, with listening downgraded to a marginal site (e.g., Anderson, 2005; Calvo & Lang, 2004; Carretie, Hinojosa, Marin-Loeches, Mecedo, & Tapia, 2004; Nummenmaa, Hyona, & Calvo, 2006). Vandergrift (2002) called listening as a Cinderella skill. Today, listening is acknowledged as an interactional and active process, critical to second language (L2) acquisition, and highly com[illegible] (Morley, 2001). [illegible]s (1982) compr[illegible] (1988) methodo[illegible] skill recognized as a cornerstone to second language instruction. Chastain (1988) stated ‘‘not only are listening skills the basis for the development of all other skills, they are also the main channel through which students make initial contact with the target language and its culture ‘‘ (p. 7). Listening comprehension is critical to s[illegible]ccess in the formal setting. By the emergence of communicative language teaching, listening skill is considered as the bedrock for a learner to negotiate meaning. Thus, there have been various attempt to promote EFL learners’ listening comprehension ability with different means such as visual aids, advance organizers, captions, to name a few. They aim to make listening comprehension easier and also act as a psychological facilitator on students’ learning process. To foster students listening skill, Rost (1990) attests that pre-listening tasks can be helpful in performing different activities. A number of pre-listening tasks have been proposed in L2 professional literature comprising textual/contextual cues and aural descriptions (Dixon, 1991), picture (Her[illegible] vocabulary (Chung & Huang, 1998) and question preview (Chung, 2002).

Ordering citations within the same parentheses

Selecting the correct tense

Correct citation

Use of hyphenation for compound words

This study employs two pre-listening tasks, namely jigsaw and gap-filling, with a hope to foster EFL learners’ listening ability. Essentially, they are a cooperative learning lesson design in which students should share their information. The notion of task developed early in the 1980s with Prabhu’s Bangalore project. It was proposed to second/foreign language instruction drawing on four theoretical assumptions such as constructivist, socio-

cultural theories of learning, Krashen's input hypothesis, and experiential learning. Building on the Wilkin's (1976) analytical syllabus, different researchers in the field (Ellis, 2003; Good et al., 2001; Nunan, 2004; Skehan, 1996) proposed frameworks for TBLT. They postulated that incorporating task in learning outcome.

No Capitalization in naming theories

Numbers expressed in words

Separate the authors

Citing one work by six or more authors

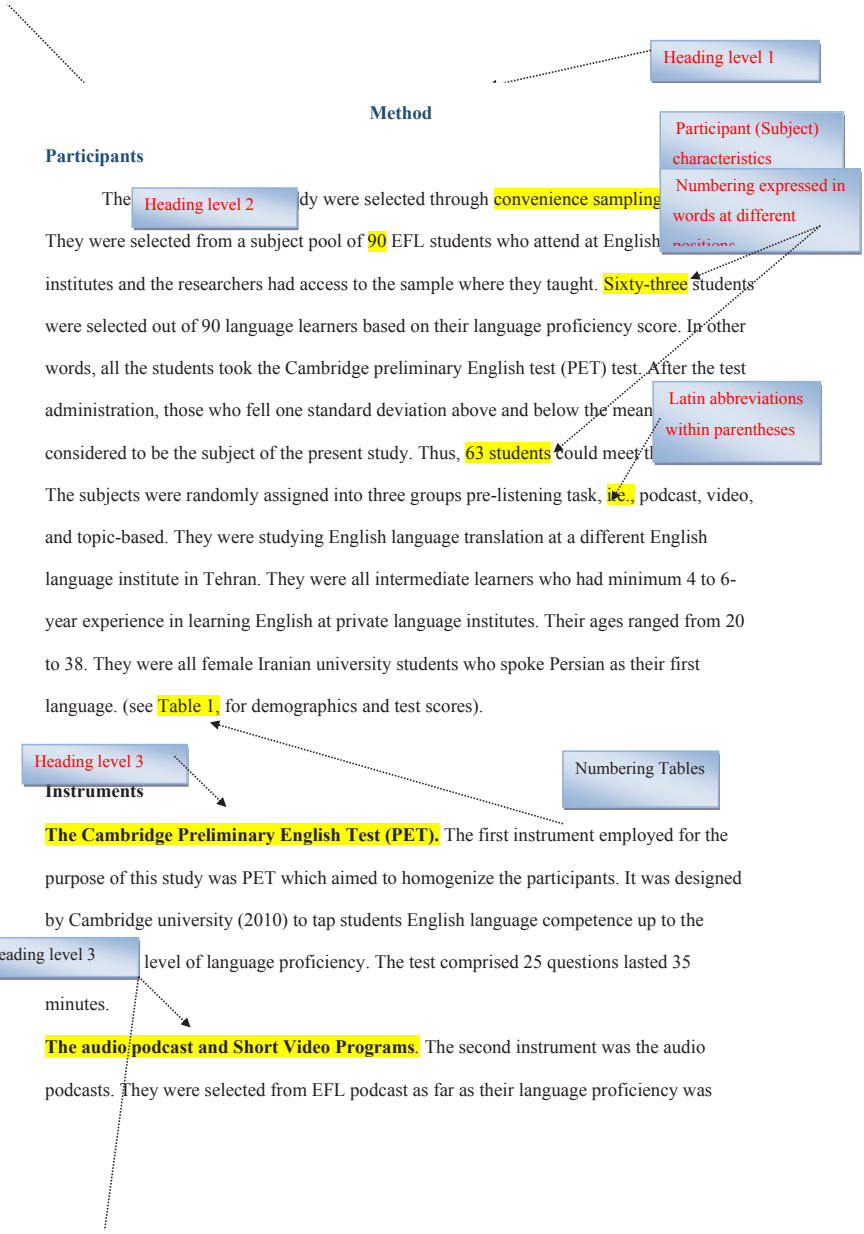
emerged in the literature was the pre-task in listening which aims to help students prepare themselves for completing the task by providing students with the task instruction and activating the background knowledge. During the task phase, students complete the task. In the post-task phase, learners practice some specific linguistic features of the task. Willis (as cited in Ellis, 2003) proposed a "task cycle" comprised three stages: (1) Pre-task, (2) task, and (3) language focus" (p. 33). The concept of the task cycle illustrates the stages that on task should include so as being as efficacy as it can be. Ellis (2003) further

Using the colon between two grammatically complete clauses Capitalization of words beginning a sentence after a colon

Block quotation

> hase, one option is for the teacher to highlight useful words and phrases. The task phase ends with a "report" where the learners comment on their performance of the task. In the final phase, learners perform consciousness-raising and practice activities directed at specific linguistic features that occurred in the input of the task and/or in the transcripts of fluent speakers doing the task" (p. 33).

For the purpose of the present study three pre-listening tasks including podcast, video-based and topic-preparation have been utilized to examine the effect of the intervention. Audio-based materials can provide the students with real life situation. Wilkinson (1984) posits that "with video, the student can not only hear the speakers; he can see the speakers,



Method

Participants

The dy were selected through convenience sampling They were selected from a subject pool of 90 EFL students who attend at English institutes and the researchers had access to the sample where they taught. Sixty-three students were selected out of 90 language learners based on their language proficiency score. In other words, all the students took the Cambridge preliminary English test (PET) test. After the test administration, those who fell one standard deviation above and below the mean considered to be the subject of the present study. Thus, 63 students could meet t The subjects were randomly assigned into three groups pre-listening task, i.e., podcast, video, and topic-based. They were studying English language translation at a different English language institute in Tehran. They were all intermediate learners who had minimum 4 to 6-year experience in learning English at private language institutes. Their ages ranged from 20 to 38. They were all female Iranian university students who spoke Persian as their first language. (see Table 1, for demographics and test scores).

Instruments

The Cambridge Preliminary English Test (PET). The first instrument employed for the purpose of this study was PET which aimed to homogenize the participants. It was designed by Cambridge university (2010) to tap students English language competence up to the level of language proficiency. The test comprised 25 questions lasted 35 minutes.

The audio podcast and Short Video Programs. The second instrument was the audio podcasts. They were selected from EFL podcast as far as their language proficiency was

concerned. Each of them lasted 5 minutes on a number of topics such as food, travel, air, and job, to name a few. Two speakers and a laptop were used for playing audio. The students were directed to listen to each track without pause and just one time.

Jigsaw Task and Gap Filling Task. A number of Jigsaw and gap filling tasks were selected from Tactics for listening developed by Richards (2011). The listening modules comprised 24 unit lessons accompanied by tactics for testing materials to assist students with the listening sections. Listening module of the book was to provide EFL students with opportunities to listen to authentic texts.

Procedure

To comply with the objective of the present study the following steps were pursued: First, a number of 90 EFL students were selected through a condiment sampling. A language proficiency test of PET was administered among the subject pool of 90 English language learners. Then, the mean scores and standard deviation scores were taken into account. Of all the participants 63 students were considered to be legitimate subjects with homogeneous language proficiency. Second, they were randomly assigned into three groups of learners to serve as podcast, video-based, and topic preparation groups. Next, all three groups took a listening test as the pretest to tap students' knowledge of listening comprehension prior to the intervention. In the following phase of the study, the intervention started. Two tasks, i.e., gap filling and Jigsaw, were employed in each group. Put it other words, three classes including podcast, video-based, and topic preparation were invited to use gap filling tasks using three methods of podcast, video-based, and topic preparation. Next, the same subjects were asked to use Jigsaw task using the three methods of the same topics. The whole treatment took 10 sessions and in each session, 20 minutes were allocated for the pre-listening activities. More precisely, the first group listened to the audio file of the podcast as a pre-listening activity, and the second group was assigned to watch video programs concerned to the topics of listening activities, and the last group was required to talk about the related topics. At the end

of the intervention, the jigsaw and filling the gap tasks were administered to all groups in order to screen the subjects' listening ability. At the end of instruction, the data were collected and then were analyzed using SPSS version 24 software.

Data Analysis

The current study was carried out following a quasi-experimental pretest post test design with three experimental classes which were randomly assigned as podcast, video-based and topic preparation groups. The independent variable was prelisting tasks and the dependent variables were the task types assigned for the groups. To answer the research questions, a one-way ANOVA and multiple regression analysis were employed. The following section presents the detail of the data analysis, respectively.

Results

Abbreviations accepted as words Space

esearch questions, students' performance on the gap filling and jigsaw re examined in the following tables. Table 1 illustra

Decimal fractions

standard deviation of Post- Test Gap Fillings group. Table 1 indicates the mean and standard deviation of each group respectively, i.e., podcast group (M = 16.52, SD = 1.47), video short program group (M = 18.57, SD = .92), and in the topic preparation group (M = 16.80, SD = 1.88). In addition, Table 2 illustrates the descriptive statistics of students' performance on the Post-Test Jigsaw task.

Table 5 represents that of all pre-listening tasks only podcast predicts the performance of Iranian EFL learners' listening comprehension in jigsaw task. The R^2 (R^2 = .50) indicates that podcast can predict 50 % of the performance of Iranian EFL learners' listening comprehension in jigsaw tasks. The result is presented in Table 5.

Table 6 indicates that if the podcast increases by one standard deviation then the

Reporting p values Spacing, alignment, and punctuation of mathematical conv

rehension scores will increase .71 of standard deviations. The result attests that ning tasks only podcast is able to predict the performance of Iran

Statistical symbols

learners' listening comprehension in the jigsaw group. To examine if there is any significant difference among the groups, a one-way ANOVA was run. The result is presented in Table 7.

Table 7 presents that there is a significant difference between the groups *(F* (2, 60) = 11.77, *p* < .001). To find out the precise location of the differences among the participating groups, a post hoc Tukey a run. Table 8 presents the post hoc Tukey test for students' performance in the posttest of gap filling.

Symbols

Table 10 indicates that the difference between podcast and video was statistically significant. In addition, the difference between topic and SVP was statistically significant. Using Eta-squared, 18% of the total variance was accounted for b Informed by Cohen's guideline, it is considered to be small effect size. However, the difference between podcast and topic preparation was not statistically significant ($p > .05$). To represent the schematic representation, Figure 1 illustrates the means plot of the posttest at jigsaw group. Figure 1 indicates that the performance of the students on video programs group was better than other groups, and the performance of students in the podcast group was better n group.

Numbering and discussing figures in text

Clear statement of support or nonsupport of hypotheses

Discussion

Discussion section ending with comments on importance of findings

The present study compared the effect of Podcast, video short programs and topic preparation on enhancing listening comprehension of EFL learners in classroom setting tasks. Task-based learning activities supported language learning and language teaching in the classroom. The results of this study indicated the students had opportunities to share their opinions and ideas that were given in the designed task-based language learning activities. These results of this study are in agreement with other studies which found TBL is helpful to the learners and motivate them in making a more cooperative learning environment and also providing chances for real life-like language use. It also makes a low-anxiety learning environment in which students can share their ideas and practice their language to develop confidence.

Conclusion

This study was an endeavor to probe the effects of pre-listening tasks on EFL learners' listening comprehension ability. A straightforward conclusion for the present study is that, of all pre-listening tasks employed for the purpose of the current research, podcast was more effective in fostering students' listening ability. It is found that podcast can foster students' listening ability. More precisely, it helps them become more enthusiastic to express their ideas and to be more communicative. In addition, it helps them comprehend similar situations in real life by engaging them to listen attentively. Students were involved in different groups to discuss and to solve the problems encountered by different tracks in the podcast. One implication of the present study is that using podcast in the EFL classroom can help students assess their listening skill. They learn how to listen, and how to create listening activities for peers. In fact, it fosters self-instruction. The finding suggests that further study needs to be taken to probe the efficacy podcast in other skills such as listening, reading, and writing at the same or other levels.

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Two or more author

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CHAPTER 4

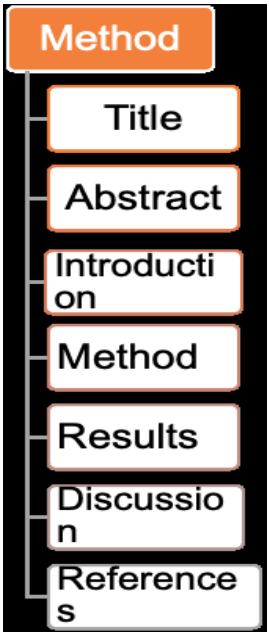
HOW TO WRITE A RESEARCH REPORT?

At the end of this chapter, students will learn:

- Title;
- Abstract;
- Introduction;
- Method;
- Results;
- Discussion;
- Conclusion;
- References;
- Appendixes.

4.1. RESEARCH REPORT

Research Report is a formal report in which the findings from research are presented. Whether the research is quantitative or qualitative in nature, the research report needs to consist of a number of sections which deal with the different stages of, and rationale behind, the research process. Journal articles or theses may have a predetermined list of headings which have to be adhered to, but regardless of the precise wording of the headings, the same elements will need to be included. A research report normally consists of the following sections.



This is the basic, standard structure which underlies the majority of research reports. However, sometimes other sections are included where appropriate. Similarly, sometimes sections of the report are merged.

4.2. TITLE

A section of research report which summarizes the main idea of the research study. A title should be a concise statement of the main topic and should identify the variables or theoretical issues under investigation and the relationship between them. A title should be fully explanatory when standing alone. Titles are commonly indexed and compiled in numerous reference works. Therefore, you should avoid words that serve no useful purpose;

they increase length and can mislead indexers. The title should be concise and should indicate clearly the purposes of the study. Here are a few other important things you want to keep in mind when it comes to titles regarding formatting, word count, and content:

- Write the title after you've written your paper and abstract.
- Include all of the essential terms in your paper.
- The recommended length of a title is no more than 12 words (APA, 2009).
- Avoid any jargon or abbreviations.
- Use keywords that closely relate to the content of your paper.
- Never include a period at the end—your title is not a sentence.
- The title should be typed in uppercase and lowercase letters, centered, and, when two or more lines are needed, double spaced (capitalize the first letter of each word, except small words such as articles and short prepositions).
- You can sometimes use a colon to add additional information to the title, such as the methodology that was used. Do not use acronyms in the title without spelling them out.

4.3. EXPLORING PHD STUDENTS' PERCEPTION ON ENGLISH FOR ACADEMIC PURPOSE

4.3.1. Running Head

A running head is a short version of the paper title that is printed as a heading at the top of each page. If your document includes page numbers at the top, the running head can precede the page number or appear on the opposite edge of the page. In APA style, the running head is placed in the upper left. The running head, a shortened version of the title, should be a maximum of 50 characters including letters, punctuation, and spaces between words. The running head is typed near the bottom of the page in uppercase letters.

4.3.2. Acknowledgments

Acknowledgments appear as unnumbered footnotes near the bottom of the title page to indicate the basis of a study (e.g., doctoral dissertation), grant support, review of prior draft of the manuscript, and assistance in conducting

the research and/or preparing the manuscript. They should be clearly and directly stated.

4.3.3. Abstract

An abstract is a brief summary of research that includes the *research questions, the methods used and the results.* The structure may vary but a well-written abstract should summarize five essential things to help the reader know what the study is about: (a) *purpose of the study; (b) source(s) from where the data are drawn (participants); (c) the method(s) used for collecting data; (d) the general results; and (e) general interpretation of the results. It begins with a precise statement of the problem or issue, followed by a description of the research method and design, the major findings, and the conclusions reached.* A well-prepared abstract can be the most important single paragraph in an article.

- The abstract should be one paragraph that is NOT indented.
- An abstract is a 150- to 250-word paragraph.
- The keywords are included at the bottom—with an indentation and the word "Keywords" italicized. Each keyword is separated by a comma.
- do not add to or comment on what is in the body of the manuscript.
- You should use verbs rather than their noun equivalents and the active rather than the passive voice (e.g., investigated rather than an investigation of; The authors presented the results instead of Results were presented).
- You should use the present tense to describe conclusions drawn or results with continuing applicability;
- Use the past tense to describe specific variables manipulated or outcomes measured.
- Make each sentence maximally informative, especially the lead sentence.
- Do not repeat the title.

4.3.4. Graphical Abstract

A graphical abstract is a single, concise, and visual summary of the main findings of the article. This could either be the concluding figure from the article or a figure that is specially designed for the purpose, which captures

the content of the article for readers at a single glance. Please see examples below. The graphical abstract will be displayed in online search result lists, the online contents list and the online article, but will not (yet) appear in the article PDF file or print. Authors must provide an image that clearly represents the work described in the paper. A key figure from the original paper, summarizing the content can also be submitted as a graphical abstract. Graphical abstracts should be submitted as a separate file in the submission system by selecting "graphical abstracts" from the drop-down list when uploading files.

4.3.5. Specifications

A graphical abstract should be a one-image file and should visualize one process or make one point clear. For ease of browsing, the graphical abstract should have a clear start and end, preferably "reading" from top to bottom or left to right. Try to reduce distracting and cluttering elements as much as possible.

- **Image Size:** Please provide an image with a minimum of 531 x 1328 pixels (hxw) using a minimum resolution of 300 dpi. If you are submitting a larger image then please use the same ratio (200 high x 500 wide). Please note that your image will be scaled proportionally to fit in the available window on Science Direct; a 500 by 200 pixel rectangle.
- **Font:** Please use Times, Arial, Courier or Symbol font with a large enough font size as the image will be reduced in size for the Table of Contents to fit a window of 200 pixels high.
- **File Type:** Preferred file types are TIFF, EPS, PDF or MS Office files.
- No additional text, outline or synopsis should be included. Any text or label must be part of the image file. Please do not use unnecessary white space or a heading "graphical abstract" within the image file.

4.3.6. Introduction

The introduction section tells you which area of the field is involved and then narrows to the specific specialization and topic that was investigated. This goal is normally accomplished through a review of the relevant literature, and a statement of the purpose of the study. The Introduction should answer the question '*Why:' why you choose that topic for research;*

why it is important; why you adopted a particular method or approach; and so on. You can also think of the Introduction as the section that points out the gap in knowledge that the rest of the paper will fill, or the section in which you define and claim your territory within the broad area of research.

The four moves to write the introduction section:

- Provide background information and set the context: Background information provides 'general overview' of the topic, including past literatures to provide clear objective of the study. This is done by including key words from title in the first few sentences to focus directly on the topic. The aim is to build a rapport, right from the beginning between the reader and the article proper, with clear and robust information on the research topic. The literature review and choice of research method should make the reader understand the issue that current work attempted to resolve. Care should be taken so that the literature review is not too exhaustive to include all the available knowledge in field of study.
- Introduce the specific topic of your research and explain why it is important: State the purpose with clear rationale why the study is being carried out. This includes background information of the problem already known, current status, and then narrow down to what is unsolved and the gap that present study is going to bridge.
- Mention past attempts to solve the research problem or to answer the research question.
- Conclude the Introduction by mentioning the specific objectives of your research.

The introduction of a paper answers three important questions for the reader:

- What is this?;
- Why should I read it?; and
- What do you want me to think about/consider doing/react to?

The schematic representation moves for writing the Introduction (Figure 4.1).

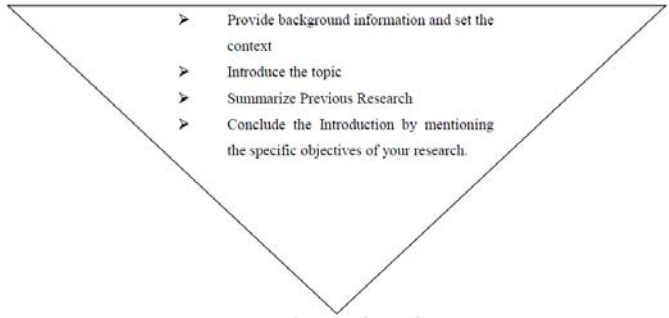


Figure 4.1. Moves for writing the introduction.

4.4. RESEARCH QUESTIONS

Qualitative and quantitative researches are two main methodologies of research. The Qualitative research is primarily used in social sciences and includes surveys, case studies, focus groups, and ethnography studies.

Here are the three types of qualitative questions for both research topics and survey questions:

1. **Exploratory Question:** The objective of asking an exploratory question is to learn more about a topic without attributing bias or preconceived notions to it.
    - *Q: What is the effect of dialog journal on learners' autonomy?*
2. **Survey Question:**
    - *Q: Do EFL learners feel that dialog journal has positively or negatively affected their autonomy?*
    - *Q: How do students write their dialog journal?*
3. **Predictive Questions:** Predictive questions use past information to predict reactions to hypothetical events.
    - *Q: Are students more likely to incorporate dialog journals after their peer used successfully?*

4.4.1. Interpretive Questions

Interpretive questions interpret how a group makes sense of shared experiences and attributes meaning to various phenomena.

- *Q: Survey Question: How do you attribute value of a good writing?*

4.4.2. Quantitative Research Questions

Quantitative research questions are beneficial when choosing a research topic or when posing follow-up questions that gather more information. It can be classified as:

Difference

Is there any significant differences between…….and …….?

4.4.3. Descriptive Questions

As the most basic type of quantitative research question, descriptive questions seek to explain when, where, why, or how something occurred. They use data and statistics to describe an event or phenomenon.

- Q: What percentage of high school students have used dialog journal in as an assignment?

4.4.4. Follow-Up Question

- Q: How often do EFL learners report their perception of the course procedure?

4.4.5. Comparative Questions

They are especially helpful when studying groups with dependent variables (DVs).

- Q: Why is it easier for ESL students to use dialog journals than EFL learners?
- Q: Do EFL and ESL learners have comparable writing accuracy?

4.4.6. Relationship-Based Questions

These questions are common in quasi-experimental and experimental studies when researchers want to probe the interrelationships among variables.

- *Q: Is there any relationship between EFL learners writing a dialog journal and their grammatical accuracy?*
- *Q: How does the number of dialog journal writing affect EFL learners' grammatical accuracy?*
- *Q: What are the relevant factors that affect EFL learners' grammatical accuracy in writing a dialog journal?*

To what extent can …….predict…….?

Saldana (2013) classified types of research questions in the following diagram (Figure 4.2).

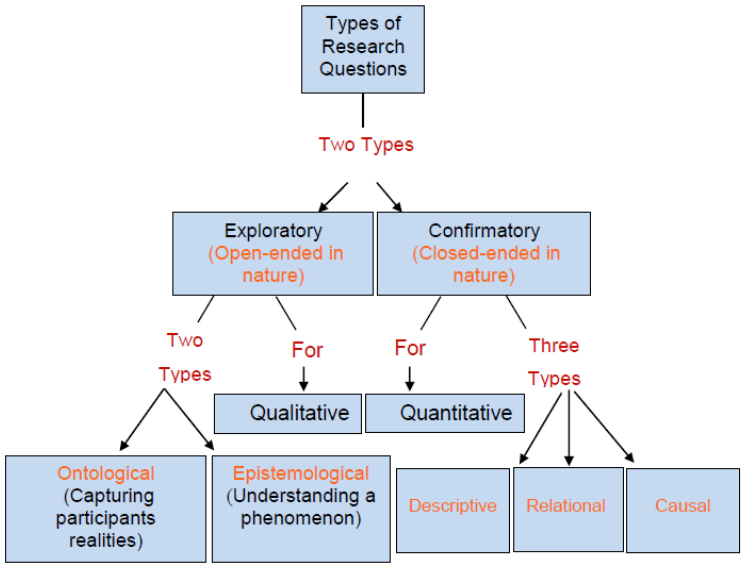


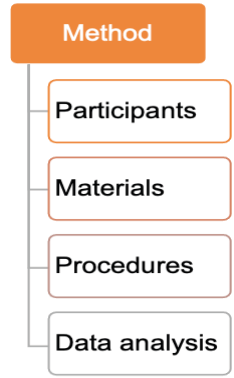
Figure 4.2. Types of research questions.

4.5. METHOD

A section of a research report which describes what happened in the study. Method section should answer most of the Wh-questions. More specifically, this section should tell you (a) who participated in the study, including when and where (*participants*), (b) what type of materials were used (*materials*), (c) what the participants were asked to do (*procedures*), and (d) how the analyzes were performed (*analyzes*).

Points to Ponder:

- In the method section, you should describe the details of how the study was conducted.
- You should provide the reader with enough information to be able to replicate your study.
- Method sections may vary in the number of sections the authors include, but the most common sections are described below.
- The entire Method section should be written in past verb tense. Method section comprised:



4.6. PARTICIPANTS (SUBJECTS)

Subjects are those from whom data are gathered. In the *method* section of a research report, the characteristics of the subjects or participants should be described. Detail the sample's major *demographic characteristics*, such as *age; gender; ethnic and/or racial group; level of education; native language; level of proficiency, nationality; socioeconomic, generational, or immigrant status; disability status; gender identity; and language preference as well as important topic-specific characteristics*. You should also describe the *procedures for selecting participants*, including (a) the *sampling method*, (b) the *percentage of the sample* approached that participated; and (c) the number of participants who selected themselves into the sample (Table 4.1).

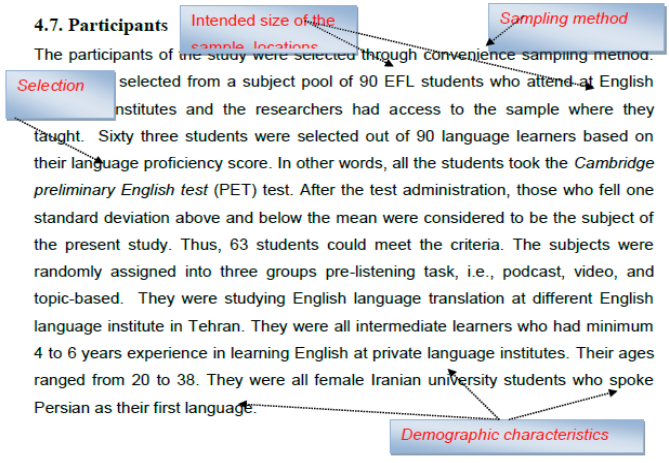
Points to Ponder:

- Describe the settings and locations in which the data were collected as well as any agreements and payments made to participants, agreements with the institutional review board, ethical standards met, and safety monitoring procedures.
- Along with the description of subjects, give the intended size of the sample and number of individuals meant to be in each condition. If interim analysis and stopping rules were used to modify the desired sample size, describe the methodology and results.

Table 4.1. Detail of Participants Description

Description	Detail
Demographic characteristics	Age; gender; ethnic and/or racial group; level of education; native language; level of proficiency, nationality; socioeconomic, generational, or immigrant status; disability status; gender identity; and language preference as well as important topic-specific characteristics.
Sampling method	Probability random sampling: · Systematic sampling; · Stratified sampling; · Cluster sampling; · Multi-stage sampling; · Area sampling. Non-probability random sampling: · Quota sampling; · Accidental sampling; · Judgmental or purposive sampling; · Expert sampling; · Snowball sampling; · Modal instant sampling; · Heterogeneity sampling.
Settings and locations	Institute, city, University, Country.
Intended size of the sample	

4.7. PARTICIPANTS



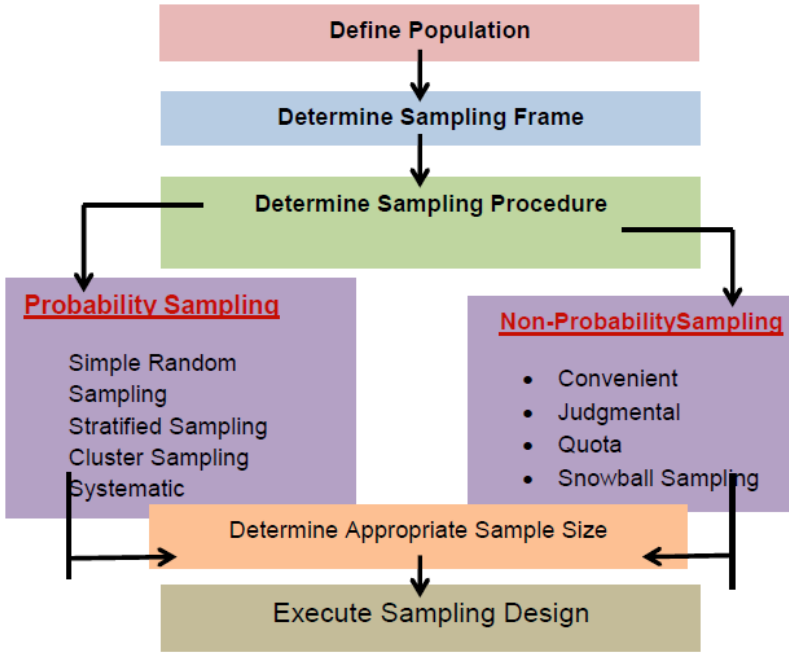


Figure 4.3. Sampling design process.

4.8. MATERIALS

Describe the materials, measures, equipment, or stimuli used in the experiment. This may include *testing instruments, technical equipment, books, images, or other materials* used in the course of research. If you used some type of psychological assessment or special equipment during the course of your experiment, it should be noted in this part of your method section. The materials are also sometimes included in appendix. *Teaching materials, questionnaires, rating scales, tests,* and so forth should be described in detail unless they are well known. Any other pertinent information, such as the *range of possible scores*, *scoring methods* used, types of questions, and types of scales, should be included. The reliability and validity of any tests or scales should appear in this section as well.

4.9. INSTRUMENTS

- **The Cambridge Preliminary English Test (PET):** The Cambridge preliminary English test (PET) 2010 used to homogenize the participants. The rationale behind adopting this test for the purpose of the study is that it is an appropriate test for determining the intermediate group. It was 25 questions and last 35 minutes after administering the test, the learners whose scores were within one standard deviation above and below the mean in the second version of the test were selected as the participants for the study.
- **The Audio Podcast:** The audio podcasts, were selected from EFL podcast each of them were 5 minutes and about different topic first podcast was about food, second was about travel and third one was about air. The podcasts selected based on students level. The students listen to it without pause and just one time. Two speakers and a lap top used for playing audio.
- **Willingness to Communicate (WTC) Questionnaire:** WTC questionnaire was used in order to measure the degree of WTC in the students (Appendix). The questionnaire was adapted from MacIntyre, Baker, Clément and Conrod (2001). The Scale measures L2 WTC in four basic skill areas: listening (8 items), speaking (5 items), reading (6 items), and writing (8 items). It also measures students' willingness to engage in L2 communication inside the classroom. This questionnaire includes 27 items and the students are asked to choose an answer based on the Likert scale from 1 to 5. The scales are: 1) almost never willing, 2) sometimes willing, 3) willing half of the time, 4) usually willing and 5) almost always willing.

4.10. PROCEDURE

The next part of your method section should detail the procedures used in your experiment. Explain what you had participants do, how you collected data and the order in which steps occurred. You should answer the following questions:

- How the materials and instruments were used?
- What did the subjects do in the study, or what was done to them?
- How were the materials prepared, administered, and scored?

- What were the environmental conditions like during the experiment?
- Were they the same for all the subjects involved? How long did the process take?
- Did any of the subjects drop out?

4.11. DATA ANALYZES

A data analysis section is provided right after the methods and approaches used. There, you should explain how you organized your data, what statistical tests were applied, and how you evaluated the obtained results. Follow these simple tips to compose a strong piece of writing:

- Avoid analyzing your results in the data analysis section.
- Indicate whether your research is quantitative or qualitative.
- Provide your main research questions and the analysis methods that were applied to answer them.
- Report what software you used to gather and analyze your data.
- List the data sources, including electronic archives and online reports of different institutions.
- Explain how the data were summarized and what measures of variability you have used.
- Remember to mention the data transformations if any, including data normalizing.
- Make sure that you included the full name of statistical tests used.
- Describe graphical techniques used to analyze the raw data and the results.

There are differences between qualitative data analysis and quantitative data analysis. In qualitative researches using interviews, focus groups, experiments, etc., data analysis is going to involve identifying common patterns within the responses and critically analyzing them in order to achieve research aims and objectives. Data analysis for quantitative studies, on the other hand, involves critical analysis and interpretation of figures and numbers, and attempts to find rationale behind the emergence of main findings. Comparisons of primary research findings to the findings of the literature review are critically important for both types of studies-qualitative and quantitative.

4.11.1. Research Design

Are you doing qualitative or quantitative research; is it exploratory, descriptive or explanatory? Explain why you are using this type of study and what you plan to explore, describe, or explain (again tie it to the literature review). Do you plan to use interventions, interviews, behavior observation, questionnaires, etc.? What subtype of each do you plan to employ (e.g., structured vs. unstructured interviews or closed vs. open-ended questions)? State your rationale for your approach (literature review). List all of your variables, which ones are independent or dependent? What level of measurement do you plan to use for each variable? This is not an exhaustive list, nor are these chronological questions to be answered.

4.12. DATA ANALYSIS

A qualitative research method was adopted to undertake the study. Qualitative analysis is aimed at searching for themes or patterns which is grounded in data (Tan, 2010). Following Heigham and Croker's (2009) guideline for the research design, exploratory design best suits the rationale of the current research to make legitimate conclusions when little is known about the social construct under investigation. The data obtained from 160 journal entries, two self-assessments and two classroom assessments. The data were analyzed qualitatively with respect to three dimensions included in TLMP model. They were subjected to the thematic analysis to explore students' perspectives on the course procedure. More precisely, to analyze the data, journal entries were sign-coded into reductionist themes and categories. After color-coded and conceptual coding, a number of themes emerged. The themes stemmed from different sources: (a) the participants' direct quotations (b) the researcher's intuition, and (c) a review of the related literature. To assure the credibility of the data, the emerged themes were cross-checked with two colleagues holding PhD in TEFL.

4.12.1. Research Design

A quasi-experimental research design (QRD) was adopted to investigate the causal impact of an L1 equivalents and contextualized vocabulary instruction on target population. Notably, the QRD aimed to probe whether L1 equivalents and context on vocabulary instruction can foster EFL learners' vocabulary retention. This study adopted QRD due to a number of reasons such as the availability of the target population, the time limit and their willingness to be a part of the sample. Following Creswell's (2012)

guidelines for the research design a pretest-posttest research design was chosen to address the objective of the current study. To answer the research questions, the preliminary assumption was met. Next, a one-way ANOVA, and the post hoc Scheffe test were conducted to compare the performance of EFL learners from the relevant groups.

4.13. RESULTS

Results contain summaries of the data that focus on the main findings of the research. For clarity, it helps if data can be presented in the form of tables or graphs. Note that the results section should concentrate precisely on this and not discuss the findings. When you report results you should restate the hypothesized relationship(s) between the variables of interest, tell what statistics (parameters) were used to test this hypothesis, report the results of the test(s), and then explain what the results mean by talking about people and their behavior.

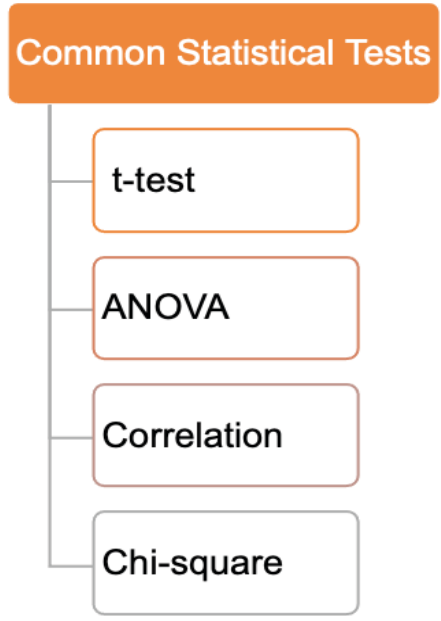
Points to Ponder:

- Begin the results section by restating each hypothesis, then state whether your results supported it.
- Then give the data and statistics that allowed you to draw this conclusion.
- If you have multiple numerical results to report, it's often a good idea to present them in a figure (graph) or a table.
- Report the descriptive statistics, such as means and standard deviations, as well as the test statistic, degrees of freedom, obtained value of the test, and the probability of the result occurring by chance (p value).
- Test statistics and p values should be rounded to two decimal places.
- All statistical symbols that are not Greek letters should be italicized (*F, M, SD, N, t, p*, etc.).
- When reporting a significant difference between two conditions, indicate the direction of this difference, i.e., which condition was more/less/higher/lower than the other condition(s).
- Don't explain how or why you used a certain test unless it is unusual.

4.14. *P* VALUES

There are two ways to report p values. One way is to use the alpha level (the a priori criterion for the probability of falsely rejecting your null hypothesis), which is typically.05 or.01. Example: $F(1, 24) = 44.4$, $p < 0.01$). You may also report the exact p value (the a posteriori probability that the result that you obtained, or one more extreme, occurred by chance). Example: $t(33) = 2.10$, $p = 0.03$. If your exact p value is less than.001, it is conventional to state merely $p < 0.001$. If you report exact p values, state early in the results section the alpha level used as a significance criterion for your tests. Example: "We used an alpha level of.05 for all statistical tests.

4.15. REPORTING RESULTS OF COMMON STATISTICAL TESTS IN APA FORMAT



4.15.1. t-Test

- **Reporting a Significant Single Sample t-Test ($\mu \neq \mu 0$):** Students taking statistics courses in psychology at the University of Washington reported studying more hours for tests ($M = 121$, $SD = 14.2$) than did UW college students in general, $t(33) = 2.10$,

$p = 0.034$.

- **Reporting a Significant t-Test for Dependent Groups ($\mu 1 \neq \mu 2$):** Results indicate a significant preference for pecan pie (M = 3.45, SD = 1.11) over cherry pie (M = 3.00, SD = 0.80), $t(15) = 4.00$, $p = 0.001$.
- **Reporting a Significant t-Test for Independent Groups ($\mu 1 \neq \mu 2$):** UW students taking statistics courses in Psychology had higher IQ scores (M = 121, SD = 14.2) than did those taking statistics courses in Statistics (M = 117, SD = 10.3), $t(44) = 1.23$, $p = 0.09$. Over a two-day period, participants drank significantly fewer drinks in the experimental group (M= 0.667, SD = 1.15) than did those in the wait-list control group (M= 8.00, SD= 2.00), $t(4) = –5.51$, $p = 0.005$.

4.15.2. ANOVA

- **Reporting a Significant Omnibus F-Test for a One-Way ANOVA:** An analysis of variance (ANOVA) showed that the effect of noise was significant, $F(3.27) = 5.94$, $p = 0.007$. Post hoc analyzes using the Scheffé post hoc criterion for significance indicated that the average number of errors was significantly lower in the white noise condition (M = 12.4, SD = 2.26) than in the other two noise conditions (traffic and industrial) combined (M = 13.62, SD = 5.56), $F(3, 27) = 7.77$, $p = 0.042$.
- **Reporting Results of Major Tests in Factorial ANOVA:** *Non-significant interaction* Attitude change scores were subjected to a two-way ANOVA having two levels of message discrepancy (small, large) and two levels of source expertise (high, low). All effects were statistically significant at the 0.05 significance level. The main effect of message discrepancy yielded an F ratio of $F(1, 24) = 44.4$, $p < 0.001$, indicating that the mean change score was significantly greater for large-discrepancy messages (M = 4.78, SD = 1.99) than for small discrepancy messages (M = 2.17, SD = 1.25). The main effect of source expertise yielded an F ratio of $F(1, 24) = 25.4$, $p < 0.01$, indicating that the mean change score was significantly higher in the high-expertise message source (M = 5.49, SD = 2.25) than in the low-expertise message source (M = 0.88, SD = 1.21). The interaction effect was non-significant, $F(1, 24) = 1.22$, $p > .05$.

- **Reporting Results of Major Tests in Factorial ANOVA: Significant Interaction:** A two-way ANOVA yielded a main effect for the diner's gender, $F(1, 108) = 3.93$, $p < 0.05$, such that the average tip was significantly higher for men ($M = 15.3\%$, $SD = 4.44$) than for women ($M = 12.6\%$, $SD = 6.18$). The main effect of touch was non-significant, $F(1, 108) = 2.24$, p >.05. However, the interaction effect was significant, $F(1, 108) = 5.55$, $p < 0.05$, indicating that the gender effect was greater in the touch condition than in the non-touch condition.

4.15.3. Correlation

- **Reporting a Significant Correlation:** Hours spent studying and GPA were strongly positively correlated, $r(123) = 0.61$, $p = 0.011$. Hours spent playing video games and GPA were moderately negatively correlated, $r\ (123) = 0.32$, p = 0.041.

4.15.4. Chi-Square

- **Reporting the Results of a Chi-Square Test of Independence:** A chi-square test of independence was performed to examine the relation between religion and college interest. The relation between these variables was significant, $X2\ (2, N = 170) = 14.14$, $p < 0.05$.
- **Reporting the Results of a Chi-Square Test of Goodness of Fit:** A chi-square test of goodness-of-fit was performed to determine whether the three sodas were equally preferred. Preference for the three sodas was not equally distributed in the population, $X2\ (2, N = 55) = 4.53$, $p < 0.05$.

4.16. DISCUSSION

The Discussion section contains the conclusions that can be drawn from the results. Be sure to restate the hypotheses here (though more generally than you did in the results section, e.g., discuss hypotheses with reference to individual behavior). Mention whether the prediction(s) was(were) supported. Mention whether these results are similar to the results that were found in the literature that was cited in the introduction, and if not, try to explain why. For predictions that were not supported try to suggest reasons why this may have occurred. Also, be sure to address the limitations of the present

study by focusing on Internal Validity, External Validity (generalizability to population and ecological validity), and Measurement Validity (e.g., what cannot be concluded with from your results). Discuss how your results inform the psychological community with respect to the issue at hand. Include ideas for future research and, possibly, how this research affects the nature of the universe as we know it. Here you will examine, interpret, and qualify the results and draw inferences and conclusions from them. You should emphasize any theoretical or practical consequences of the results. You should open the discussion (sometimes heated *discussion*, sometimes *conclusion*, and sometimes both) section with a clear statement of the support or nonsupport for your original hypotheses, distinguished by primary and secondary hypotheses.

Points to Ponder:

- Do not simply reformulate and repeat points already made.
- Each new statement should contribute to your interpretation and to the reader's understanding of the problem.
- If an intervention is involved, you should discuss whether it was successful and the mechanism by which it was intended to work and/or alternative mechanisms.
- You should discuss barriers to implementing the intervention or manipulation as well as the fidelity with which the intervention or manipulation was implemented in the study.
- You may also consider the following issues:
- What is the theoretical, clinical, or practical significance of the outcomes, and what is the basis for these interpretations? If the findings are valid and replicable, what real-life psychological phenomena might be explained or modeled by the results? Are applications warranted on the basis of this research?
- What problems remain unresolved or arise anew because of these findings?

The responses to these questions are the core of the contribution of your study and justify why readers both inside and outside your own specialty should attend to the findings.

4.17. CONCLUSIONS

Conclusions wrap up what you have been discussing in your paper. After moving from general to specific information in the introduction and body paragraphs, your conclusion should begin pulling back into more general

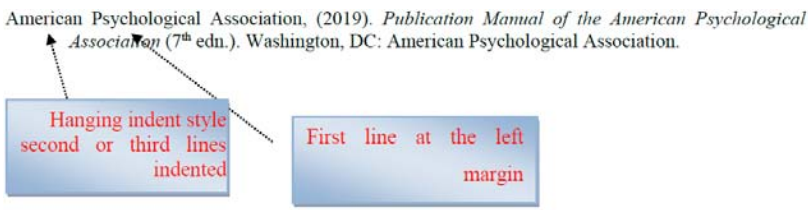
information that restates the main points of your argument. Conclusions may also call for action or overview future possible research.

Points to Ponder:

- Restate your topic and why it is important.
- Restate your thesis/claim.
- Address opposing viewpoints and explain why readers should align with your position.
- Call for action or overview future research possibilities.

4.18. REFERENCES

Each citation mentioned in your paper must be presented in APA format in the list of references. The accuracy of the references must be double-checked by returning to the original source and confirming all information (authors, titles, pages, dates, etc.). It is your obligation to have actually read the original source or cite it as a "secondary source." Only materials that were actually cited in the paper are presented in the reference list. This is not a bibliography, but a list of those papers "referenced" in the actual manuscript. References are listed by author, and the general format is in "hanging indent style" with the second or third lines indented, and the first line at the left margin. Everything is double spaced and should be in APA format.



CHAPTER 5

QUANTITATIVE DATA ANALYSIS

At the end of this chapter, students will learn:

- The primary purposes of quantitative analysis;
- Descriptive statistics and inferential statistics;
- Parametric and non-parametric Statistics;
- Analysis of differences Between Groups;
- The Independent Samples T-Test;
- Paired Sample t-test;
- Mann-Whitney U;
- Kruskal-Wallis;
- The analysis of variance (ANOVA);
- One-way repeated-measures ANOVA;
- Analysis of covariance (ANCOVA): One-way ANCOVA;
- Mauchly's Test;
- Friedman's Test;
- Chi-Square;
- Pearson Product-Moment Correlation;
- Linear Regression Analysis;
- Factor Analysis;
- Structural Equation Modeling (SEM).

5.1. THE PRIMARY PURPOSES OF QUANTITATIVE ANALYSIS

Some of the primary purposes of quantitative analysis are to:

- Measure;
- Make comparisons;
- Examine relationships;
- Make forecasts;
- Test hypotheses;
- Construct concepts and theories;
- Explore;
- Control;
- Explain.

5.2. DESCRIPTIVE STATISTICS AND INFERENTIAL STATISTICS

1. **Descriptive Statistics:** It is a set of statistical procedures that are used to describe, and summarize characteristics of sample data in a clear and understandable way, both numerically and graphically. some of the descriptive statistics procedures include measures of central tendency (such as *the mean, mode, or median*), and variability (typically the variance or *standard deviation*) and in graphical presentations frequency distribution, bar graph, histogram, frequency polygon, pie chart, normal distribution, and skewed distribution.
2. **Inferential Statistics:** A branch of statistics that is concerned with the development and applications of methods and techniques for drawing generalizations about a population on the basis of data obtained from a random sample, usually with a certain degree of uncertainty associated with it. Inferential statistics helps us to make inferences, estimates, or predictions about the characteristics of other groups of individuals on the basis of scores obtained from a single group. The rationale behind inferential statistics is that since the *sample* represents the population, what holds true for the sample probably also holds true for the population from which the sample was drawn (Table 5.1).

Table 5.1. Basic Comparison for Descriptive and Inferential Statistics

Basis for Comparison	**Descriptive Statistics**	**Inferential Statistics**
Meaning	Descriptive statistics is that branch of statistics which is concerned with describing the population under study.	Inferential statistics is a type of statistics that focuses on drawing conclusions about the population, on the basis of sample analysis and observation.
What it does?	Organize and present data in a meaningful way.	Compares and predicts data.
Form of final Result	Charts and tables	Probability
Usage	To describe a situation.	To explain the chances of occurrence of an event.
Function	It explains the data, which is already known, to summarize sample.	It attempts to reach the conclusion to learn about the population that extends beyond the data available.

There are two broad categories of inferential statistics known as *parametric and nonparametric* tests.

5.3. PARAMETRIC AND NON-PARAMETRIC STATISTICS

The parametric test is the hypothesis test which provides generalizations for making statements about the mean of the parent population. A t-test based on Student's t-statistic, which is often used in this regard. It is assumed that the variables of interest, in the population are measured on an interval scale. The nonparametric test is defined as the hypothesis test which is not based on underlying assumptions, i.e., it does not require population's distribution to be denoted by specific parameters. The test is mainly based on differences in medians. Hence, it is alternately known as the distribution-free test. The test assumes that the variables are measured on a nominal or ordinal level. It is used when the independent variables (IVs) are non-metric. Table 5.2 shows the basic comparison for parametric and nonparametric test.

Table 5.2. Basic Comparison for Parametric and Nonparametric Test

Basis for Comparison	**Parametric Test**	**Nonparametric Test**
Meaning	A statistical test, in which specific assumptions are made about the population parameter, is known as parametric test.	A statistical test used in the case of non-metric independent variables, is called non-parametric test.
Basis of test statistic	Distribution	Arbitrary
Measurement level	Interval or ratio	Nominal or ordinal
Measure of central tendency	Mean	Median
Information about population	Completely known	Unavailable
Applicability	Variables	Variables and Attributes
Correlation test	Pearson	Spearman

The parametric tests (e.g., t-*test, Analysis of variance (ANOVA), and Pearson-product-moment correlation coefficient)* make assumptions about the population from which the sample has been drawn. Non-parametric tests are also called distribution-free statistics because they do not require that the data be normally distributed. The nonparametric methods include the *binomial test, runs test, kolmogorov-smirnov two-sample test, kolmogorov-smirnov test for one sample, Mann-Whitney u test, Moses test, Wilcoxon signed-rank test, sign test, McNamara's test, Kruskal-Wallis test, median test, chi-square test, Friedman's test, mood's test, and spearman rank order correlation coefficient, among others*. Table 5.3 shows the non-parametric equivalent of a number of parametric tests (Figures 1 and 2).

Table 5.3. Parametric Statistics and Non-Parametric Alternative

Parametric Statistics	**Non-Parametric Alternative**
Independent-samples t-test	Mann-Whitney U-test
Paired-samples t-test	Wilcoxon signed rank test
Pearson correlation	Spearman's rank order correlation (rho)

One-way between-groups ANOVA	Kruskal-Wallis test
One-way repeated-measures ANOVA	Friedman test

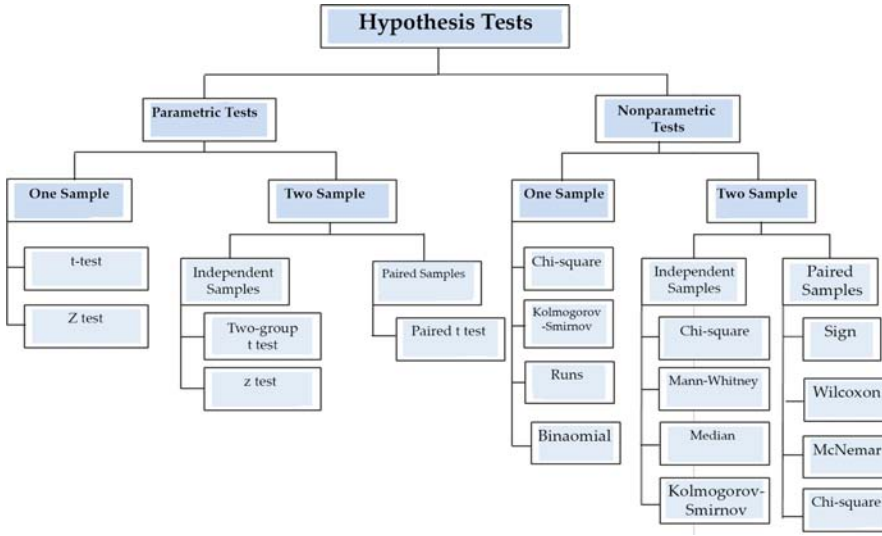


Figure 5.1. Parametric and non-parametric classification with one/two samples.

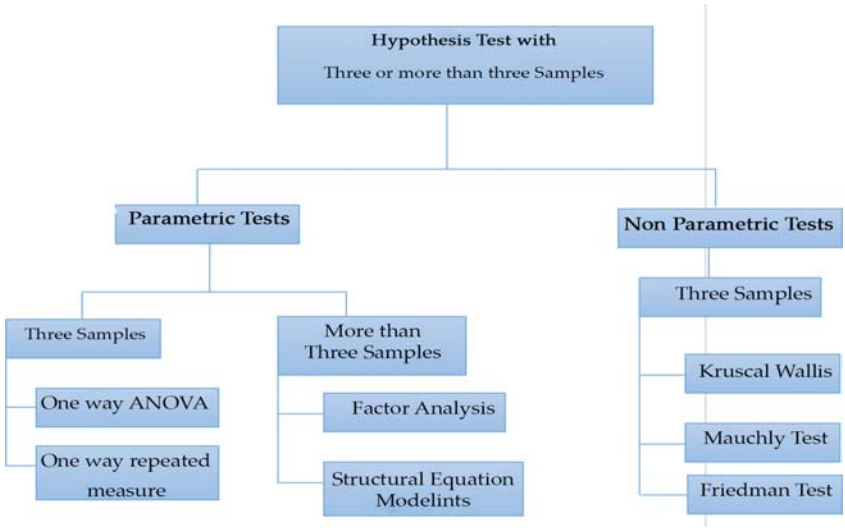


Figure 5.2. Parametric and non-parametric classification with three/more samples.

5.4. NORMALITY TESTS

5.4.1. Shapiro-Wilk and Kolmogorov-Smirnov Tests

Many of the parametric tests of significance require that the distribution of the population involved be normal or nearly normal in shape. The simplest methods for detecting violation of the normality assumption are graphical methods, such as *stem-and-leaf plots*, *Box plots, or histograms,* or statistical procedures such as the *Shapiro-Wilk test.* The tests mentioned above compare the scores in the sample to a normally distributed set of scores with the same mean and standard deviation; the null hypothesis is that "sample distribution is normal." If *the test is significant*, the distribution is non-normal. For small sample sizes, normality tests have little power to reject the null hypothesis and therefore small samples most often pass normality tests. A limitation of the K-S test is its high sensitivity to extreme values; the Lilliefors correction renders this test less conservative. The Shapiro-Wilk Test is more appropriate for small sample sizes (< 50 samples), but can also handle sample sizes as large as 2000.

Ø **Points to Ponder:**

- If the Kolmogorov-Smirnov test is significant (e.g., $p < 0.05$) then it indicates that the distribution of our sample is significantly different from the distribution against which it is being compared, e.g., a normal distribution (therefore the sample distribution does not fit the assumption of normality).
- If the chosen alpha level is 0.05 and the p-value is less than 0.05, then the null hypothesis that the data are normally distributed is rejected. If the p-value is greater than 0.05, then the null hypothesis is not rejected.
- Kolmogorov's D statistic also called the Kolmogorov-Smirnov statistic.
- The D refers to the Kolmogorov-Smirnov D test statistic.
- In statistics, the Kolmogorov-Smirnov test (K-S test or KS test) is a nonparametric test of the equality of continuous.

How to run The K-S and Shapiro-Wilk tests in SPSS?

The K-S and Shapiro-Wilk tests can be conducted in the SPSS Explore procedure.

(Analyze → Descriptive Statistics → Explore → Plots → Normality plots with tests).

5.4.2. Reporting the Output of Normality Tests

In order to probe the first null hypothesis stating listening comprehension tasks (SW and FIB) have any effects on Iranian EFL learners' initial incidental vocabulary learning, Shapiro-Wilk test was conducted to check the normality of the test. The Shapiro-Wilk Test is more appropriate for small sample sizes (< 50 samples). Table 5.4 presents the result of normality test.

Table 5.4. Normality Test for the Test of Sentence Writing

	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**		
	Statis-tic	**df**	**Sig.**	**Statis-tic**	**df**	**Sig.**
Pretest SW	0.312	36	0.000	0.775	36	0.000
Immediate posttest SW	0.217	36	0.000	0.912	36	0.007

[a]Lilliefors significance correction.

As indicated in the table, listening comprehension tasks scores of D(36) = 0.000, $p < 0.05$, and does significantly deviate from normality.

5.5. ANALYSIS OF DIFFERENCES BETWEEN GROUPS

5.5.1. The t-Test and the Analysis of Variance (ANOVA)

5.5.1.1. The Independent Samples t-Test

The *t*-test was developed by William Gossett, a scientist who worked for Guinness and published his work using the pseudonym Student. That is why the *t*-test is sometimes referred to as Student's *t* in some sources. The *t*-test is a statistical method that evaluates whether there is a statistically significant difference between the means of two samples and whether the difference is large enough to have been caused by the IV.

Rejecting or accepting the null hypothesis is decided by evaluating *the level of significance* (α) or *the* p *value* of the statistical test. The *P* value and t *statistic* are linked in that the greater the *t* statistic, the stronger the evidence against the null hypothesis which states that there is no significant difference between the groups. The *p* value determines the likelihood of

obtaining (non-)significant differences between the two groups. If the level of significance is small ($p < 0.05$ or 0.01), then the null hypothesis is rejected, but if it is larger than 0.05 or 0.01, the null hypothesis is supported (Ott and Longnecker, 2001). The *p* value of 0.001 means that there is only one chance in a thousand of this outcome occurring due to sampling error, given that the null hypothesis is true.

An independent samples *t*-test, you need one *independent* categorical variable and one *dependent* continuous variable. The IV in a *t*-test is simply a variable with only two levels or categories (e.g., men and women). If we have more than two groups, we will need to use ANOVA instead.

Ø **Points to Ponder:**

There are several assumptions underlying this test:

- Independence assumption, i.e., the group is independent of each other;
- Normality, i.e., the DV is normally distributed within each group;
- Homogeneity of variance, i.e., the two groups come from two populations whose variances are approximately the same.
- The *t*-test is considered a ROBUST statistic. Therefore, even if the assumption of the homogeneity of variance or normality is not fully met, the researcher can probably still use the test to analyze the data.
- As in several other statistical tests, researchers usually try to have a group size of at least 30.
- When the homogeneity of variance assumption is not met and there are unequal numbers of observations in the samples, the usual method to use as an alternative to the independent *t*-test is the Welch's test.
- The nonparametric alternative to an independent-samples *t*-test is the Mann Whitney *U* Test.

How to run an Independent Samples t Test in SPSS?

To run an Independent Samples t Test in SPSS, click Analyze > Compare Means > Independent-Samples *t* Test.

5.5.1.2. Reporting the Output of t-Test

In order to probe the null hypothesis stating that scaffolding has no effect on elementary Iranian EFL learners' grammar, an independent sample *t*-test

was conducted. Before running the test the normality of the test was checked through One-Sample Kolmogorov-Smirnov Test for the pretest of grammar. Table 5.5 shows the result of Kolmogorov-Smirnova test which indicates the distribution of grammar test with the normal mean. Therefore, the result is significant (sig= 0.200) which retain the null hypothesis. Table 5.5 indicates the result.

Table 5.5. One-Sample Kolmogorov-Smirnov Test for the Pretest of Grammar

Pretest Statistic		**Kolmogorov-Smirnov[a]**			**Shapiro-Wilk**		
		Df	**Sig.**	**Statistic**	**df**	**Sig.**	
Grammar	Control pretest	0.129	30	0.200*	0.952	30	0.194
	Experimental pretest	0.166	30	0.034	0.940	30	0.092

*This is a lower bound of the true significance.

[a]Lilliefors significance correction.

The normality tests are sensitive to sample sizes. The Shapiro-Wilk Test is more appropriate for small sample sizes (< 50 samples).

The results indicated that the test is normal. Thus, an independent sample T-test was run to tap the participant differences in the pretest of grammar. As indicated in Table 5.6, the significant level for Levene's test is.152. This is larger than the cut-off of.05. This means that the assumption of equal variances has not been violated.

As indicated in table, the sig (2-tailed) value is.328. This value is greater than the required cut-off of.05. This means that the assumption of equal variances has not been violated. In order to probe the null-hypothesis, an independent-sample t-test was run on the participants' scores of posttests in grammar test to compare the mean scores of both groups. Table indicates the sig (2-tailed) value is.000. This value is below the required cut-off of.05. Therefore, there is a statistically significant difference in the mean of grammar accuracy. The significant difference in the scores for control posttest (*M = 13.36, SD* = 1.56, and experimental posttest (*M* = 15.86, SD=*1.27, t*(58)= –6.77). The findings indicate that experimental group performed better than the control group for the grammar test. Therefore, the

null hypothesis was rejected. In other words, scaffolding was significantly effective for the grammar of Iranian EFL learners at elementary level.

Table 5.6. Independent Samples T-Test for the Posttest of Grammar

		Levene's Test for Equality of Variances		t-Test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Grammar	Equal variances assumed	0.97	0.32	6.7	58	0.000	2.50000	0.36896	−3.23	−1.761
	Equal variances not assumed			6.7	55	0.000	2.50000	0.36896	−3.23	−1.760

5.5.1.3. Paired Sample t-Test

Paired Sample t-test is a type of *t*-test used when we have only one group of participants and we collect data from them on two different occasions (e.g., Time A, Time B) or under two different conditions (e.g., Condition A, Condition B). A typical example is a comparison of pretest and posttest scores obtained from one group of subjects. We assess each person on some *continuous* measure at Time A, and then again at Time B, after exposing them to some experimental manipulation or intervention. Paired-samples *t*-tests can also be used when we measure the same person in terms of his/her response to two different questions or items.

Ø **Points to Ponder:**

- The most important requirement for conducting this *t*-test is that the two sets of scores are paired.
- It is also assumed that the samples were randomly selected.
- The two samples have equal population variances.
- The sample size must be equal for the two samples due to the pairing of scores.
- The dependent *t*-test is quite robust to violation of the homogeneity of variance assumption.
- With sample sizes of 30+, violation of normality is unlikely to

cause any serious problems.

- The nonparametric alternative to a paired-sample *t*-test is the *Wilcoxon; matched-pairs signed-ranks test.*
- Once a t value is and its associated p value are obtained, it becomes possible to calculate an *effect size (d)* to express the magnitude of the difference between the Cohen's d index denotes the distance between means of two groups in terms of standard deviations and can be computed by using the formula:
- $d= (x_1 – x_{2)} \div MSD$.
- According to Cohen (1988), effect sizes can be classified as small, d = 0.2, medium, d = 0.5, and large, d = 0.8.

5.5.1.4. Reporting the Output of Paired T-Test

In order to probe the null hypothesis stating *Initiation/response/follow up (IRF) has no effect on pre-intermediate students' speaking* a paired T-test was run on the participants' scores of pre and post-tests to compare the mean scores of both tests in the same group. The following table shows the result of Kolmogorov Smirnova test which indicates the distribution of IRF with the normal mean. Therefore, the result is significant for the pretest (*sig* = 0.446; *M* = 16.14; *SD* = 1.86). The distribution of IRF is also normal with the mean of 18.09 and standard deviation 2.31. In other words the distribution of IRF for the pretest and posttest is normal which retain the null hypothesis.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of IRF pretest is normal with mean 16.14 and standard deviation 1.86.	One-Sample Kolmogorov Smirnov Test	.446	Retain the null hypothesis.
2	The distribution of IRF posttest is normal with mean 18.09 and standard deviation 2.31.	One-Sample Kolmogorov Smirnov Test	.350	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Table 5.7 presents the results of paired T-test for both Pretest and posttest in IRF.

Table 5.7. Descriptive Statistics of IRF Pretest-Posttest

	Mean	**N**	**Std. Deviation**	**Std. Error Mean**
IRF pretest Pair 1 IRF posttest	16.136	22	1.8592	0.3964
	18.0909	22	2.30753	0.49197

As indicated in the Table 5.7 the mean of students' scores for the pretest is 16.13 and the posttest is 18.09 with the standard deviation of 1.85 and 2.30 respectively. To seek if the differences between the mean is significant a paired sample t-test was conducted. The results are presented in Table 5.8.

Table 5.8. Paired Sample t-Test for IRF Pretest and Posttest

Mean		**Paired Differences**					**T**	**df**	**Sig. (2-Tailed)**
		Std. Deviation	**Std. Error Mean**	**95% Confidence Interval of the Difference**					
				Lower	**Upper**				
Pair 1	IRF pretest-IRF posttest	–1.95	2.10390	0.44855	–2.88736	–1.02173	–4.35	21	0.000

As indicated in the Table 5.8 a paired sample t-test was conducted to evaluate the impact of intervention on students' score on the IRF test. There was a statistically significant decrease in IRF scores in pretest (M =16.13, SD =1.85) to posttest (M =18.09, SD=2.30), $t(21) = 0.000$, $p < 0.05$). The results indicate that there is statistically significant difference between two tests. In other words the intervention for IRF was effective on the pre-intermediate students' speaking performance.

How to run a paired sample t-test in SPSS?

To run a Paired Samples t Test in SPSS, click Analyze > Compare Means > Paired-Samples T Test. The Paired-Samples T Test window opens where you will specify the variables to be used in the analysis

5.6. MANN-WHITNEY U-TEST

The non-parametric equivalent of the independent samples *t*-test is the Mann-Whitney U test, which counts the number of the pairs for which scores from the first group is higher. Before opting for a parametric or non-parametric test, it would be advisable to check whether the data are normally distributed. When conducting *exploratory data analysis*, this can be done

using *histograms* and *stem-and-leaf plots* and running *normality tests* (e.g., *Kolmogorov-Smirnov* tests).

Mann-Whitney *U* test is used with one *categorical* IV with two LEVELs (e.g., gender: female/male) and one *ordinal* dependent variable. It tests whether the number of times scores from one sample are ranked higher than scores from the other sample when the scores for both samples have been ranked in a single sample. If the two sets of scores are similar, the number of times this happens should be similar for the two groups.

Ø **Points to Ponder:**

- If the samples are 20 or less, the Statistical Significance of the smaller *U* value is used.
- If the samples are greater than 20, the *U* value is converted into a *Z* VALUE. The value of *z* has to be 1.96 or more to be statistically significant at the 0.05 two-tailed level or 1.65 or more at the 0.05 one-tailed level.
- It is often used in place of the *t*-test for independent groups when there is an extreme violation of the *normality or homogeneity of variance* assumptions.
- or when the data are scaled at a level that is not appropriate for the *t*-test (i.e., the data are ordinal in nature).

5.6.1. Reporting the Output of Mann-Whitney U

In order to seek if the difference between experimental and control group is significant, *Mann Whitney U test* was conducted. The results are presented in Tables 5.9–5.11.

Table 5.9. Descriptive Statistics of Listening Test

	N	Mean	Std. Deviation	Minimum	Maximum
Score	72	7.4028	1.74952	3.00	10.00
Group	72	1.5000	.50351	1.00	2.00

Table 5.10. Mean Ranks for the EFL Learners on Listening Test

Group	N	Mean Rank	Median	Sum of Ranks
Experimental	36	36.75	2.5	1323.00

Control	36	36.25	2	1305.00
Total	72			

Table 5.11. Mann-Whitney U-Test for EFL Learners Performance on Listening Test

	Score
Mann-Whitney U	639.000
Wilcoxon W	1305.000
Z	–0.103
Asymp. Sig. (2-tailed)	0.65

[a]Grouping Variable: group.

Descriptive statistics revealed that participants in experimental group (*M* = 36.75, *Mdn* = 2.5) and control group (*M* = 36.25, *Mdn* = 2) performed similarly on the listening test. Moreover, the Mann-Whitney U index was found to be 639 (*z* = –0.103) with *an associated probability* of (*p*) 0.55, which indicated that the difference between the groups may be due to the sampling error. These results also suggested that the two groups were similar in terms of their performance on the Listening test, i.e., the result is not significant despite their initial difference in the mean (sig= 0.689).

How to run a Mann Whitney U test in SPSS?

To run a *Mann Whitney U test* in SPSS, click Analyze > Compare Means > Paired-Samples T Test. Analyze > Nonparametric Tests > Legacy Dialogs > 2 Independent Samples.

5.7. WILCOXON SIGNED RANK

The nonparametric equivalent of the paired samples *t*-test is the Wilcoxon signed-rank test, which utilizes the score rankings and compares the sample mean ranks. Wilcoxon matched-pairs signed-ranks test is used to determine whether the two sets of data or scores obtained from the same individuals (as in a pretest /posttest situation) are significantly different from each other. It is used when you have one *categorical* IV with two *levels* (the same participants are measured two times, e.g., Time 1, Time 2, or under two different conditions) and one ordinal dependent variable.

5.7.1. Reporting the Output of Wilcoxon Signed Rank

In order to probe the first null hypothesis stating listening comprehension tasks, sentence writing (SW) and fill in the blank (FIB), have any effects on Iranian EFL learners' initial incidental vocabulary learning, Shapiro-Wilk test was conducted to check the normality of the test. Table 5.12 presents the result of test normality.

Table 5.12. Tests of Normality for EFL Learners' Initial Incidental Vocabulary Learning

	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**		
	Statistic	**Df**	**Sig.**	**Statistic**	**df**	**Sig.**
Pre_test_SW	0.312	36	0.000	0.775	36	0.000
Immediate_ posttest_SW	0.217	36	0.000	0.912	36	0.007

[a]Lilliefors significance correction.

As indicated in the table, the value of the Shapiro-Wilk Test is below 0.05 ($p < 0.05$). since the data significantly deviate from a normal distribution, Wilcoxon Signed ranks test was run as the nonparametric test. Table 5.13 presents the results of Wilcoxon Signed ranks test for the group A (SW).

Table 5.13. Wilcoxon Signed Ranks Test for EFL Learners' Initial Incidental Vocabulary Learning

	Immediate_posttest_SW-Pre_test
Z	–5.256[b]
Asymp. Sig. (2-tailed)	0.000

[a]Wilcoxon signed ranks test.

[b]Based on negative ranks.

As indicated in Table 5.13, the Wilcoxon Signed ranks index was found to be –5.256 ($z = –5.256$) with *an associated probability* of (p) 0.00, which indicated that the SW listening comprehension task effects on Iranian EFL learners' initial incidental vocabulary learning.

How to run a Wilcoxon Signed ranks in SPSS?

Click Analyze > Nonparametric Tests > Legacy Dialogs > 2 Related Samples.

5.8. THE ANALYSIS OF VARIANCE (ANOVA)

ANOVA was developed by the British statistician Ronald Fisher. ANOVA is an extension of the *t*-test and analyzes how likely it is that any differences between more than two conditions are due to chance. While the *t*-test compares two levels of an IV, ANOVA, which is a *multi-groups design* statistical test, compares three and more levels of an IV. Since ANOVA is a parametric test, the same statistical assumptions mentioned for the *t*-tests need to be satisfied before its use. For instance, one of these statistical assumptions is the *homogeneity of variance*, which means that conditions or groups need to have equal variances. This assumption can be tested by using *the Levene's test*, which checks to see if the groups' variances are equal or not.

Although ANOVA examines the differences between the means, it is called the ANOVA because it compares the means of more than two groups by using two estimates of the variance. The first estimate of variance is the variability *between each sample* mean and the grand (i.e., overall) mean. The second variance pertains to the variability *within each group*. when *F* indicates a statistically significant difference among the groups, instead of running multiple *t*-tests, the use of post hoc multiple comparison tests is suggested. Among the most well-known post hoc comparison tests are the *Tukey HSD (honestly significant difference) test*, the *Scheffe test*, and the *Newman-Keuls test*, which all conduct *pair wise comparisons* to examine the difference between two groups.

Ø **Points to Ponder:**

- ANOVA uses the test statistic, *F*, which is a ratio of the between-groups variance and the within-groups variance.
- There are two types of ANOVA tests-*one-way ANOVA* and *factorial ANOVA* and their use is dependent on the number of IVs modeled.
- When the aim is to capture the differences between three or more groups on more than one IV, the design becomes a factorial ANOVA, which may be viewed as an extension of the one-way ANOVA.
- when the statistical assumptions that ANOVA makes cannot be

satisfied, researchers may need to use non-parametric equivalent of ANOVA. On these occasions, the *Kruskal-Wallis test* can be used as an alternative to one-way ANOVA, while *Friedman's test* can be used as an alternative to within-participants ANOVA.

How to run a Mann Whitney U test in SPSS?

5.8.1. Reporting the Output of One-Way ANOVA

Before applying the appropriate statistical test, the data were examined using descriptive statistics, histograms, and the Shapiro-Wilk test for normality. The results of these tests indicated that the data met the normality assumption In order to determine to what degree co-teaching condition facilitate acquisition of the three levels of mastery of the form-meaning link (form recall, meaning recall, and meaning recognition) a one-way ANOVA was conducted on subjects' performances on the Post-test grammatical collocations through reading. Table 5.14 represents the total learning gained from co-teaching input.

Table 5.14. Descriptive Statistics for the Mean Vocabulary Gains of the Levels of Form-Meaning

	N	**Mean**	**Std. Deviation**	**Std. Error**	**Minimum**	**Maximum**
MC	20	5.1000	1.07115	0.23952	3.00	7.00
Translation	20	7.7500	1.40955	0.31519	5.00	10.00
FIB	20	6.5500	1.53811	0.34393	3.00	9.00
Total	60	6.4667	1.72191	0.22230	3.00	10.00

As indicated in Table 5.14, the students gained different mean score for the three levels of form-meaning link. The table indicates the mean for the multiple choice is (x=5.10, SD= 1.07), translation (x= 7.75, SD= 1.40) and FIB (x= 6.55, SD= 1.53). This table demonstrates that translation level among the three levels of form-meaning link had the highest mean rank with the minimum 5.00 and maximum 10 score. To see if the differences in the mean were significant or not a one way ANOVA was ran. In order to check whether the variances in the scores are the same for each of the three levels, Leven's test for homogeneity of the variances was run. The results are illustrated in Table 5.15.

Table 5.15. Test of Homogeneity of Variances Among Three Levels

Levene's Statistic	df1	df2	Sig.
1.132	2	57	0.330

A Levene's test for homogeneity of variances showed that the variations of the groups were not significantly different from each other, thus indicating the assumption of homogeneity of variance was satisfied ($F(2.57) = 1.132$, $p = 0.330$). Figure 5.3 provides the means plot as an easy way to compare the mean scores for the different groups.

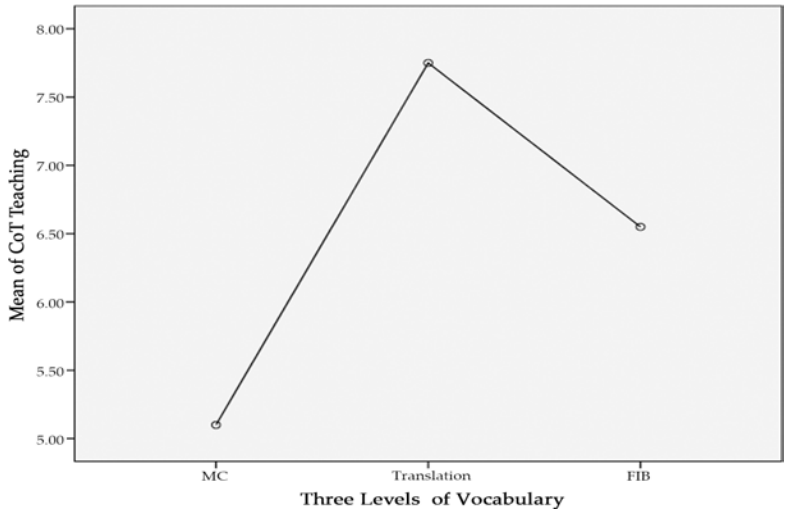


Figure 5.3. *The means plots for the three groups in the pretest.*

In order to see to what degree co-teaching condition facilitate acquisition of the three levels of mastery of the form-meaning link, a one-way ANOVA was run. The result is presented in the Table 5.16.

Table 5.16. One-Way ANOVA for the Degree Co-Teaching Condition

	Sum of Squares	df	Mean Square	F	Sig.
Between groups	70.433	2	35.217	19.209	0.000
Within groups	104.500	57	1.833		
Total	**174.933**	**59**			

As indicted in Table 5.16, There were statistically significant differences between group means as determined by one-way ANOVA ($F(2.57) = 19.209$, $p < 0.000$). Although the one-way ANOVA can indicate if the results obtained are significant, it does not tell which groups' means are different. Thus, Scheffe test, a post hoc comparison test, was employed to determine the group/s performing differently than the other groups. The results are presented in the Table 5.17.

Table 5.17. Post Hoc Scheffe Test Multiple Comparisons

(I) Task Complexity	(J) Task Complexity	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
MC	Translation	–2.65000*	0.42817	0.000	–3.7262	–1.5738
	FIB	–1.45000*	0.42817	0.005	–2.5262	–.3738
Translation	MC	2.65000*	0.42817	0.000	1.5738	3.7262
	FIB	1.20000*	0.42817	0.025	0.1238	2.2762
FIB	MC	1.45000*	0.42817	0.005	0.3738	2.5262
	Translation	–1.20000*	0.42817	0.025	–2.2762	–.1238

*The mean difference is significant at the 0.05 level.

Dependent variable: CoTeaching Scheffe.

As Table 5.17 indicates, there are significant main effects for all three levels: the effects of all factors are significant beyond the 0.05 level. This table illustrates, there is a significant difference among the levels of form-meaning link.

How to run a one-way ANOVA in SPSS?

To run a one-way ANOVA in SPSS, click analyze > compare means > one-way ANOVA. The one-way ANOVA window opens, where you will specify the variables to be used in the analysis.

5.9. KRUSKAL-WALLIS

Kruskal-Wallis test is a nonparametric test alternative to one-way ANOVA which is employed with ordinal (rank-order) data in a hypothesis testing situation involving a design with three or more independent groups of

participants. Kruskal-Wallis test is used to determine whether the mean ranked scores for three or more unrelated or independent samples differ significantly and is calculated based on the sums of the ranks of the combined groups. Hence, the Kruskal-Wallis procedure can be thought of as an extension of the Mann-Whitney *u* test in the same way that a one-way ANOVA is typically considered to be an extension of an independent samples *t* test—the Kruskal-Wallis and Mann-Whitney tests are mathematically equivalent when used to compare two groups. Kruskal-Wallis test produces a value (denoted by *H*), whose probability of occurrence is checked by the researcher in the appropriate statistical table.

5.9.1. Reporting the Output of the Kruskal-Wallis H Test

Kruskal-Wallis Test was conducted to examine the differences on reading strategies according to the types of reading strategies employed, i.e., *global reading strategies, Problem-solving strategies, Support reading strategies.* The Kruskal Wallis H test showed that there was a statistically significant difference (Chi square = 10.306, $p < 0.006$, $df = 2$) among the reading strategies, with a mean rank of 12.96 for Global reading strategies, 24.17 for Problem-solving strategies and 12.22 for Support reading strategies (Tables 5.18 and 5.19).

Table 5.18. Mean Rank for Collaborative Group

Reading Strategies		**N**	**Mean Rank**
Score	Global reading strategies	13	12.96
	Problem-solving strategies	9	24.17
	Support reading strategies	9	12.22
	Total	**31**	

Table 5.19. Kruskal-Wallis Test for Collaborative Group

	Score
Chi-Square	10.306
Df	2
Asymp. Sig.	0.006

[a]Kruskal Wallis test.

[b]Grouping variable: Reading strategies.

How to run the Kruskal-Wallis H Test in SPSS?

Click Analyze > Nonparametric Tests > Legacy Dialogs > K Independent Samples.

5.10. ONE-WAY REPEATED-MEASURES ANOVA

A repeated-measures ANOVA with a single within-subjects factor in which all subjects are exposed to two or more different treatment conditions, or measured on two or more occasions. That is, the same subjects are measured on all levels of the repeated measures IV or at different points in time. More specifically, one-way repeated measures ANOVA involves two variables: one *categorical* IV with two or more levels (e.g., Time 1, Time 2, Time 3, or Condition A, Condition B, Condition C); and one *continuous* dependent variable (e.g., scores on an achievement test). It can also be used to compare respondents' responses to two or more different questions or items.

5.10.1. Reporting the Output of One-Way Repeated-Measures ANOVA

A repeated measures ANOVA with a Greenhouse-Geisser correction determined that mean CRP concentration differed statistically significantly between time points ($F(1.171, 22.257) = 21.032$, $P < 0.0005$). Post hoc tests using the Bonferroni correction revealed that exercise training elicited a slight reduction in CRP concentration from pre-training to 2-weeks of training (3.09 ± 0.98 mg/L vs 2.97 ± 0.89 mg/L, respectively), which was not statistically significant ($p = 0.149$). However, post-training CRP had been reduced to 2.24 ± 0.50 mg/L, which was statistically significantly different to pre-training ($p < 0.0005$) and 2-weeks training ($p = 0.001$) concentrations. Therefore, we can conclude that a long-term exercise training program (6 months) elicits a statistically significant reduction in CRP concentration, but not after only 2 weeks of training.

How to run One-way repeated-measures ANOVA in SPSS?
Click Analyze > General Linear Model > Repeated Measures.

5.11. MAUCHLY'S TEST

Mauchly's test of sphericity *(Mauchly's Test)* is a test of sphericity in a repeated-measures ANOVAS. A significant Mauchly's test indicates that the assumption of sphericity is not met. Violating this assumption inflates type I error rate. Like many tests, the ANOVA makes certain assumptions about

the data used. Violations of these assumptions tend to affect the value of the test adversely. One assumption is that the variances of each of the cell s should be more or less equal. In repeated-measures ANOVAs, it is also necessary that the Covariances of the differences between each condition are equal.

- The Greenhouse-Geisser is used to assess the change in a continuous outcome with three or more observations across time or within-subjects. In most cases, the assumption of *sphericity* is violated for this type of within-subjects analysis and the Greenhouse-Geisser correction is robust to the violation.
- Mauchly's sphericity test or Mauchly's *W* is a statistical test used to validate a repeated measures analysis of variance (ANOVA).
- In SPSS, three corrections are generated: the Greenhouse-Geisser correction (1959), the Huynh-Feldt correction (1976), and the lower-bound.

5.11.1. Reporting the Output of Mauchly's Test

A one-way repeated measures ANOVA was conducted to determine the effect of online collaboration through a social network site on students' writing ability in three different time points. Table 5.20 shows the descriptive statistics of repeated measures ANOVA. As it can be seen, the mean score of the learners' performance on three different points of time is different. The mean score of the first short story is 12.65, for the second administration it is 16.17 and for the last one it is 20.09.

Table 5.20. Descriptive Statistics of Repeated Measure ANOVA

	Mean	**Std. Deviation**	**N**
Short Story 1	12.65	5.33	23
Short Story 2	16.17	5.58	23
Short Story 3	20.09	5.49	23

Table 5.20 represents the Mauchly's test for the repeated measures ANOVA. The significance value is.06, which is more than.05, so we must accept the hypothesis that the variances of the differences between levels were not statistically different. In other words, the assumption of sphericity has not been violated (Table 5.21).

Table 5.21. Mauchly's Test of Sphericity

Measure: Story							
Within Subjects Effect	**Mauchly's W**	**Approx. Chi-Square**	**df**	**Sig.**	**Epsilon**		
					Greenhouse-Geisser	**Huynh-Feldt**	**Lower-Bound**
Time	0.76	5.55	2	0.06	0.81	0.86	0.50

Mauchly's Test of Sphericity indicated that the assumption of sphericity had been met $\chi^2(2) = 0.77$, $p > .05$, and therefore, a Greenhouse-Geisser correction was used. There was a significant effect between time points $F(2, 44) = 47.44$, $p < 0.05$). So, the first null hypothesis that online collaboration through a social network site does not help learners to improve their writing was rejected meaning the main effect of change over time was statistically significant (Table 5.22).

Table 5.22. Tests of Within-Subjects Effects

Measure: Story							
Source		**Type III Sum of Squares**	**Df**	**Mean square**	**F**	**Sig.**	**Partial Eta Squared**
Time	Sphericity assumed	636.26	**2**	**318.13**	**47.43**	**0.00**	0.68
	Greenhouse-Geisser	636.26	1.623	392.06	47.43	0.00	0.68
	Huynh-Feldt	636.26	1.734	367.01	47.43	0.00	0.68
	Lower-bound	636.26	1.00	636.26	47.43	0.00	0.68
Error (time)	Sphericity assumed	295.07	**44**	**6.70**			
	Greenhouse-Geisser	295.07	35.7	8.26			
	Huynh-Feldt	295.07	38.1	7.73			
	Lower-bound	295.07	22.0	13.41			

Post hoc tests using the Bonferroni correction revealed that online collaboration helped students to improve their writing from short story one to two and the following three consecutively. Searching the pairwise comparison table indicates that the mean from short story one ($M = 12.65$,

SD = 5.33) to short story two (*M* = 16.17, *SD* = 5.58) increased with the difference of –3.52 and *the probability of.000* which is lower than the alpha of.017 (0.05) showing the difference between time period 1 and time period 2 was statistically significant. The mean from short story one (*M* = 12.65, *SD* = 5.33) to short story three (*M* = 20.1, *SD* = 5.49) increased with the difference of –7.43 and the probability of 0.00 which is lower than the alpha of 0.017 (0.05) showing the difference between time period 1 and time period 3 was statistically significant. The mean from short story two (*M* = 16.17, *SD* = 5.58) to short story three (*M* = 20.1, *SD* = 5.49) increased with the difference of –3.91 and the probability of.000 which is lower than the alpha of 0.017 (0.05) showing the difference between time period 2 and time periods 3 was statistically significant (Table 5.23).

Table 5.23. Pair Wise Comparisons of the Three Writings

Measure: Story						
(I) Time	**(J) Time**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence Interval for Difference**	
					Lower Bound	**Upper Bound**
1	2	–3.52	0.57	0.00	–5.01	–2.03
	3	–7.43	0.90	0.00	–9.77	–5.09
2	1	3.52	0.57	0.00	2.03	5.01
	3	–3.91	0.77	0.00	–5.92	–1.90
3	1	7.43	0.90	0.00	5.09	9.77
	2	3.91	0.77	0.00	1.90	5.92

5.12. FRIEDMAN'S TEST

The Friedman test is a classic rank-based method for comparing multiple dependent or correlated groups. Friedman's test is a *nonparametric* alternative to One-way repeated measures ANOVA which is used for three or more related or matched samples that cannot be compared by means of an *F* TEST either because the scores are *ordinal* in nature or because the normality or homogeneity of variance assumptions cannot be satisfied. Whereas the Wilcoxon matched-pairs signed-ranks test is used to analyze two sets of scores obtained from the same individuals, the Friedman's test is used when there are three or more related sets of scores Friedman's test is

used when there are three or more related sets of scores. It is used when you have one *categorical IV* with three or more levels (the same participants are measured three or more times, e.g., Time 1, Time 2, Time 3, or under three or more different conditions) and one ordinal dependent variable.

Ø **Assumptions:**

- **Assumption #1:** One group that is measured on three or more different occasions.
- **Assumption #2:** Group is a random sample from the population.
- **Assumption #3:** Your dependent variable should be measured at the ordinal or continuous level.
- **Assumption #4:** Samples do NOT need to be normally distributed.

5.12.1. Reporting the Output of Friedman's Test

Ø **Descriptive Statistics:**

	N	Percentiles		
		25th	50th (Median)	75th
Eclectic method Classical Critical thinking	12 12 12	7.0000 6.2500 6.0000	7.5000 7.5000 6.5000	8.0000 8.0000 7.0000

Ø **Ranks:**

	Mean Rank
Eclectic method classical Critical Thinking	2.38 2.17 1.46

Ø **Test Statistics[a]:**

N **Chi-square** **Df** **Asymp. Sig**	**12** **7.600** **2** **0.022**

[a]Friedman test.

Ø **Test Statistics[b]:**

	Classical-Eclectic Method	CT-none	CT-Classical
Z	–0.61[a]	–2.636[a]	–1.811[a]
Asymp. Sig(2-tailed)	0.952	0.952	0.070

[a]Based on positive ranks.

[b]Wilcoxon signed ranks test.

There was a statistically significant difference in perceived effort depending on which type of methods was listened to whilst running, $\chi^2(2) = 7.600$, $p < 0.022$. Post hoc analysis with Wilcoxon signed-rank tests was conducted with a Bonferroni correction applied, resulting in a significance level set at $p < 0.017$. Median (IQR) perceived effort levels for the no method and CT running trial were 7.5 (7 to 8), 7.5 (6.25 to 8) and 6.5 (6 to 7), respectively. There were no significant differences between the eclectic method and classical method running trials ($z = –0.061$, $p > .952$) or between the classical and CT running trials ($z = –1.811$, $p > .070$), despite an overall reduction in perceived effort in the CT vs. classical running trials. However, there was a statistically significant reduction in perceived effort in the CT vs eclectic method ($z = –2.636$, $p < 0.008$).

How to run Friedman test in SPSS?

Click Analyze > Nonparametric Tests > Legacy Dialogs > K Related Samples.

5.13. ANALYSIS OF COVARIANCE (ANCOVA): ONE-WAY ANCOVA

ANCOVA is a statistical procedure which allows us to assess whether there are significant group differences on a single *continuous* dependent variable (DV), after statistically controlling for the effects of one or more continuous IVs (i.e., COVARIATEs). ANCOVA allows one or more *categorical* IVs and one continuous DV, plus one or more covariate(s). Thus, ANCOVA always has at least two IVs (i.e., one or more categorical, grouping IVs, and one or more continuous covariates). To be sure that it is the IV that is doing the influencing, ANCOVA statistically removes the effect of the covariate(s). By removing the influence of these additional variables, ANCOVA can increase the power or sensitivity of the *F* value. That is, it may increase the likelihood that you will be able to detect differences between your groups. ANCOVA is similar to and an extension of ANOVA in that they both examine

group differences with the same kinds of IVs and DV. ANCOVA, however, has greater capability to fine tune the nature of the group differences by including other possible confounding IVs or covariates.

Ø **Points to Ponder:**

- The one-way ANCOVA can be thought of as an extension of the one-way ANOVA to incorporate a covariate.
- The one-way ANCOVA is used to determine whether there are any significant differences between two or more independent (unrelated) groups on a dependent variable.
- Whereas the ANOVA looks for differences in the group means, the ANCOVA looks for differences in adjusted means (i.e., adjusted for the covariate).

Ø **Assumptions:**

- **Assumption #1:** Your dependent variable and covariate variable(s) should be measured on a continuous scale.
- **Assumption #2:** Your IV should consist of two or more categorical, independent groups.
- **Assumption #3:** You should have independence of observations, which means that there is no relationship between the observations in each group or between the groups themselves.
- **Assumption #4:** There should be no significant outliers.
- **Assumption #5:** Your residuals should be approximately normally distributed for each category of the IV.
- **Assumption #6:** There needs to be homogeneity of variances.
- **Assumption #7:** The covariate should be linearly related to the dependent variable at each level of the IV.
- **Assumption #8:** There needs to be homoscedasticity.
- **Assumption #9:** There needs to be homogeneity of regression slopes, which means that there is no interaction between the covariate and the IV.

Ø **Descriptive Statistics:**

Dependent variable: Post

Group	Mean	Std. Deviation	N.
Control	6.0467	0.61449	15

Int_1	5.8273	0.60412	15
Int_2	5.3113	0.50174	15
Total	5.7284	0.64307	45

Ø **Pair Wise Comparisons:**

Dependent Variable: Post

(l) Group (J) Group	**Mean Difference (l-J)**	**Std. Error**	**Sig[b]**	**95% Confidence Interval for Difference**	
				Lower Bound	**Upper Bound**
Control Int_1 Int_2	0.194* 0.587*	0.041 0.041	0.000 0.000	0.092 0.482	0.296 0.686
Int 1 Control Int_2	0.194* 0.390*	0.041 0.041	0.000 0.000	–0.296 0.288	–0.92 0.492
Int 2 Control Int_1	0.587* 0.390*	0.041 0.041	0.000 0.000	–0.686 –0.492	–0.482 0.–288

Based on estimated marginal means.

**The mean difference is significant at the 0.05 level.*

[b]*Adjustment for multiple comparisons: Bonferroni.*

Ø **Tests of Between-Subjects Effects:**

Dependent Variable: post

Source	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig**	**Partial Eta Squared**
Corrected model	17.687[a]	3	5.896	475.503	0.000	0.972
Intercept	0.001	1	0.001	0.120	0.731	0.003
pre	13.415	1	13.412	1081.692	0.000	0.963
group	2.616	2	1.308	105.512	0.000	0.837
Error	0.508	41	0.012			
Total	1498.874	45				
Corrected Total	**18.196**	**44**				

[a]R Squared = 0.972 (Adjusted R Squared = 0.970).

Ø **Estimates:**

Dependent Variable: post

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Control	5.988[a]	0.029	5.930	6.046
Int_1	5.794[a]	0.029	5.736	5.852
Int_2	5.404[a]	0.029	5.345	5.462

[a]Covariates appearing in the model are evaluated at the following values: pre = 5.9673.

5.13.1. Reporting the Output of One-Way ANCOVA

A one-way ANCOVA was conducted to compare the effectiveness of xxxxxxxxxx. Levene's test and normality checks were carried out and the assumptions met. There was a significant difference in mean posttest [$F(2.41) = 105.512, p < 0.000$] between the diets. Post hoc tests showed there was a significant difference between int 1 and int 2 ($p = 0.000$).

How to run One-way ANCOVA in SPSS?

To carry out an ANCOVA, select Analyze → General Linear Model → Univariate Put the dependent variable in the Dependent Variable box and the IV in the Fixed Factors box.

5.14. PEARSON PRODUCT-MOMENT CORRELATION

It is a parametric statistic which indicates the strength and direction of the relationship between two continuous variables (i.e., measured on an interval or ratio scales). In evaluating the extent to which two variables covary (i.e., vary in relationship to one another), the Pearson product-moment correlation coefficient (often referred to as *Pearson r*) determines the degree to which a linear relationship exists between the variables. One variable (usually designated as the *X* variable) is referred to as the IV or predictor and another variable, which is referred to as the dependent variable or criterion, is usually designated as the *Y* variable. The Pearson product-moment correlation coefficient (Pearson's correlation, for short) is a measure of the strength and direction of association that exists between two variables measured on at least an interval scale. A Pearson's correlation attempts to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient, *r*, indicates how far away all these data points are from this line of best fit.

Ø **Assumptions:**

- **Assumption #1:** for each subject in the study, there must be related pairs of scores, i.e., if a subject has a score on variable *X*, then the same subject must also have a score on variable Y;
- **Assumption #2:** the relationship between the two variables is linear (the relationship can be characterized by a straight line);
- **Assumption #3:** both variables are continuous (measured on interval or ratio scales);
- **Assumption #4:** The variability of scores on the *Y* variable should remain constant at all values of the *X* variable (also referred to as HOMOSCEDASTICITY);
- **Assumption #5:** both variables are normally distributed (i.e., a bivariate normal distribution); and
- **Assumption #6:** each pair of scores is independent from all other pairs.

5.14.1. Reporting the Output of Pearson Product-Moment Correlation

In order to probe the probable relationship between teacher creativity and time orientation, Pearson product-moment correlation coefficient was run. The results are presented below in Table 5.24.

Table 5.24. Pearson Correlation Coefficient between Teacher Creativity and Time Orientation

		Time Management Scale	**Self-Rating Creativity**
Time management scale	Pearson correlation	1	0.623**
	Sig. (2-tailed)		0.000
	N	202	202
Self-rating creativity	Pearson Correlation	0.623**	1
	Sig. (2-tailed)	0.000	
	N	202	202

**Correlation is significant at the 0.01 level (2-tailed).

A Pearson product-moment correlation was run to determine the relationship between time management scale and self-rating creativity. There was a strong, positive correlation between time management scale and self-rating creativity, which was statistically significant ($r = 0.623$, $n = 202$, $p < 0.01$).

How to run Pearson Product-Moment Correlation in SPSS?

To run a bivariate Pearson Correlation in SPSS, click Analyze > Correlate > Bivariate. The Bivariate Correlations window opens, where you will specify the variables to be used in the analysis.

5.15. LINEAR REGRESSION ANALYSIS

Linear regression is the next step up after correlation. It is used when we want to predict the value of a variable based on the value of another variable. The variable we want to predict is called the dependent variable (or sometimes, the outcome variable). The variable we are using to predict the other variable's value is called the IV (or sometimes, the predictor variable).

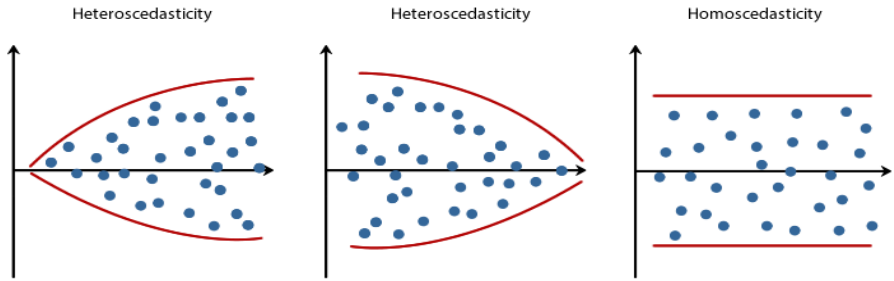
Ø **Points to Ponder:**

- *The first table* in Linear regression is the *Model Summary* table.
- The *R* value represents the simple correlation.
- The R^2 value (the "R Square" column) indicates how much of the total variation in the dependent variable, can be explained by the IV.
- *The second table* is the ANOVA table, which reports how well the regression equation fits the data (i.e., predicts the dependent variable).
- The ANOVA table indicates that the if the regression model predicts the dependent variable significantly well. Look at the "Regression" row and go to the "Sig." column.
- The Coefficients table provides us with the necessary information to predict price from income, as well as determine whether income contributes statistically significantly to the model (by looking at the "Sig." column).

Assumption:

- Assumption #1: Your two variables should be measured at the continuous level (i.e., they are either interval or ratio variables).
- Assumption #2: There needs to be a *linear relationship* between the two variables.

- Assumption #3: There should be *no significant outliers*.
- Assumption #4: You should have *independence of observations,* which you can easily check using the Durbin-Watson statistic.
- Assumption #5: Your data needs to show *homoscedasticity*, which is where the variances along the line of best fit remain similar as you move along the line.
- Assumption #6: Finally, you need to check that the *residuals (errors)* of the regression line are *approximately normally distributed*.



5.15.1. Reporting the Output of Linear Regression Analysis

To answer the research questions, students' performance on the gap filling and jigsaw group in the posttests are examined in Tables 5.25.

Table 5.25. Descriptive Statistics for Post-Test Gap-Filling Group

	N	Mean	SD	Std. Error of the Estimate	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Podcast	21	16.5	1.47	0.32	15.8	17.1
Video-short program	21	18.5	0.92	0.20	18.1	18.9
Topic-preparation	21	16.8	1.88	0.41	15.9	17.6
Total	63	17.3	1.71	0.21	16.8	17.7

Table 5.26 illustrates the mean and standard deviation of Post-Test Gap Fillings group. Table 5.26 indicates the mean and standard deviation of each

group respectively, i.e., podcast group (M = 16.52, SD = 1.47), video short program group (M = 18.57, SD = 0.92), and in the topic preparation group (M = 16.80, SD = 1.88).

Table 5.26. Descriptive Statistics for Post-Test Jigsaw Group

	N	**Mean**	**SD**	**Std. Error of the Estimate**	**95% Confidence Interval for Mean**		**Minimum**	**Maximum**
					Lower Bound	**Upper Bound**		
Podcast	21	16.7	2.21	0.48	15.7	17.7	12.00	20.00
Video short program	21	18.1	1.65	0.36	17.3	18.8	15.00	20.00
Topic	21	15.8	2.31	0.50	14.7	16.8	11.00	19.00
Total	63	16.9	2.26	0.28	16.3	17.4	11.00	20.00

In addition, Table 5.26 illustrates the descriptive statistics of students' performance on the Post-Test Jigsaw task. As indicated in the table the mean and standard deviation of Post-Test Jigsaw task for each group was as what follows: Podcast (M = 16.70, SD = 2.21), video short program group (M = 18.14, SD = 1.65), and topic preparation group (M = 15.80, SD = 2.31). The results reveal that the video short program group in both gap filling and jigsaw task outperformed the other participating groups. Moreover, the participants in the topic preparation group did better in gap filling than the podcast group. In addition, the participants in the podcast group outperformed the participants in topic preparation group in jigsaw test.

To determine the efficacy of three pre-listening tasks, i.e., podcast, video short programs and topic preparation, on the performance of students' listening comprehension in gap filling and jigsaw test, a stepwise multiple regression analysis was run. Table 5.27 reveals a model summary of multiple regression analysis for post-test gap filling.

Table 5.27. Model Summary of Multiple Regression Analysis Post-Test Gap Fillings

Model	R	R^2	Adjust R Square	Std. Error of the Estimate	Change Statistics				
					R^2 Change	F Change	df1	df 2	Sig. F Change
1	0.51[a]	0.26	0.230	0.87	0.269	6.983	1	19	0.016

[a]Predictor (constant): Podcast.

[b]Dependent variable: Gap filling.

Table 5.27 indicates that only podcast can predict the performance of students' listening comprehension in gap filling tasks. More specifically, R square (R^2 = 0.26) in podcast shows that podcast can predict 26% of the performance of Iranian EFL learners' listening comprehension in gap filling tasks.

Table 5.28 represents the standardized coefficients of students' performance in the podcast. This table illustrates that if we could increase podcast by one standard deviation then the listening comprehension scores in gap filling will increase 0.51 of a standard deviation.

Table 5.28. Standardized Coefficient of Gap Fillings Test

Model	Un-Standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	*Beta*		
1 (Constant) Podcast	12.8 0.253	1.5 0.096	0.51	8.2 2.6	0.000 0.016

How to run Linear Regression Analysis in SPSS?

Click Analyze > Regression > Linear.

5.16. CHI-SQUARE

The chi-square test for independence, also called Pearson's chi-square test or the chi-square test of association, is used to discover if there is a relationship between two categorical variables. Chi-square is used as a

measure of goodness-of-fit, the smaller chi-square is, the better the fit of the observed frequencies to the expected ones. A chi-square of *zero* indicates a perfect fit. a non-parametric test and a test of *significance* (pronounced 'ky' similar to 'by' and symbolized by the lowercase Greek letter χ) which is used to compare actual or observed frequencies with expected frequencies in sample data to see whether they differ significantly. Observed frequencies, as the name implies, are the actual frequencies obtained by observation. Expected frequencies are theoretical frequencies that would be observed when the null hypothesis is true. The chi-square test is most often used with *nominal* data, where observations are grouped into several discrete, mutually exclusive categories, and where one counts the frequency of occurrence in each category. The test works by comparing the *categorically* coded data (observed frequencies) with the frequencies that you would expect to get in each cell of a table by chance alone (expected frequencies).

Ø **Points to Ponder:**

- This procedure is used to test the relationship between the variables (how well they go together) rather than how one variable affects another.
- It does not allow us to make cause-effect claims.
- If the Chi-squared test is not valid and a 2 × 2 (two-by-two) table is being used, Fisher's exact-test can sometimes be utilized.
- Types of chi-square:
  - Chi-square goodness-of-fit test. is used when you have only one IV, and want to examine whether the distribution of the data is what is expected.
  - Chi-square test of independence is used when you have two IVs, with two or more levels each. This is used when you want to examine whether there is a relationship between the variables.
  - Chi-square test for homogeneity examines whether the relationship between treatment and outcome is the same across gender, for example.

Assumption:

- Assumption #1: Participants are categorized along one variable having two or more categories, and we count the frequency in each category;
- Assumption #2: Each participant can be in only one category (that is, you cannot have repeated measures);

- Assumption #3: Category membership is independent: The fact that an individual is in a category does not influence the probability that another participant will be in any category;
- Assumption #4: We include the responses of all participants in the study; and
- Assumption #5: For theoretical reasons, the expected frequency of each cell is 5 or more.

5.16.1. Reporting the Output of Chi-Square

To probe the first research question stating that if the turn-contents of the current exchanges of the EFL learners in the classroom based on the dialogical driven pedagogy, the semantic contents or functions of each turn taken by the students in the EFL classrooms were examined, and the number of incidence and frequency percentages were computed for them. Table 5.29 indicates the frequency and percentage of initiation move's functions.

Table 5.29. Frequency and Percentage of Initiation Move's Functions

Items	Functions	Observed Frequency	Percentage of the Functions	Expected Frequency	Residual
1.	Q	16	37.20%	10.8	5.2
2.	N	5	11.62%	10.8	–5.8
3.	SI	15	34.88%	10.8	4.2
4.	I	7	16.27%	10.8	–3.8
5.	**Total**	**43**			

1: Q = Question; 2: N = Nominating; 3: SI = Student initiations; 4: I= Informing.

To probe if the functions were equally used by the participants in the classrooms *a Chi-Square Test for Initiation Move's Functions* was conducted. Table 5.30 indicates the result.

Table 5.30. Chi-Square Test for Initiation Move's Functions

Test Statistics	
	Function

Chi-Square	8.628[a]
Df	3
Asymp. Sig.	0.035

[a]0 cells (0.0%) have expected frequencies less than 5.

[b]*The minimum expected cell frequency is 10.8.*

The results of Chi-square indicates that there was a significant difference among the number of initiation move's functions employed by the students and the teachers ($X^2 = 8.268$ $df = 3$, $p < 0.05$). Tables 5.29 also show that 37.20% of all the initiation moves were in the form of questions or elicitations. Besides questions, there were other types of initiations in these classrooms. The teachers used 5 nominating. Besides, 34.88% of the initiations functioned by the students to nominate themselves explicitly by their names, and 16.27% of the initiations used by students to give information. Table 5.31 indicates that the least initiation move function was nomination and most moves' function was question. This question proves a chance for the learners express their ideas and pave the ground for being a critical thinker. Figure 5.4 below represents the schematic presentation of the most and least initiation move's function.

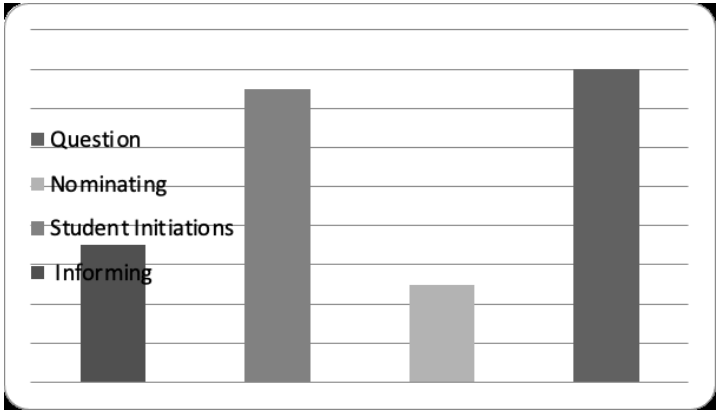


Figure 5.4. *Presentation of the most and least initiation move's function.*

How to run Chi-square in SPSS?
Click on Analyze → Descriptive Statistics → Crosstabs. Drag and drop (at least) one variable into the Row(s) box, and (at least) one into the Column(s) box. Click on Statistics, and select Chi-square. Press Continue, and then OK to do the chi square test.

5.17. FACTOR ANALYSIS

Factor analysis is a commonly used multivariate statistical technique in the field of language assessment. There are two main types of factor analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). In EFA, there are no expected numbers of factors for the data under investigation. Instead, researchers explore and find a model that optimally fits the data. CFA, on the other hand, attempts to test the significance of a hypothesized factor model by examining whether the sample data confirm the proposed model. In contrast to EFA, CFA requires the researcher to have an *a priori* theoretical model that shows the relationship between items/questions and factors and the correlation of factors (Thompson, 2004).

With CFA, the researcher must specify both the number of factors that exist for a set of variables and which factor each variable will load on before results can be computed. Thus, the statistical technique does not assign variables to factors. Instead, the researcher makes this assignment based on the theory being tested before any results can be obtained. Moreover, a variable is assigned to only a single factor (construct), and cross-loadings (loading on more than a single factor) are not assigned. CFA is applied to test the extent to which a researcher's a priori, theoretical pattern of factor loadings on pre-specified constructs (variables loading on specific constructs) represents the actual data. Thus, instead of allowing the statistical method to determine the number of factors and loadings as in EFA, CFA statistics tell us how well our theoretical specification of the factors matches reality (the actual data). In a sense, CFA is a tool that enables us to either confirm or reject our preconceived theory. CFA is often performed through *structural equation modeling (SEM).*

Ø **Points to Ponder:**

- *Factor loadings:* the correlation between the components and the original variables or items. Items with components loadings of >0.3–0.4 and with only one component may be retained (Kline 1998, Washburn et al., 2002). Items should 'load on' only one component to be included.
- *Eigenvalues* are calculated by squaring and adding the loadings on each factor. Each item has an eigenvalue of 1, hence the factor must have an eigenvalue of >1 if it is to be logically retaining.
- *Percentage variance:* the total variance within the correlation matrix that the factor accounts for. It is calculated by dividing the eigenvalue by the number of variables.

- *Cumulative percentage variance:* variance accounted for by all the factors. The larger this is, the more variance that is accounted for by the analysis.
- *Communality:* squaring and adding the loadings for each item or variable calculates this. It is an indicator of the proportion of variance for each item that each factor accounts for.
- Bartlett's test is useful whenever the assumption of equal variances across samples is made. Bartlett's test is sensitive to departures from *normality.*
- The Levene's test is an alternative to the Bartlett's test that is less sensitive to departures from normality.
- Kaiser-Meyer-Olkin (KMO) Test is a measure of how suited your data is for factor analysis.
- KMO returns values between 0 and 1. A rule of thumb for interpreting the statistic:
- KMO values between 0.8 and 1 indicate the sampling is adequate.
- KMO values less than 0.6 indicate the sampling is not adequate KMO Values close to zero means that there are large partial correlations compared to the sum of correlations.
- Eigenvalues represent the total amount of variance that can be explained by a given principal component. They can be positive or negative in theory, but in practice they explain variance which is always positive.
- If eigenvalues are greater than zero, then it's a good sign. Since variance cannot be negative, negative eigenvalues imply the model is ill-conditioned.
- Eigenvalues close to zero imply there is item multicollinearity, since all the variance can be taken up by the first component.
- Eigenvalues are also the sum of squared component loadings across all items for each component, which represent the amount of variance in each item that can be explained by the principal component.
- Eigenvectors represent a weight for each eigenvalue. The eigenvector times the square root of the eigenvalue gives the component loadings which can be interpreted as the correlation of each item with the principal component.

5.17.1. Reporting the Output of Confirmatory Factor Analysis (CFA)

Prior to running the factor analysis, the assumptions had to be checked. The first assumption was the inter-correlation among the variables. To know about inter-correlation among the variables, one needs to obtain a correlation matrix by running the correlation analysis. In the case of TLMP, the value of determinant is.001, which is larger than.00001. According to the results displayed in the correlation matrix, none of the items were excluded because there were significant correlation among all the items and there were no multicollinearity.

Another requirement is the factorability of the data. Thus, factor analysis was run with principal components chosen as the extraction technique. Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy help to determine the factorability of the data (Kaiser, cited in Pallant, 2005). Table 5.31 indicates the results of BTS and the KMO. The results enjoy the value of.63 and.000. Simply put, the first null hypothesis suggesting that transformative L2 materials preparation model will not show a good internal consistency was rejected. Table 5.31 indicates the results of BTS and the KMO measure of sample adequacy.

Table 5.31. BTS and KMO Measure of Sample Adequacy

Kaiser-Meyer-Olkin Measure of Sample Adequacy		**0.632**
Bartlett's test of sphericity	Approx. chi-square	0 673.67
	Df	231
	Sig.	0.000

Communality refers to the percent of variance in an observed variable that is account for the retained components (or factor). In other words, one can learn how much of the total variance is explained by the retained factors. A given variable will display a large communality if it loads heavily on at least one of the retained components. The minimum requirement for loading is a value of.30 and this can be observed in Table 5.32 where the results of communalities for the data are displayed. All the loading factors have values greater than.30.

Table 5.32. Communality for the TLMP Model

	Initial	**Extraction**
P1 motivation	1.000	0.598
P2 Four strands	1.000	0.691
P3 Comprehensible input	1.000	0.563
P4 Fluency	1.000	0.574
P5 Output	1.000	0.576
P6 Deliberate Learning	1.000	0.593
P7 Time on Task	1.000	0.581
P8 Depth of Processing	1.000	0.640
P9 Integrative Motivation	1.000	0.655
P10 Learning Style	1.000	0.432
P11 Frequency	1.000	0.513
P12 Strategies and Autonomy	1.000	0.625
P13 Spaced retrieval	1.000	0.823
P14 Language system	1.000	0.810
P15 Keep moving forward	1.000	0.527
P16 Teachability	1.000	0.773
P17 Learning burden	1.000	0.726
P18 Interference	1.000	0.652
P19 Ongoing needs	1.000	0.774
P20 Feedback	1.000	0.580
P21 Teacher role	1.000	0.571
P22 Student role	1.000	0.478
Extraction method: Principal component analysis.		

Table 5.32 shows communalities before and after extraction. As it can be seen, the initial communalities are all 1. This is due to the fact that the PCA works in the initial assumption that all variance is common. On the other hand, the communalities in the column label extraction reflect the common variance in the data structure. So, for example.598 in the first row of Table 5.32 indicates that 59.8% of the variance associated with the first principle is common, or shared, variance. In Table 5.32, all the extraction is relatively high. This indicates that the components account for a high degree of variance within the variables.

Table 5.33 demonstrates the total variance explained. This table presents information about initial eigenvalues, extraction, and rotation data. Eigenvalues is the sum of squared loading for a factor. It conceptually represents the amount of variance account for by a factor. The three columns under initial eigenvalues show the eigenvalue for all the variables before the extraction of the component. The total column shows the eigenvalue or the amount of the variance in the original variables account for each component. The percentage of variance column shows the percentage of the whole variance is accounted for each component. The cumulative percentage column adds up the percentages so that at each point one can easily decide what percentage of the variance is explained by the variables so far. For example, the cumulative percentage of the third component is the sum of the percentages of the first, second, and the third component. The results are presented in Table 5.33. In this table, only the first seven components recorded eigenvalues above 1 (4.05, 2.52, 1.62, 1.59, 1.39, 1.36, 1.18). These seven components explained a total of 62.52% of the variance. Table 5.33 indicates that the first factor account for 18.44%, factor 2 (11.49%), factor 3 (7.38%), factor 4 (7.25%), factor 5 (6.34%), factor 6 (6.22%), and factor 7 (5.40) in all 22 variables.

Table 5.33. Total Variance Explained for the TLMP Principles

Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**		
	Total	**Percentage of Variance**	**Cumulative (%)**	**Total**	**Percentage of Variance**	**Cumulative (%)**
1	4.057	18.442	18.442	4.057	18.442	18.442
2	2.527	11.489	29.930	2.527	11.489	29.930
3	1.624	7.384	37.314	1.624	7.384	37.314
4	1.594	7.247	44.561	1.594	7.247	44.561
5	1.396	6.347	50.907	1.396	6.347	50.907
6	1.369	6.223	57.130	1.369	6.223	57.130
7	1.187	5.396	62.526	1.187	5.396	62.526
8	0.971	4.415	66.941			
9	0.951	4.324	71.265			
10	0.843	3.834	75.099			

11	0.777	3.531	78.630			
12	0.679	3.085	81.715			
13	0.612	2.781	84.496			
14	0.553	2.515	87.011			
15	0.539	2.451	89.462			
16	0.486	2.210	91.671			
17	0.440	1.999	93.670			
18	0.385	1.750	95.421			
19	0.357	1.625	97.045			
20	0.286	1.298	98.343			
21	0.195	0.888	99.231			
22 0.169 0.769			100.000			
Extraction method: Principal component analysis.						

Often using the Kaiser criterion, one will find that too many components are extracted, so it is important to look at the Scree Plot provided by SPSS (Pallant, 2005). What you need to look for is a change (elbow) in the shape of the plot. Only component above this point are retained. The results are presented in Figure 5.5.

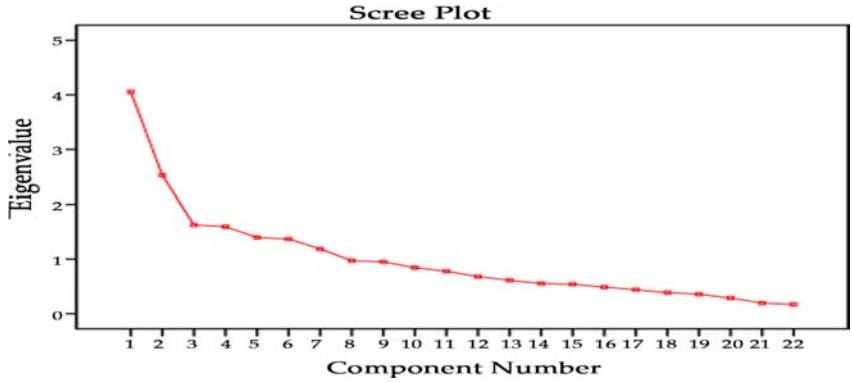


Figure 5.5. *Scree plots of the eigenvalues for a factor analysis on the TLMP principles.*

Since in the extraction procedure the eigenvalue was set at 1 and above, the extract components have eigenvalue greater than 1. Figure 5.5 indicates

only the first seven components qualify for this point of view. This means that the seven components explained 62.5% of the whole variance. Thus, it is possible to reduce the original 22 principles to seven and lose only 37.5% of the information. An inspection of the Scree Plot revealed a clear break after the third component. Using the Catell's (1966) Scree Plot, it was decided to retain three components for the further investigation. To aid the interpretation of these three components Varmix rotation was performed. The rotated solution presented in Table 5.34 reveals the presence of simple structure with three components showing a number of strong loading.

Table 5.34. Rotated Component Matrix[a] for the Components of the TLMP Model

Principles Component			
	1	**2**	**3**
P7 Time on Task	0.730	0.061	0.072
P4 Fluency	0.721	–0.093	–0.109
P8 Depth of Processing	0.706	0.060	–0.168
P3 Comp. input	0.663	0.051	–0.159
P6 Deliberate Learning	0.622	–0.007	–0.246
P10 Learning style	0.607	0.003	0.181
P9 Integrative motivation	0.603	0.094	–0.234
P5 Output	0.560	0.112	0.085
P11 Frequency	0.143	0.324	0.308
P13 Spaced retrieval	0.143	0.837	–0.102
P14 Language system	0.193	0.775	0.098
P12 Strategies and Autonomy	0.081	0.647	–0.184
P17 Learning burden	0.032	0.525	0.397
P18 Interference	–0.184	0.409	0.135
P21 Teacher role	–0.110	–0.153	0.314
P22 Student role	–0.165	–0.054	0.562
P1 motivation	0.528	–0.147	–0.003
P15 Keep moving forward	0.076	0.514	0.428
P20 Feedback	–0.270	–0.137	0.444
P16 Teachability	–0.011	0.433	0.145
P2 Four strands	0.329	0.223	–0.025
P19 Ongoing needs	–0.046	0.056	0.059

Extraction method: Principal component analysis.
Rotation method: Varimax with Kaiser normalization.

[a]Rotation converged in five iterations.

As in can be seen, component 1 encompasses principles 7, 4, 8, 3, 6, 10, 9, 5, 1, 2. The set of principles is labeled format and presentation. Component 2 encompasses principles 11, 13, 14, 12, 17, 18, 15, 16. This set of principles is labeled content and sequencing. Component 3 encompasses principles 21, 22, 20, 19. This set of principles is labeled Monitoring and assessment. Table 5.35 summarizes the components and the corresponding principles.

Table 5.35. Components and Their Corresponding Principles

No.	Component	Principle
1.	Format and presentation	7, 4, 8, 3, 6, 10, 9, 5, 1, 2
2.	Content and sequencing	11, 13, 14, 12, 17, 18, 15, 16
3.	Monitoring and assessment	21, 22, 20, 19

The three factor solution explained a total of 37.5% of the variances with component 1 contributing 17%, component 2, 11.75%, and component 3 contributing 8.5%. It should be noted that since items with loading factors below 0.3 were ignored, the number of items in the questionnaire was confirmed to 22 principles. Therefore, the final validated version of the TLMP model was used for the main study.

How to run Factor Analysis in SPSS?

First go to Analyze-Dimension Reduction-Factor. Move all the observed variables over the Variables: box to be analyzed. Under Extraction-Method, pick Principal components and make sure to analyze the Correlation matrix. We also request the unrotated factor solution and the Scree plot. Under Extract, choose fixed number of factors, and under Factor to extract enter 8. We also bumped up the Maximum Iterations of Convergence to 100.

5.18. STRUCTURAL EQUATION MODELING (SEM)

Structural equation modeling (SEM) is an advanced statistical technique to examine the relationships among groups of observed and latent variables by estimating covariances and means in experimental or non-experimental designs (Kline, 2015; Ockey and Choi, 2015). SEM, also called analysis

of covariance (ANCOVA) structures, covariance structure modeling, or covariance structure analysis, has been applied in a wide range of areas such as psychology (MacCallum and Austin, 2000), and management (Shah and Goldstein, 2006), marketing (e.g., Williams, Edwards, and Vandenberg, 2003). SEM analyzes both latent and observed variables as well as provides measurement error estimates. *Latent variables* are factors that cannot be directly observed but can be inferred from other variables that can be directly observed or measured. In SEM, latent variables can represent psychological and cognitive traits, such as intelligence, language ability, and happiness, to name a few. On the other hand, observed variables, also known as *manifest variables*, are those variables that can be directly observed or measured.

SEM consists of two parts: the 'measurement model' and the 'structural equation model.' The *measurement model* which specifies the rules governing how the latent variables are measured in terms of the observed variables and it describes the measurement properties of the observed variables. That is, measurement models are concerned with the *relations between observed and latent variables.* Such models specify hypotheses about the relations between a set of observed. Variables, such as ratings or questionnaire items, and the unobserved variables or constructs they were designed to measure. The *structural equation model* is a flexible, comprehensive model that specifies *the pattern of relationships* among independent and dependent variables, either observed or latent. It incorporates the strengths of multiple regression analysis, factor analysis, and multivariate ANOVA in a single model that can be evaluated statistically. Moreover, it permits *directional predictions* among a set of independent or a set of dependent variables, and it permits modeling of indirect effects. Of the two models, the structural model is of greater interest to the researcher, because it offers a direct test of the theory of interest. The measurement model is important as it provides a test for the reliability of the observed variables employed to measure the latent variables.

Ø **Points to Ponder:**

- SEM proposes a framework that comprises five steps:
  - Model specification among the variables, *the identification of the theoretical relationships.*
  - Model identification, *the process of evaluating whether the parameters in a specified model can be uniquely estimated*.
  - Data preparation, *sample size*, checking the *univariate* and *multivariate normality*, *and multicollinearity*.

- Parameter estimation, and
- Estimating fit and interpretation, *assess the accuracy of the model through checking the model fit indices.*

· Multivariate normality is evaluated using the normalized Mardia's (1970) coefficient. In normal distributions, *Mardia's coefficient* is < 3.

· a situation where IVs are highly correlated with each other (correlation > 0.90).

· Both GFI and AGFI values range from 0 to 1, indicating a good fit to the data when values are higher than.90

· The normed fit index (NFI), non-normed fit index (NNFI, or the Tucker-Lewis index or TLI), the comparative fit indices (CFI), and the relative fit index (RFI) are commonly used incremental or comparative fit indices. Traditionally, values greater than.90 or.95 are viewed as indicators of a good model-data fit.

· Two widely used residual-based fit indices are the standardized root mean square residual (SRMR; Bentler, 1995) and the root mean square error of approximation.

· For both SRMR and RMSEA, values less than 0.05 are desired for a well-fitting model, while values less than.08 still suggest a reasonable model fit.

Assumption:

· Assumption #1: Pearson correlation matrix should run to determine the relationship among the variables.

· Assumption #2: The confirmatory factor analysis (CFA) and Composite Reliability (CR) should be employed to indicate the possibility of conducting a conceptual model of research. Then, Goodness of Fit Indices of the research Variables should be employed at three corrective steps.

· Assumption #3: Direct maximum likelihood estimation (MLE) should be run and illustrate the finalized fitting model with respect to three fit indices, namely Adjusted goodness of fit test (AGFT), comparative fit index (CFI), and parsimonious fit index (PFI).

5.18.1. Reporting the Output of Structural Equation Modeling (SEM)

The research question aimed at probing if EB has a significant direct effect on students' LLSs. To answer the question, a path analysis was conducted. Accordingly, different model fit indices and their criteria were used to examine the goodness-of-fit of the model with the given dataset: goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), normed fit index (NFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). Table 5.36 indicates goodness-of-fit indices of the model fit before revision and after two stepwise corrections proposed by AMOS.

Table 5.36. Goodness-of-Fit Indices of the EBs, L2MSS, LLSs After Two Stepwise Corrections

Fit index	Description	Preference Value	Obtained Value Before Revision	Obtained Value After Revision
X^2/df	Cayenne relative	<3	3.142	2.741
X^2	Chi-square goodness of fit test	–	297.638	221.067
Df	Degree of freedom	–	89	87
RESMA	Root mean square error	<0.1	0.064	0.043
AGFI	Absolute goodness of fit	0. ≥.90	0.942	0.992
NFI	Normed fit index	0. ≥.90	0.894	0.986
CFI	Comparative fit index	0. ≥.90	0.901	0.974

Note: RMSEA: root mean square error of approximation; AGFI: Adjusted goodness-of-fit index; NFI: Normed fit index; CFI: Comparative fit index.

Table 5.37 indicated that *RMSEA* (0.064) falls within the acceptable fit threshold ($p < 0.01$). Likewise, all the fit indices, *AGFI* (0.942), *NFI* (0.894), *CFI* (0.901), and the chi-square/df ratio (2.74) were within the guideline level proposed by Schreiber, Nora, Stage, Barlow, and King (2006). Hence, the proposed model illustrated an acceptable fit with the empirical data after two stepwise modifications proposed by AMOS. To determine the effects

of EB and L2MSS on LLSs, the maximum likelihood estimation (MLE) method was run. MLE is widely used in SEM. It is the value that is the most likely given the data from a sample and certain assumptions about the distribution of those values (Byrne, 2001). Table 5.37 shows the result of MLE for LLS.

Table 5.37. Direct Maximum Likelihood Estimation for LLSs

Variable	Unstandardized Coefficients	Standardized Coefficients	R^2	T	Sig.
	B	B			
EB	0.–482	–0.380	0.183	5.739	0.001
L2MSS	0.271	0.187	0.051	4.360	0.001

Table 5.37 indicated that all the dependent variables significantly were predicted by LLSs: Standardized coefficients for EB ($\beta = –0.380$, $p < 0.01$) and L2MSS ($\beta = 0.271$, $p < 0.01$). In addition, R^2 for the EB ($R^2 = 0.183$) and L2MSS ($R^2 = 0.051$). Notably, the finding revealed that EB reduced LLSs for 38% and L2MSS strengthened LLSs for 18% at $p < 0.01$. To provide a better representation of the interrelationship of the constructs Figure 5.6 represents the schematic illustration.

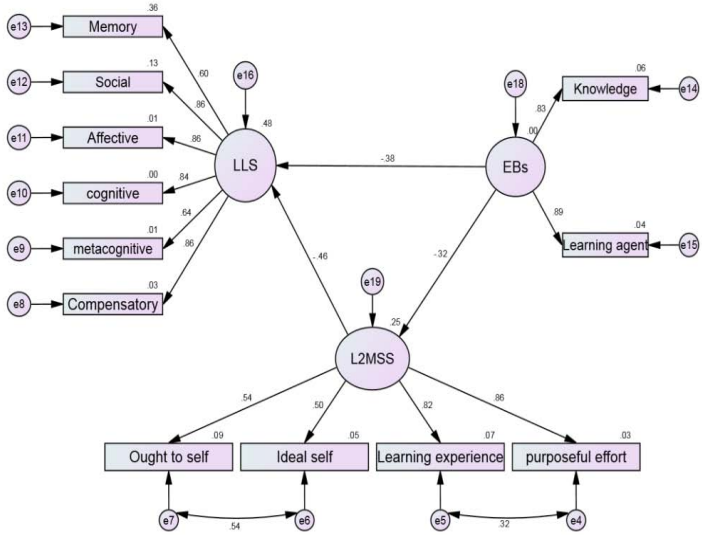


Figure 5.6. *Standardized tested model and interrelationships among EB, L2MSS, and LLS.*

Figure 5.6 indicated that EB and L2MSS were negatively and positively predicted by LLSs, respectively. This showed that when students EB increase their LLSs will decrease. In addition, when students' L2MSS increase their LLSs will increase accordingly. To investigated if EB with the mediating role of L2MSS has a significant indirect effect on students' LLSs. In so doing, *bootstrapping regression model* was run (Table 5.38).

Table 5.38. Bootstrap Estimate of Indirect Effect of EB on LLSs with Mediating L2MSS

Variable	**B**	**Lower Limit**	**Upper Limit**	**Sig.**
EB with mediating L2MSS on LLSs	0.487	0.271	0.592	0.001

Table 5.38 showed that the standardized Beta coefficients ($\beta = 0.487$, the Lower Limit= 0.271; Upper Limit= 0.592, $p < 0.05$). Regarding the bootstrap estimate of the indirect effect, the results indicated that the path coefficient for EB with the mediating role of L2MSS was significant on LLSs. In short, the path analysis can predict 48% of LLSs both directly and indirectly.

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CHAPTER 6

QUALITATIVE DATA ANALYSIS

At the end of this chapter, students will learn:

- The process of data analysis in a qualitative research;
- Common Qualitative Research Approaches;
- Ethnography;
- Phenomenology;
- Grounded Theory;
- Action Research (AR);
- Case Study;
- Qualitative Research Design;
- Explanatory Design;
- Exploratory Design;
- Triangulation Design;
- Embedded Design;
- Sampling Techniques in Qualitative Research;
- Snowball/chain sampling;
- Extreme/deviant case sampling;
- Homogeneous sampling;
- Maximum sampling;
- Convenience sampling;
- Homogeneous sampling;
- Maximum variation sampling;
- Extreme (deviant, or unique) case sampling;
- Qualitative Data Collection Methods;
- Observation;

- Interview;
- Focus Groups;
- Questionnaire;
- Qualitative Research Questions;
- Types of Qualitative Analysis;
- Content analysis;
- Interpretative phenomenological analysis (IPA);
- Descriptive phenomenological analysis;
- Narrative analysis;
- Syntagmatic Analysis;
- Paradigmatic Analysis;
- Intertextuality;
- Dialogical Theory;
- Discourse analysis;
- Framework analysis;
- Grounded theory;
- Coding Process;
- Thematic analysis;
- Verbal report (verbal protocol).

6.1. THE PROCESS OF DATA ANALYSIS IN QUALITATIVE RESEARCH

The process of data analysis in qualitative research, including exploring the data, developing themes from the data, coding data, and connecting themes. There are six steps involved in analyzing and interpreting qualitative data, they include:

- **Preparing and Organizing the Data:** You begin this process by organizing the data into folders, cards or computer files. This is followed by the transcription of the recordings (audio, video) or field notes into text data.
- **Exploring and Coding the Database:** You begin by exploring the data to gain a general sense. This is followed by the coding process which is a process of making sense of the data and collapsing information into general themes. This process goes over the data many time in order to collapse the information into manageable general themes.
- **Describing Findings and Forming Themes:** Here the aim is to answer the research question and form an understanding of the central ideas through description and the development of themes.
- **Representing and Reporting Findings:** This process consists of displaying findings in tables and figures and constructing a narrative to explain and summarize findings in response to the research questions.
- **Interpreting the Meaning of the Findings:** Here the researcher steps back to form larger meanings based on personal views and past studies.
- **Validating the Accuracy of the Findings:** Member checks or triangulation is used to determine the accuracy and credibility of the findings.

Bromley (1986) proposed the following steps in conducting a qualitative research:

- Clearly state the research issues or questions.
- Collect background information to help understand the relevant context and theories.
- Suggest several interpretations or answers to the research problems or questions based on this information.

- Continue looking for relevant evidence. Eliminate interpretations or answers that are contradicted, leaving, hopefully, one or more that are supported by the evidence.
- Cross examine the quality and sources of the evidence to ensure accuracy and consistency.
- Carefully check the logic and validity of the arguments leading to your conclusions.
- Select the strongest case in the event of more than one possible conclusion.
- If appropriate, suggest a plan of action in the light of this.
- Prepare your report as an account of your research.

Figure 6.1 presents different approaches, sampling, designs and method in qualitative research.

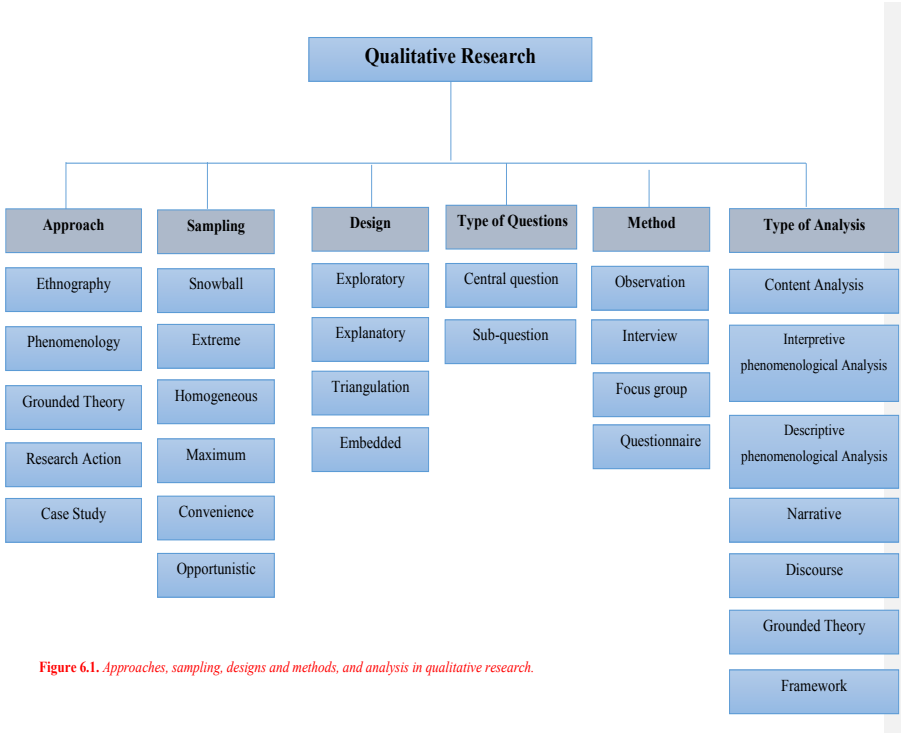

Figure 6.1. *Approaches, sampling, designs and methods, and analysis in qualitative research.*

Figure 6.1. Approaches, sampling, designs and methods, and analysis in qualitative research.

6.2. COMMON QUALITATIVE RESEARCH APPROACHES

6.2.1. Ethnography

Ethnography is an approach to qualitative research which comes largely from the field of anthropology. It is the study of theory and culture of a group of people usually to develop cultural awareness and sensitivity. Literally the word ethnography means the description (graphy) of cultures (ethno). Ethnography is the in-depth study of naturally occurring behavior within a culture or entire social group. It seeks to understand the relationship between culture and behavior, with culture referring to the shared beliefs, values, concepts, practices, and attitudes of a specific group of people. It examines what people do and interprets why they do it. Ethnographers typically describe, analyze, and interpret culture over time using observations and field work as the primary data collecting strategies. The final product is a cultural portrait that incorporates the views of participants (Emic perspective) as well as views of researcher (Etic perspective). Ethnographic studies consider where people are situated and how they go about daily activities as well as cultural beliefs. The main drawback of the approach is concerned is that the need for prolonged engagement with the participants in their natural setting requires an extensive time investment that few academic researchers can afford. A further limitation of ethnographic studies is how to strike a balance between the insider and outsider perspective.

Points to Ponder:

- Ethnographic research requires avoidance of theoretical preconceptions and hypothesis testing in favor of prolonged direct observation.
- Ethnography uses an eclectic range of data collection techniques, including *participant and nonparticipant observation, interviewing, and the ethnographer's own diary with FIELDNOTES and journal entries*.
- Ethnography is not defined by how data are collected, but rather by the lens through which the data are interpreted.
- There two main approaches to ethnography. Realist and critical ethnography.
- In realist ethnography, the researcher tries to provide an objective account of the situation, typically from a third person point of

view.

- In critical ethnography, the researcher takes an advocacy perspective and has a value-laden orientation.
- Ethnography has been utilized for the contextualized analysis of classroom discourse and school learning.
- Ethnographic research is sometimes used to refer to the observation and description of naturally occurring language (e.g., between mother and child or between teacher and students).
- Analysis and interpretation are inductive processes of methodically searching for patterns and meanings in the data.

6.2.2. Phenomenology

Phenomenology is the reflective study of pre-reflective or lived experience. Phenomenology may explore the unique meanings of any human experience or phenomenon. For example, it may study what it is like to have a conversation, how students experience difficulty in learning something. Literally, phenomenology is the study of "phenomena": appearances of things, or things as they appear in our experience, or the ways we experience things, thus the meanings things have in our experience. Phenomenological approaches are based in a paradigm of personal knowledge and subjectivity, and emphasize the importance of personal perspective and interpretation. Phenomenology is the reflective study of pre-reflective or lived experience. A main characteristic of the phenomenological tradition is that it is the study of the life world as we immediately experience it, pre-reflectively, rather than as we conceptualize, theorize, categorize, or reflect on it. Indeed, it is the study of lived or experiential meaning and attempts to describe and interpret these meanings in the ways that they emerge and are shaped by consciousness, language, our cognitive and non-cognitive sensibilities, and by our pre-understandings and presuppositions.

Points to Ponder:

- A phenomenologist use open-ended interviews as their primary data collection tool.
- The purpose of a phenomenological approach in research is to clarify and enlighten how people understand and comprehend certain phenomena.
- It is not interested in the explanation, but rather, it is concerned with the essential aspects of the lived experience.

- A variety of methods can be used in phenomenological-based research, including interviews, conversations, participant observation, action research (AR), focus meetings and analysis of personal texts.

6.2.2.1. Main Approaches to Phenomenology: Descriptive and Interpretive

It is considered that there are two main approaches to phenomenology: descriptive and interpretive. Descriptive phenomenology was developed by Edmund Husserl and interpretive by Martin Heidegger (Connelly 2010). The phenomenological analyzes will be explained in the analysis section.

6.2.3. Grounded Theory

Grounded theory is a general methodology of analysis in qualitative research which seeks to build systematic theoretical statements inductively from CODING and analyzing observational data, by developing and refining conceptual categories which are then tested and retested in further data collection. The theory is "grounded" in actual data, which means the analysis and development of theories happens after you have collected the data. It was introduced by Glaser and Strauss in 1967 to legitimize qualitative research. The emphasis in this methodology is on the generation of theory which is grounded in the data. Grounded theory, indeed, holds that concepts and hypotheses should not precede the gathering of information, in that theory is rooted in the reality observed and it is the researcher's task to discover it.

In *grounded theory-based analysis*, the researcher generally analyzes the data as follows: finding repeating themes by thoroughly reviewing the data; coding the emergent themes with keywords and phrases; grouping the codes into concepts hierarchically; and then categorizing the concepts through relationship. A typical grounded theory project might involve a study of the experience of the first few weeks at a new language school from the learners' point of view. Learners might be asked open ended questions about their views of language learning, the experience of arriving at a new institution and the approaches to language learning that they encountered; they might be asked to keep learner diaries; the researcher might observe lessons and interview teachers, collect a variety of documents (administrative and academic) and read accounts of other initial language learning experiences. What might emerge is a theory about the ways in which a dominant view of what language learning involves comes to be shared by the students.

Points to Ponder:

- The researcher does not begin with a particular theory in mind but adopts an inductive approach that allows theory to develop from the data.
- This approach yields theories that fit the data better and work better, in that the categories are discovered by examining the data themselves.
- Data collection in grounded theory is similar to that of ethnography.
- This research methodology uses inductive reasoning, in contrast to the hypothetico-deductive model of the scientific method.
- Grounded theory studies are generally focused on social processes or actions: they ask about what happens and how people interact.
- A study of 25 interviews may suffice for certain small projects but invites skepticism when the author's claims are about, say, human nature or contradict established research" (Charmaz, 2014, p. 214).

6.2.4. Action Research (AR)

The term action research (AR) was coined by the social psychologist Kurt Lewin in the United States in about 1944. AR is a form of self-reflective inquiry conducted by participants in a social situation, such as an educational context, with a view to changing and improving that situation. It can be used to investigate issues or dilemmas in your teaching situation in a systematic way. It involves a process of planning, acting, observing, and reflecting, as well as sharing the outcomes with others. It seeks transformative change through the simultaneous process of taking action and doing research, which are linked together by critical reflection. It is usually associated with identifying and exploring an issue, question, dilemma, gap, or puzzle in your own context of work. It is also research because it entails the processes of systematically collecting, documenting, and analyzing data and it is participatory and collaborative in that teachers work together to examine their own classrooms. There are two main types of AR, although variations and combinations of the two are possible: Practical AR and Participatory AR. Participatory AR, while sharing the focus on a specific local issue and on using the findings to implement action, differs in important ways from Practical AR. The first difference is that it has two additional purposes: to empower individuals and groups to improve their lives and to bring about

social change at some level—school, university, community, or society. Accordingly, it deliberately involves a sizable group of people representing diverse experiences and viewpoints, all of whom are focused on the same problem. The intent is to have intensive involvement of all these stakeholders, who function as equal partners. Practical AR addresses a specific problem within a classroom, school, university, or other community. Practical AR can be carried out in a variety of settings, such as educational, social service, or business locations. Its primary purpose is to improve practice in the short term as well as to inform larger issues (Figure 6.2).

The main strategies to analyze AR data:

- **Data Analysis Strategy 1:** Identifying themes and patterns.
- **Data Analysis Strategy 2:** Coding verbal data.
- **Data Analysis Strategy 3:** Narrating your observations.
- **Data Analysis Strategy 4:** Quantifying the data.

Points to Ponder:

- Data collection involves selecting from a range of observational (for example, classroom observation) and non-observational (interviews and journals) methods according to what you are trying to change.
- Various analytical techniques are used to analyze the data. These could include quantitative analysis using descriptive statistics, as well as qualitative approaches that identify key categories, themes, and concepts.
- Triangulating the sources of data helps to ensure greater trustworthiness and credibility. It is important for action researchers to draw conclusions from the data and not from their own personal assumptions or biases about their teaching contexts.
- Reporting AR essentially involves 'telling the story of the research' in the voices of the people who participated in it. Basic research or fundamental research contributes to the development of knowledge/theory. Applied research is socially useful-application of the knowledge generated to social concerns. AR is useful in solving an immediate, specific problem. AR is very useful in solving classroom problems.
- Journals, or diaries, are a common and popular learning activity in language classrooms, and they provide an ideal opportunity to serve also as a data-collection tool.

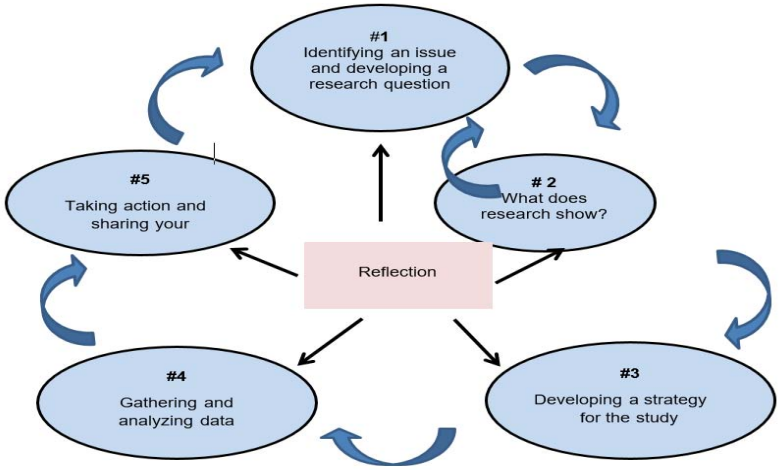

Figure 2. Steps in conducting an action research.

6.2.5. Case Study

A case study is a specific instance that is frequently designed to illustrate a more general principle (Nisbet and Watt, 1984), it is 'the study of an instance in action' (Adelman, Kemmis, and Jenkins 1980). The single instance is of a bounded system, for example a child, a clique, a class, a school, a community. There are several types of case study. Yin (1984) identifies three such types in terms of their outcomes: (a) exploratory (as a pilot to other studies or research questions); (b) descriptive (providing narrative accounts); (c) explanatory (testing theories). Yin's (1984) classification accords with Merriam (1988) who identifies three types: (a) descriptive (narrative accounts); (b) interpretative (developing conceptual categories inductively in order to examine initial assumptions); (c) evaluative (explaining and judging). case study researchers must strive for validity and reliability in their investigation. In terms of external validity, one of the major criticisms of case study research is that a single case provides very little evidence for generalizing. In regard to reliability, case study researchers, like all researchers, must make certain that if another researcher were to conduct a comparable case study, they would come to similar findings. In order to accomplish this, case study researchers must carefully document all the procedures they follow in as much detail as possible.

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Points to Ponder:

- Cases are primarily people, but researchers can also explore in depth a program, an institution, an organization, a school, a class, or a community. In fact, almost anything can serve as a case as long as it constitutes a single entity with clearly defined boundaries.
- Case study researchers usually combine a variety of data collection methods such as *interviews, observation, verbal protocols, narrative accounts, document archives, and audio or video recording*. Thus, the case study is not a specific technique but rather a method of collecting and organizing data so as to maximize understanding of the unitary character of the social being or object studied.
- A case study report often takes a narrative form and personal tone as the investigator attempts to tell the stories of the participants and portray them as real people.

6.3. QUALITATIVE RESEARCH DESIGN

6.3.1. Explanatory Design

The word explanatory in the design name suggests explanation: qualitative findings are used to help explain, refine, clarify, or extend quantitative results. It is a mixed method research design which is used extensively in applied linguistics research. Quantitative and qualitative data are collected and analyzed in sequence: first quantitative data is collected and analyzed, and then qualitative data. A typical example would include conducting follow-up qualitative interviews of representative or extreme cases to more deeply explore quantitative results. An example of this is the exploration of Japanese ESL students' perceptions of the classroom activities and classroom-related behaviors of their English teachers in the United States and in Japan.

6.3.2. Exploratory Design

The Exploratory Design is used when a researcher needs first to explore a topic using qualitative data before measuring or testing it quantitatively. This design is particularly appropriate when studying a topic which has been little explored, so there is little information about the relevant constructs (ways of

conceptualizing the topic) and how to measure important variables. In this design, the qualitative data is collected and analyzed first, followed by the collection and analysis of the quantitative data. As the name suggests, this design allows a researcher first to explore a topic by collecting qualitative data to help identify principal themes and possibly generate a theory. Then, the researcher collects quantitative data to examine the initial qualitative results, such as to test a theory or to develop a measurement instrument such as a questionnaire or survey (Morgan, 1998). The most popular approach for data analysis is to use the qualitative themes and categories to develop the quantitative measurement instrument (Creswell, 2008). In writing up the research, a researcher first reports the qualitative data collection and analysis and then explains the development of the instrument. Next, the quantitative data collection and analysis are discussed, and finally the overall results of the study are presented.

6.3.3. Triangulation Design

In the triangulation design and qualitative data are collected simultaneously. For instance, both a questionnaire and focus group interviews are conducted at the same time with the same participants, and then a researcher compares the quantitative and qualitative results. Often quantitative and qualitative data are collected using a questionnaire that contains closed-ended (quantitative) and open-ended (qualitative) response items. Triangulation design is best suited when a researcher wants to collect both types of data at the same time about a single phenomenon, in order to compare and contrast the different findings to produce well-validated conclusions (Creswell et al., 2003).

6.3.4. Embedded Design

The Embedded Design is used when a researcher needs to answer a secondary research question that requires the use of different types of data within a traditional quantitative or qualitative design. To accomplish this, one type of data collection and analysis is embedded or nested within the design associated with another type of data. For example, a researcher may need to embed qualitative data within a quantitative experimental design and will conduct qualitative interviews during the research study to understand the reasons for certain participants' behaviors.

6.4. SAMPLING TECHNIQUES IN QUALITATIVE RESEARCH

Sampling in qualitative research is mostly purposive-with specific criteria in mind! It seeks conceptual applicability rather than quantitative representativeness. It also seeks to capture the range of views/experiences, pursue saturation of data and draw theory from data. The sampling techniques include:

- Snowball/chain sampling;
- Extreme/deviant case sampling;
- Homogeneous sampling;
- Maximum sampling;
- Convenience sampling.

6.4.1. Snowball/Chain Sampling

Snowball sampling was developed by Coleman (1958–1959) and Goodman (1961) as a means for studying the structure of social networks. Snowball/ Chain Sampling is a type of non-probability sampling that researchers identify a small number of individuals who have the characteristics in which they are interested. These people are then used as informants to identify, or put the researchers in touch with, others who qualify for inclusion and these, in turn, identify yet others—hence the term snowball sampling. Snowball sampling is, in fact, a multistage technique. It begins with one or a few people or cases and spreads out on the basis of links to the initial case. This method is also useful for sampling a population where access is difficult, maybe because it is a sensitive topic or where communication networks are undeveloped.

6.4.2. Convenience Sampling

Convenience sampling—or as it is sometimes called, accidental or opportunity sampling—involves choosing the nearest individuals to serve as respondents and continuing that process until the required sample size has been obtained. Captive audiences such as students or student teachers often serve as respondents based on convenience sampling. The researcher simply chooses the sample from those to whom she has easy access. As it does not represent any group apart from itself, it does not seek to generalize about the wider population; for a convenience sample that is an irrelevance. The researcher, of course, must take pains to report this point— that the

parameters of generalizability in this type of sample are negligible. A convenience sample may be the sampling strategy selected for a case study or a series of case studies.

6.4.3. Purposive Sampling

In purposive sampling, researchers handpick the cases to be included in the sample on the basis of their judgment of their typicality. In this way, they build up a sample that is satisfactory to their specific needs. As its name suggests, the sample has been chosen for a specific purpose, for example: (a) a group of principals and senior managers of secondary schools is chosen as the research is studying the incidence of stress amongst senior managers; (b) a group of disaffected students has been chosen because they might indicate most distinctly the factors which contribute to students' disaffection; (c) one class of students has been selected to be tracked throughout a week in order to report on the curricular and pedagogic diet which is offered to them so that other teachers in the school might compare their own teaching to that reported. Whilst it may satisfy the researcher's needs to take this type of sample, it does not pretend to represent the wider population; it is deliberately and unashamedly selective and biased. There are a range of different approaches to purposive sampling, designed to yield different types of sample composition depending on the study's aims and coverage. These have been described as follows:

- Homogeneous sampling;
- Maximum variation sampling;
- Extreme (deviant, or unique) case sampling.

6.4.3.1. Homogeneous Sampling

Homogeneous sampling is a purposive sampling technique that aims to achieve a homogeneous sample; that is, a sample whose units (e.g., people, cases, etc.), share the same (or very similar) characteristics or traits (e.g., a group of people that are similar in terms of age, gender, background, occupation, etc.). This method of sampling is chosen to give a detailed picture of a particular phenomenon, for example, individuals who belong to the same subculture or have the same characteristics. This allows for detailed investigation of social processes in a specified context.

6.4.3.2. Maximum Variation Sampling

A maximum variation sample (sometimes called a maximum diversity sample or a maximum heterogeneity sample) is a special kind of purposive sample. Normally, a purposive sample is not representative, and does not claim to be. In maximum variation sampling there is a deliberate strategy to include phenomena which vary widely from each other; the researcher selects cases with markedly different forms of experience. For example, a study of U.S. high school students might include students from schools that differ in location, student characteristics, parental involvement, and other factors. This process will allow the researchers to explore the variation within the respondents and it will also underscore any commonalities that they find; if a pattern holds across the sampled diversity, the researchers can assume that it is reasonably stable.

There are two main occasions for using maximum variation sampling:

- When the sample size is very small; and
- When no population information is available (and it is not difficult to find population members with the selected characteristics).

6.4.3.3. Extreme (Deviant, or Unique) Case Sampling

Extreme (deviant, or unique) case sampling. In extreme case sampling, units or cases are chosen because they are unusual or special and therefore potentially enlightening. The researcher selects the most extreme cases (e.g., the most motivated and demotivated learners). On the one hand, this allows the researchers to find the limits of the experience; on the other hand, if even such cases share common elements, they are likely to be real core components of the experience.

6.5. QUALITATIVE DATA COLLECTION METHODS

When collecting qualitative data, researchers are interested in how, i.e., specific details around the occurrence of an event, with a particular interest in the perspective of the subject of study. Some of the methods used in collecting qualitative data are illustrated in Figure 6.3.

Figure 3. Qualitative data collection methods.

6.5.1. Observation

This is a data collection method by which information on a phenomenon is gathered through observation. When collecting data using observational techniques, researchers aim to provide careful description of subjects' activities without unduly influencing the events in which the subjects are engaged. The distinctive feature of observation as a research process is that it offers an investigator the opportunity to gather live data from naturally occurring social situations. In applied linguistics, this can include a classroom or teachers' room, or any environment where language use is being studied, such as a bilingual family home or a work environment that is bilingual or has nonnative speakers. In this way, the researcher can look directly at what is taking place in situ rather than relying on second-hand accounts.

Observation can also involve the perception and recording of data via the use of scientific instruments. The best tools for Observation are:

- **Checklists:** State specific criteria, allow users to gather information and make judgments about what they should know in relation to the outcomes. They offer systematic ways of collecting data about specific behaviors, knowledge, and skills.
- **Direct Observation**: This is an observational study method of collecting evaluative information. The evaluator watches the subject in his or her usual environment without altering that environment.

There are numerous ways in which observations can be classified. One kind of observation available to the researcher lies on a continuum from unstructured (informal or casual) to structured (formal or systematic). A highly structured observation will know in advance what it is looking for

(i.e., pre-ordinate observation) and will have its observation categories worked out in advance. A semi-structured observation will have an agenda of issues but will gather data to illuminate these issues in a far less predetermined or systematic manner. An unstructured observation will be far less clear on what it is looking for and will therefore have to go into a situation and observe what is taking place before deciding on its significance for the research. A semi-structured and, more particularly, an unstructured observation, will be hypothesis-generating rather than hypothesis-testing The semi-structured and unstructured observations will review observational data before suggesting an explanation for the phenomena being observed. The structured observation, takes much time to prepare but the data analysis is fairly rapid, the categories having already been established, whilst the less structured approach, is quicker to prepare but the data take much longer to analyze. A structured observation is very systematic and enables the researcher to generate numerical data from the observations.

Points to Ponder:

- Observations are beset by issues of validity and reliability, In this respect it has been suggested that additional methods of gathering data might be employed, to provide corroboration and triangulation, in short, to ensure that reliable inferences are derived from reliable data.
- There are four principal ways of entering data onto a structured observation schedule: event sampling, instantaneous sampling, interval recording, and rating scales.

6.5.2. Interview

An interview is a face-to-face conversation between two individuals with the sole purpose of collecting relevant information to satisfy a research purpose. Interviews are used both in quantitative and qualitative research. Quantitative interviews typically involve the use of a structured survey instrument that asks all respondents the same questions in the same order and the responses are amenable to statistical analysis. Qualitative interviews are more flexible and open-ended. They are often used to develop ideas and research hypotheses rather than to gather facts and statistics. While the qualitative researcher may want to count or enumerate certain aspects of the data, there is less focus on quantification. Qualitative researchers are more concerned with trying to understand how ordinary people think and feel about the topics of concern to the research. Moreover, whereas

quantitative research methods gather a narrow amount of information from a large number of respondents, qualitative interviews gather broader, more in-depth information from fewer respondents. Interviews are of different types namely; Structured, Semi structured and unstructured with each having a slight variation from the other:

1. **Structured Interviews:** Simply put, it is a verbally administered questionnaire. In terms of depth, it is surface level and is usually completed within a short period. For speed and efficiency, it is highly recommendable, but it lacks depth.
2. **Semi-Structured Interviews:** In this method, there are several key questions which cover the scope of the areas to be explored. It allows a little more leeway for the researcher to explore the subject matter.
3. **Unstructured Interviews:** It is an in-depth interview that allows the researcher to collect a wide range of information with a purpose. An advantage of this method is the freedom it gives a researcher to combine structure with flexibility even though it is more time-consuming.

Points to Ponder:

- For collecting data through interviews, audio recorder, digital camera and camcorder are a few tools you can use to easily collect data.
- Use t *online interview consent form template* to allow the interviewee to give their consent before you use the interview data for research or report.
- Once data from the interview have been collected, the next stage involves analyzing them, often by some form of coding or scoring.
- There are six basic types of questions that can be asked of participants during the interview. The six types are background (or demographic) questions, knowledge questions, experience (or behavior) questions, opinion (or values) questions, feelings questions, and sensory questions.

6.5.3. Focus Group

A focus group is a data collection method that is tightly facilitated and structured around a set of questions. The purpose of the meeting is to extract from the participants' detailed responses to these questions. The focus group format is based on the collective experience of group brainstorming, that is, participants thinking together, and challenging each other, and reacting

to the emerging issues and points. Hence the participants interact with each other rather than with the interviewer, such that the views of the participants can emerge—the participants rather than the researcher's agenda can predominate. It is from the interaction of the group that the data emerge.

Points to Ponder:

- In focus group interviews the interviewer is usually referred to as the moderator, and this special name reflects the fact that the researchers role differs from that in one-to-one interviews.
- Focus groups typically consist of 6 to 12 people.
- Focus group discussions usually need to last at least 1 hour and possibly 2 hours. Groups should be homogeneous in terms of prestige and status to ensure comfort in expressing opinions.
- in order to obtain a wide range of information, the usual strategy is to have several groups which, as a whole, are different from each but each of which is made up of similar people; this is usually referred to as segmentation and it involves within-group homogeneity and intergroup heterogeneity in the sample.

The best tools for tackling Focus groups are:

- **Two-Way:** One group watches another group answer the questions posed by the moderator. After listening to what the other group has to offer, the group that listens are able to facilitate more discussion and could potentially draw different conclusions**.**
- **Dueling-Moderator:** There are two moderators who play the devil's advocate. The main positive of the dueling-moderator focus group is to facilitate new ideas by introducing new ways of thinking and varying viewpoints.

6.5.4. Questionnaire

This is the process of collecting data through an instrument consisting of a series of questions and prompts to receive a response from individuals it is administered to. Questionnaires are designed to collect data from a group. Questionnaires can yield three types of data about the respondent: factual, behavioral, and attitudinal. (1) Factual questions (also called classification questions or subject descriptors) are used to find out about who the respondents are. They typically cover demographic characteristics (e.g., age, gender, and race), residential location, and socioeconomic status, level of education, religion, occupation, as well as any other background

information that may be relevant to interpreting the findings of the survey. (2) Behavioral questions are used to find out what the respondents are doing or have done in the past. They typically ask about people's actions, life-styles, habits, and personal history. Perhaps the most well-known questions of this type in L2 studies are the items in language learning strategy inventories that ask about the frequency one has used a particular strategy in the past. (3) Attitudinal questions are used to find out what people think. This is a broad category that concerns attitudes, opinions, beliefs, interests, and values.

Points to Ponder:

- A questionnaire isn't a survey, rather it forms a part of it. A survey is a process of data gathering involving a variety of data collection methods, including a questionnaire.
- Questionnaire items do not have good or bad answers; they elicit information about the respondents in a non-evaluative manner, without gauging their performance against a set of criteria.
- With regard to the items (i.e., questions or statements) in a questionnaire, there are two broad types: Open-form items and closed-form items.

6.5.5. Qualitative Research Questions

Qualitative research questions are most effective for those looking to carry out one-to-one or focus group-style interviews to understand how your target demographic thinks and feels; and why they make certain choices. The key qualities of a good qualitative research question are:

- Being able to discover problems and opportunities from respondents;
- Open-ended in nature;
- Easy to understand and digest with no need for clarification.

Qualitative research questions assume two forms: (a) a central question; and (b) associated sub-questions. Ask one or two central research questions. The central question is a broad question that asks for an exploration of the central phenomenon or concept in a study. The inquirer poses this question, consistent with the emerging methodology of qualitative research, as a general issue so as to not limit the views of participants.

Points to Ponder:

- Ask no more than five to seven sub-questions in addition to your central questions.
- Relate the central question to the specific qualitative strategy of inquiry.
- Begin the research questions with the words what or how to convey an open and emerging design.
- Qualitative research questions often contain words like lived experience, personal experience, understanding, meaning, and stories.
- Focus on a single phenomenon or concept.
- Use open-ended questions without reference to the literature or theory unless otherwise indicated by a qualitative strategy of inquiry.

Specify the participants and the research site for the study if the information has not yet been given.

Some qualitative questions:

1. What are Iranian parents' attitudes, motivations, and home literacy practices towards bilingualism?

(i) What are Iranian parents' attitudes toward bilingualism in Persian and English in Iran?

What types of motivations do Iranian parents have toward bilingualism in an EFL context like Iran?

(ii) What kinds of home literacy practices do Iranian parents provide for their children's successful bilingualism?

(iii) Barjesteh, H., Vaseghi, R., & Azarfam, A. Y., (2016).

- What are the barriers of ICT integration among EFL teachers and what are their suggestions to remove the barriers?
- Dehqan, Barjesteh, & Faraji, (2017).
- What obstacles do Iranian EFL instructors encounter toward implementing the principles of CLP in Iran?
- Barjesteh, (2017).
- What are the prospective EFL teachers' attitudes toward the dynamicity of the TLMP model based on self-assessment and class-assessment in an L2 methodology course?
- Barjesteh, (2020).

6.6. TYPES OF QUALITATIVE ANALYSIS

- Content analysis;
- Interpretative phenomenological analysis (IPA);
- Descriptive phenomenological analysis;
- Narrative analysis;
- Discourse analysis;
- Framework analysis;
- Grounded theory.

6.6.1. Content Analysis

Content analysis is the procedure for the *categorization of verbal or behavioral data* for the purpose of classification and tabulation. Content analysis can be done on two levels: (a) Descriptive: What is the data?, (b) Interpretative: what was meant by the data? Content analysis is qualitative research techniques which is used to convert written or spoken information into data that can be analyzed and interpreted quantify aspects of written or spoken text or of some form of visual representation. It is used for analyzing and tabulating the *frequency of occurrence of themes, emotions topics, ideas,* and other aspects of the content of written and spoken communication. Materials analyzed can any types of documents such as textbooks, newspapers, television programs, etc.

There are several basic stages to this method:

- State the research problem, i.e., what is to be counted and why? This will relate to the subject of the study and the relevant contents of the documentary source.
- Employ sampling methods in order to produce representative findings. This will relate to the choice of publications or other media, the examples selected and the sections within the examples that are investigated.
- Devise the units of analysis. These are the aspects of the content that will be retrieved and recorded in the form of a coding schedule.
- Describe and number the codes that are a measure of the units of analysis in the form of a coding manual.

- Retrieve the coded fragments. This can be done manually, but computer based search systems are more commonly used when the text can be digitized.
- Do quality checks on interpretation. This covers issues of:
- The units of analysis (can the selected aspects or themes really be divided from the rest of the text?);
- Classification (are the units counted really all similar enough to be counted together?);
- Combination of data (how can the units counted be weighted by length/detail/authoritativeness and how is the totality of the elements to be calculated?).

Points to Ponder:

- Content analysis involves coding, categorizing (creating meaningful categories into which the units of analysis—words, phrases, sentences, etc.—can be placed), comparing (categories and making links between them), and concluding—drawing theoretical conclusions from the text.
- Content analysis is that it is extremely useful as a means of analyzing interview and observational data.
- It is done by counting the frequency of phenomena within a case in order to gage its importance in comparison with other cases.

6.6.2. Interpretative Phenomenological Analysis (IPA)

Interpretative phenomenological analysis (IPA) is an approach to psychological qualitative research with an idiographic focus, which means that it aims to offer insights into how a given person, in a given context, makes sense of a given phenomenon. Usually these phenomena relate to experiences of some personal significance, such as a major life event, or the development of an important relationship. IPA studies involve a close examination of the experiences and meaning-making activities of only one participant. Most frequently they draw on the accounts of a small number of people (6 has been suggested as a good number, although anywhere between 3 and 15 participants for a group study can be acceptable. In IPA, researchers gather qualitative data from research participants using techniques such as interview, diaries, or focus group.

Typically, these are approached from a position of flexible and open-ended inquiry, and the interviewer adopts a stance which is curious and

facilitative. Analysis in IPA is said to be 'bottom-up.' This means that the researcher generates codes *from* the data, rather than using a pre-existing theory to identify codes that might be applied *to* the data. IPA studies do not test theories, then, but they are often relevant to the development of existing theories. After transcribing the data, the researcher works closely and intensively with the text, annotating it closely ('coding') for insights into the participants' experience and perspective on their world. As the analysis develops, the researcher catalogs the emerging codes, and subsequently begins to look for patterns in the codes. These patterns are called 'themes.' Themes are recurring patterns of meaning (ideas, thoughts, feelings) throughout the text. Themes are likely to identify both something that *matters* to the participants. Some themes will eventually be grouped under much broader themes called 'superordinate themes.

6.6.3. Descriptive Phenomenological Analysis

Descriptive phenomenology is widely used in social science research as a method to explore and describe the lived experience of individuals. It is a philosophy and a scientific method and has undertaken many variations as it has moved from the original European movement to include the American movement. Interpretive phenomenology differs from the descriptive approach, in that an interpretive approach does not negate the use of a theoretical orientation or conceptual framework as a component of inquiry. In an interpretive study, theory is not used in a formal way, that is, to generate hypotheses to be tested. Evidence from the literature indicates that most studies following the 'descriptive approach' to research are used to illuminate poorly understood aspects of experiences. In contrast, the 'interpretive/hermeneutic approach' is used to examine contextual features of an experience in relation to other influences such as culture, gender, employment or wellbeing of people or groups experiencing the phenomenon.

6.6.4. Narrative Analysis

This form of analysis is aimed at extracting themes, structures, and performances from stories or accounts that people use to explain their past, their present situation or their interpretations of events. The data, which is primarily aural, is collected by semi- or unstructured interviews, participant observation or other undirected methods. The narrative is analyzed for different aspects, such as what is said rather than how, or conversely, the nature of the performance during the telling, and perhaps how the storyteller reacted with the listener(s). Alternatively, the structure of the story is

inspected. All this is done in order to reveal the undercurrents that may lie under the simple narrative of the story.

Points to Ponder:

- The researcher has to sort out and reflects up on them, enhance them and present them in a revised shape to the reader.
- The core activity in narrative analysis is to reformulate stories presented by people in different contexts and based on their different experiences.

6.6.4.1. Semiotics

Semiotics, also called semiology, the study of signs and sign-using behavior. It was defined by one of its founders, the Swiss linguist Ferdinand de Saussure, as the study of the life of signs within society. This is the term for the 'science of signs' which is used to examine visual and other media as well as written texts. Semiotics attempts to gain a deep understanding of meanings by the interpretation of single elements of text or visual units. Words are only meaningful in their relationship with other words, e.g., we only know the meaning of 'horse' if we can compare it with different animals with different features. Likewise, the meanings of objects are related to their context, e.g., the meanings of a red traffic light can be seen as embedded in the system of traffic laws, color psychology, codes of conduct and convention, etc., (which could explain why for a time in China a red traffic light meant 'go'). A strong distinction is therefore made between denotation (what we perceive) and connotation (what we read into) when analyzing a sign.

Points to Ponder:

- The researcher has to sort out and reflects up on them, enhance them and present them in a revised shape to the reader.
- Semiotics is concerned with how meaning is created and conveyed in texts and, in particular, in narratives (or stories).
- The focus of semiotics is the signs found in texts. Signs are understood to be combinations of signifier and signified.
- Texts can be viewed as being similar to speech and as implying grammars or languages that make the texts meaningful. Codes and conventions make the signs in a narrative understandable and also shape the actions.
- Semiotics is frequently seen as having important anthropological and sociological dimensions.

- Semiotics explores how words and other signs make meaning.
- In semiotics, a sign is anything that stands in for something other than itself. This lesson focuses primarily on linguistic signs.

Type of analysis:

- **Syntagmatic Analysis:** A syntagm is a chain, and in syntagmatic analysis, a text is examined as a sequence of events that forms some kind of narrative. In semiotics, syntagmatic analysis is analysis of syntax or surface structure (syntagmatic structure) as opposed to paradigms (paradigmatic analysis). This is often achieved using commutation tests. "Syntagmatic" means that one element selects the other element either to precede it or to follow it. For example, the definitive article "the" selects a noun and not a verb.
- **Paradigmatic Analysis:** The paradigmatic analysis of a text involves a search for a hidden pattern of oppositions that are buried in it and that generate meaning. Paradigmatic analysis is the analysis of paradigms embedded in the text rather than of the surface structure (syntax) of the text which is termed syntagmatic analysis. Paradigmatic analysis often uses commutation tests, i.e., analysis by substituting words of the same type or class to calibrate shifts in connotation.
- **Intertextuality:** It is a term about which there is a good deal of controversy. For purposes of this discussion, it will refer to the use in texts (consciously or unconsciously) of material from other, previously created texts. Parody, or the humorous imitation of a text, is a good example of the conscious reuse of material from a text. In order for parody to be effective, audience members must be familiar with the original text, so that they can appreciate the ways in which it is being ridiculed. There are also parodies of style (e.g., contests are held in which entrants compete to produce the most ridiculous imitation of Hemingway's writing style) and parodies of genre, which play upon the basic plot structures of formulaic kinds of texts, such as soap operas and westerns. Intertextual figures include: *allusion, quotation, calque, plagiarism, translation,* and *parody*.
- **Dialogical Theory:** The Russian semiotician Mikhail Bakhtin has suggested that language is "dialogic," by which he means that when we speak, what we say is tied both to things that have

been said before and to utterances that we expect to be made in the future. Bakhtin discusses the relationships that exist among texts, including what he calls the matter of "quotation" (which we now call intertextuality).

6.6.5. Discourse Analysis

Discourse analysis studies the way that people communicate with each other through language within a social setting. Language is not a neutral medium for transmitting information; it is bedded in our social situation and helps to create and recreate it. A piece of discourse is an instance of spoken or written language that has describable internal relationships of form and meaning (for example, words, structures, and cohesion—the ways in which pronouns and conjunctions connect parts of text) that relate coherently to an external communicative function or purpose and a given audience/interlocutor. There are many approaches to studying authentic language use which complement discourse analysis-*conversation analysis, speech act analysis, cohesion analysis, contextual analysis, interaction analysis, and critical discourse analysis.* Discourse analysis can answer a myriad of interesting questions such as the following:

- How do my ESL/EFL students perform telephone openings and closings? How do they write e-mail openings and closings?
- What types of cohesive markers (e.g., finally) do EFL students use so that their papers read coherently?
- How is meaning negotiated in peer writing feedback sessions in my advanced composition class?
- What do my students know about compliments or complaints in English? If I ask them to role play a situation that requires one of these speech acts, will they perform in the same way that native speakers of English do?
- How do my ESL/EFL students display their gendered, racial, and cultural identities through their talk?
- Each of these questions really can be answered using discourse analysis, which is often used in *case study, ethnography,* and *AR*.

6.6.5.1. Principles of Discourse Analysis

- A researcher analyzes the discourse of naturally occurring events, not language that is produced solely for the sake of research.

- Discourse analysts focus on interaction between and among speakers rather than on monologic talk.
- For discourse analysis of speech, data must be collected for analysis and a conventionalized system employed for representing the data visually.
- Discourse data are presented in papers or reports in the form of data fragments or examples taken from spoken or written text. Although some researchers code, quantify, and count certain discourse features (for example, the number of turns or average pause length), most discourse analysts rely on relevant examples from the actual language data to shed light on the ways that communication is structured in certain settings or with certain speakers.

Some frameworks for critical discourse analysis:

- Fairclough;
- Van Dijk;
- Wodak.

Fairclough's (1989, 1995) model for CDA consists three inter-related processes of analysis tied to three inter-related dimensions of discourse. These three dimensions are: 1) the *object of analysis* (including verbal, visual or verbal and visual texts). 2) The processes by means of which the object is produced and received (writing/ speaking/designing and reading/listening/ viewing) by human subjects, 3) the socio-historical conditions which govern these processes. According to Fairclough each of these dimensions requires a different kind of analysis 1) *text analysis (description), 2) processing analysis (interpretation), 3) social analysis (explanation)*. Fairclough combines micro, and macro-level interpretation. At the micro-level, the analyst considers various aspects of textual/linguistic analysis, for example syntactic analysis, use of metaphor and rhetorical devices. The meso-level or "level of discursive practice" involves studying issues of production and consumption, for instance, which institution produced a text, who is the target audience, etc. At the macro-level, the analyst is concerned with intertextual and interdiscursive elements and tries to take into account the broad, societal currents that are affecting the text being studied.

Van Dijk's approach to Critical Discourse Analysis combines cognitive theories with linguistic and social theories. Van Dijk uses cognition as the middle layer of a three-layer approach consisting of discourse, and society. By integrating a cognitive approach, researchers are better able to understand

how larger social phenomenon are reinforced through popular, everyday discourse. Critics of this practice point out that his approach focuses on the reproduction of ideologies rather than the transformation.

Wodak's has developed a framework based on the systemic collection of sample texts on a topic to better understand the interrelationship of discourses that exist within the field. This framework allows for the discussion and analysis of ideologies involved in a set of discourses. The macro level of analysis is helpful in understanding how macro-structures of inequality persist through discursive processes across multiple sites and texts.

6.6.5.2. Classroom Discourse and Initiation-Response-Feedback (IRF) Patterns

Nunan and Carter (2001) simply define classroom discourse as a special type of discourse that happens in classrooms. To them, classroom discourse is often different in form and function from the language used in other situations due to particular social roles which learners and teachers have in classrooms and the type of activities they employ there. Likewise, and Kasper as cited in Kharaghani (2013, p. 859) characterized classroom interaction as institutional talks that is locally classified into conversational exchange system collectively. A number of authors proposed different approaches to classroom interactions. The framework for the classroom interaction includes Jarvis and Robinson's (1997) verbal interaction, Ellis (1994) EFL classroom discourse, Van Lier's (1998) L2 classroom interaction, Kumaravadivelu (2006) framework of critical classroom discourse analysis (CCDA), and Walsh (2011) L2 classroom context using conversation analysis, to name but a few. The approaches proposed by the authors included patterns of interaction, elicitation techniques, feedback strategies which indicate how classroom discourse might facilitate learning and communicative interaction. The classroom interaction patterns have empirically theorized three-part exchange structure, namely Teacher's Initiation, Student's Response, and Teacher's Feedback/ Evaluation as a conventional pattern of all classroom interactions and educational levels.

Reviewing L2 professional literature (Alexander, 2008; Cullen, 2002; Nystrand, 1997; Scott et al., 2006) on classroom discourse illustrates triadic dialog sequence as initiation-response-evaluation (IRE). Others (Sinclair, 1975; Waring, 2009) refer to it as initiation-response-feedback (IRF). Cazden (2001) illuminates IRF as I stands for an initiating move, usually a question puts forward by a teacher; R represents the response, usually, a

short response from a student(s) and F stands for feedback, follow up, on the teacher's side. Cullen (2002) and Nassaji and Wells (2000) identified the difference between IRE and IRF as two common classroom interactions. They are similar in that the teacher initiates the exchange usually by raising a question in the first turn, and then the student responds to the question in the second turn. The main difference between the patterns lies in the last turn. In IRE pattern, the teacher evaluates students responses in the third turn. However, in IRF, the teacher provides feedback in a non-evaluative form by asking students to justify or illuminate their responses (Thoms, 2012). Nassaji and Wells (2000) conclude that evaluation in the traditional IRE sequence bounds students ability to respond to their teacher in a meaningful way during the discussion. According to Thoms (2012), both IRF and IRE were acknowledged for the classroom interactions since they depend on a number of factors in the classroom such as the nature of the activity, the participants involved in the discussion, and the purpose of the lesson.

6.6.6. Grounded Theory

6.6.6.1. Coding Process

Coding is a process of disassembling and reassembling the data in grounded theory. Data are disassembled when they are broken apart into lines, paragraphs, or sections. These fragments are then rearranged, through coding, to produce a new understanding that explores similarities, differences, across a number of different cases. Coding means to label or give names to passages within the text which express a particular idea or refer to an event. Coding breaks the data up into manageable pieces and gives these pieces names, or tags, which enables the researcher to manipulate them; for example, to group them together, regroup them, and classify them. The early part of coding should be confusing, with a mass of apparently unrelated material. However, as coding progresses and themes emerge, the analysis becomes more organized and structured.

In grounded theory there are three types of coding: *open*, *and selective coding,* the intention of which is to deconstruct the data into manageable chunks in order to facilitate an understanding of the phenomenon in question. Open coding involves exploring the data and identifying units of analysis to code for meanings, feelings, actions, and so on. The researcher codes up the data, creating new codes and categories and subcategories where necessary, and integrating codes where relevant until the coding

is complete. Axial coding seeks to make links between categories and codes, to integrate codes around the axes of central categories; the essence of axial coding is the interconnectedness of categories. Hence codes are explored, their interrelationships are examined, and codes and categories are compared to existing theory. Think of a wheel with a center and spokes extending. The spokes are all related to the central category. A visual model is developed, called an axial coding paradigm. Selective coding is used to develop propositions or hypotheses based on the model, showing how the categories are related. The resulting theory can take the form of a narrative statement, a picture, or a series of hypotheses. That is, the researcher identifies a story line and writes a story that integrates the categories in the axial coding model. As coding proceeds the researcher develops concepts and makes connections between them.

6.6.6.2. Types of Coding

There are two essentially different types of coding, one that is used for *the retrieval of text sequences*, the other devised for *theory generation*. The former refers to the process of cutting out and pasting sections of text from transcripts or notes under various headings. The latter is a more open coding system used as an index for interpretive ideas-reflective notes or memos, rather than merely bits of text.

Pattern coding is a method of pulling together the coded information into more compact and meaningful groupings. It reduces the data into smaller analytical units such as themes, causes/explanations, relationships among people and emerging concepts. This allows you to develop a more integrated understanding of the situation and to test your initial answers to the research questions. This helps to provide a focus for later fieldwork and lay the foundations for cross-case analysis in multi-case studies by identifying common themes and processes.

Points to Ponder:

- Categorical content analysis (Lieblich et al., 1998) and the constant comparative method (Glaser and Strauss, 1967):
- **Step 1:** Code the interview transcripts.
- **Step 2:** Look for connections between codes and start to group codes into categories.
- **Step 3:** Configure the participant's story from the interview data.
- **Step 4:** Note themes as they emerge.

- Narrative inquiry involves eliciting and documenting stories of individuals' life experiences.
- These stories are then interpreted in terms of the literature of a field-a process which yields implications for practice, future research, or theory building.
- Narrative inquiry is based on the premise that we understand or make ● sense of our lives through narrative.
- Narrative inquiry is a generative term which encompasses a number of ● genres including case studies, diary studies, life histories, autobiographies, memoirs, and so on.
- Narrative inquiry has been used in the field of language education to investigate motivation, identity, multilingualism, learning strategies, language loss, learner autonomy, and a variety of other topics.
- Interviews are the principal method of data collection; however, participants can write their own stories. Sometimes researchers analyze previously published autobiographies, memoirs, and other genres.
- The stories are often analyzed using thematic analysis procedures such as categorical content analysis, common in qualitative research.

6.6.7. Thematic Analysis

Thematic analysis (TA) is one of the most common forms of analysis within qualitative research. It emphasizes identifying, and interpreting patterns of meaning (or "themes") within qualitative data. Thematic analysis (TA) is often understood as a method or technique in contrast to most other qualitative analytic approaches-such as grounded theory, discourse analysis, narrative analysis and IPA-which can be described as methodologies or theoretically informed frameworks for research (they specify guiding theory, appropriate research questions and methods of data collection, as well as procedures for conducting analysis). TA can be used to analyze most types of qualitative data including qualitative data collected from interviews, focus groups, surveys, solicited diaries, visual methods, and field research, AR, memory work, vignettes, story completion and secondary sources. Data-sets can range from short, perfunctory response to an open-ended survey question to hundreds of pages of interview transcripts. Thematic analysis can be used to analyze both small and large data-sets. TA is often used in mixed-method

designs-the theoretical flexibility of TA makes it a more straightforward choice than approaches with specific embedded theoretical assumptions.

TA is sometimes claimed to be compatible with phenomenology in that it can focus on participants' subjective experiences and sense-making; there is a long tradition of using TA in phenomenological research. A phenomenological approach emphasizes the participants' perceptions, and experiences as the paramount object of study. Rooted in humanistic psychology, phenomenology notes giving voice to the "other" as a key component in qualitative research in general. This approach allows the respondents to discuss the topic in their own words, free of constraints from fixed-response questions found in quantitative studies.

TA is sometimes erroneously assumed to be only compatible with phenomenology or experiential approaches to qualitative research. Braun and Clarke argue that their reflexive approach is equally compatible with social constructionist, and critical approaches to qualitative research. They emphasize the theoretical flexibility of thematic analysis and its use within realist, critical realist and relativist ontologies and positivist, and constructionist epistemologies. Like most research methods, the process of data analysis can occur in two primary ways—inductively or deductively. In an inductive approach, the themes identified are strongly linked to the data. This means that the process of coding occurs without trying to fit the data into a pre-existing theory or framework. It is important to note however that induction in thematic analysis is not 'pure' induction; it is not possible for the researchers to free themselves from ontological, and paradigmatic assumptions-coding will always reflect the researcher's philosophical standpoint and research values. Deductive approaches, on the other hand, are theory-driven. This form of analysis tends to be more interpretative because analysis is shaped and informed by pre-existing theory and concepts. Deductive approaches can involve seeking to identify themes identified in other research in the data-set or using existing theory as a lens through which to organize, and interpret the data. Sometimes deductive approaches are misunderstood as coding driven by a research question or the data collection questions. A thematic analysis can also combine inductive and deductive approaches.

6.6.7.1. Steps in a Thematic Analysis

- Familiarize yourself with your data;
- Assign preliminary codes to your data in order to describe the content;

- Search for patterns or themes in your codes across the different interviews;
- Review themes;
- Define and name themes;
- Produce your report.

Content analysis uses a descriptive approach in both coding of the data and its interpretation of quantitative counts of the codes. Conversely, TA provides a purely qualitative, detailed, and nuanced account of data.

6.6.8. Verbal Report (Verbal Protocol)

Verbal reporting an introspective qualitative data collection method which consists of oral records of an individual's thought processes, provided by the individual when thinking aloud either during or immediately after completing a task. These tasks are usually relatively specific and bounded, e.g., reading a short text. The verbalized thoughts of the participants are usually free-form, since participants are not provided with preformatted choices of answers. It is important to understand that verbal reports do not mirror the thought processes. Verbal reports are not immediate revelations of thought processes. They represent (a subset of) the information currently available in short-term memory rather than the processes producing the information. Cognitive processes are not directly manifest in protocols but have to be inferred, just as in the case of other types of data. Typically when researchers talk about verbal reporting they usually imply two specific techniques: think-aloud protocol and retrospective protocol (sometimes called stimulated recall), differentiated by when the data is collected. In a think-aloud protocol, the participants are given a task to perform and during the performance of that task they are asked to verbalize (i.e., to articulate) what their thought processes are. The researcher's role is merely to encourage that verbalization through prompting the participants with utterances such as 'please keep telling me what you are thinking'; 'please keep thinking aloud if you can.' Think-aloud implies no direct inspection of the mental state, but merely reportage. It involves the concurrent vocalization of one's inner speech without offering any analysis or explanation. Thus, respondents are asked to verbalize only the thoughts that enter their attention while still in the respondents' short-term memory. In this way, the procedure does not alter the sequence of thoughts mediating the completion of a task and can therefore be accepted as valid data on thinking. The resulting verbal protocol is recorded and then analyzed. It is clear that providing think-aloud

commentary is not a natural process and therefore participants need precise instructions and some training before they can be expected to produce useful data. They need to be told to focus on their task performance rather than on the think-aloud and they usually need to be reminded to keep on talking while carrying out an activity (e.g., 'What made you do that?,' or 'What are you thinking about now?').

The second type is a retrospective protocol or a stimulated recall in which learners verbalize their thought processes immediately after they have performed a task or mental operation. In such cases, the relevant information needs to be retrieved from long-term memory and thus the validity of retrospective protocols depends on the time interval between the occurrence of a thought and its verbal report. For tasks with relatively short response latencies (less than 5–10 seconds), subjects are able to produce accurate recollections, but for cognitive processes of longer duration, the difficulty of accurate recall of prior thoughts increases. In order to help the respondents retrieve their relevant thoughts, some sort of stimulus is used as a support for the recall (hence the term stimulated recall), such as watching the respondent's own task performance on video, listening to a recording of what the person has said, or showing the person a written work that s/he has produced. Thus, the underlying idea is that some tangible (visual or aural) reminder of an event will stimulate recall to an extent that the respondents can retrieve and then verbalize what was going on in their minds during the event.

6.6.8.1. How to Interpret Verbal Report Data?

- First, transcribe your data.
- Then, review existing studies on language learning that make use of verbal protocols in data collection. One of the main reasons for undertaking this review is to determine whether or not there is an existing category or coding system (see below) that could be used when you analyze your data.
- Next, divide your data of what respondents said into thought units, that is, segments of the transcribed text that reflect a particular thought or idea. These units are not necessarily the same as a sentence or clause.
- Fourth, sort each thought unit into one of the categories you have decided to use based either on an existing coding system or one you have devised. A coding system provides a list of categories

into which the researcher places each thought unit. The coding system itself should be so clear and unambiguous that two researchers would come up with similar results in coding the data. The advantage of using an existing coding system is that you can compare your findings with other studies; the disadvantage is that an existing coding system may not fit your data.

- Have a second reader also code the data so that you can determine whether or not you have been objective in categorizing the data.
- Look for patterns in your categorization. For example, you may find that students who are generally strong readers or listeners in your class use particular strategies, while those who are typically less proficient use others.

6.6.8.2. A Sample of a Qualitative Report: Analysis

Analysis followed Miles, Huberman, and Saldana's (2014) stages for generating meaning from qualitative data, entailing counting frequencies of occurrences, noting patterns and themes, using informed intuition to examine plausibility, and clustering data into categories, types, and classifications. Iterative analysis and reanalysis led to identification of codes and categories. In line with Saldana's (2013) approach, analytic reflection on the codes and categories in the context of the existing literature enabled thematization, reflecting previous literature, but also allowed for emergence of new themes. Exploring patterns and individualities allowed commonalities to be identified, while also giving space for the emergence of contextual and personal differences. The data excerpts included in this article were selected for their representative capacity to more fully illustrated themes that emerged through the data.

PART II:
RESEARCH METHODOLOGY QUESTIONS IN APPLIED LINGUISTICS

CHAPTER 7

RESEARCH METHODOLOGY QUESTION

At the end of this chapter, students will learn:

- Different research methodology questions posed by visit ResearchGate members.

1. WHAT ARE THE CHARACTERISTICS OF A GOOD RESEARCH?

Research is systematic, logical, reductive, and generated. Research is systematic in that it should employ a structured procedure; i.e., every step in research from the beginning to the end should follow certain pre-established rules and regulations. Systematicity in research is one of the principles of scientific method. Contrary to earlier beliefs that the world is not controllable and it exists beyond the capacity of human mind, some scientists believe in an objective reality. They also believe in the uniformity in nature whereby many natural events happen quite systematically in the universe.

Research is logical sense in formulating a question, in choosing a systematic way, in interpreting the results, and in making conclusions and generalizations, logic plays an important role. Without manipulating ideas logically, the scientific researcher cannot make much progress in any given investigation. That is why logic is accepted as a generally necessary, useful, and valid device in research. However, great care should be exercised on the nature of logical reasoning. This means that accuracy and validity of the premises and also the use of language must be carefully examined and controlled so as not to lead to false conclusions.

Research is reductive in two ways: conceptual and practical. As a conceptual phenomenon, it refers to observing, classifying, and thus reducing many individual instances into a general statement, which would encompass most of the observed cases. Of course, there might exist exceptional cases that are not in perfect harmony with the generalization. However, generalization helps researchers to avoid complications, which might originate from too many individual cases. As a practical phenomenon, reductivity refers to reducing researcher's responsibility, since the findings of one researcher is transferred to other researchers to prevent them from repeating the same research. In order words, research is, in most cases, additive, i.e., findings are it accumulated, sometimes from one generation to another, in order for scientists to use them in their endeavor to uncover the mysteries of nature.

Research is replicable in that some researchers may want to find answers to the same or similar questions upon which some findings are reported in different places in the world. They may want to confirm the findings of the previous research in a new environment, with a new group of subjects, or at a different point in time. Of course, they may come up with different outcomes despite the same procedure and follow-ups. The different possibilities in replication include (a) finding a fairly strong concordance

between the findings of the old and the new research, (b) finding partial agreement between the results of the two research project and justifying the difference due to variation in the situation, time, subjects, and other factors, and (c) findings different or even contradictory results a case which calls for more replications. Research is generative; that is, throughout the process, researchers face many unexpected situations in which different factors interact and create new situation leading to new questions. This is one of the most valuable characteristics of research, since answering one question leads to generating many other question. That is how science develops. The generate nature of research implies that there is no end to research, nor is there an end to human activities to finding new factors and relations among facts, as research always generates new areas for further research.

2. HOW CAN A STUDY BE REPLICATED WITHOUT BEING DUPLICATED?

Replication involves the re-conduction of a previous study with similar methodology in order to confirm the results or modify the conclusions if necessary. Unlike replication, duplication does not seek the confirmation of the previous findings. It refers to an illegal copying of a previous study without mentioning the original researcher who undertook the job. The act is referred to as "plagiarism" in the review of literature. Students and searchers are strongly warned against plagiarism. Of course, there is nothing wrong with referring to or even using the findings of other researchers. In fact, such a procedure would enrich the report, and would help researchers to justify their positions. However, for any element or idea used from previous research, either directly or indirectly, proper reference and acknowledgment should be provided.

3. WHY IS REPLICATION CONSIDERED AS A VALIDATION TECHNIQUE IN RESEARCH?

In replication, the new research is carried out with regard to the previous study on the same topic. Therefore, while the later serves as the basis for the former, the validity of the previous findings will also be verified in the process of the new study. It should be mentioned that to validate previous studies, researchers should have access to detailed, precise, concise, and reliable pieces of information from previous projects. Therefore, it is of

utmost importance for all researchers to report on their projects with great care. Otherwise, the differences in the findings of similar research projects conducted at different places or times will not be justifiable. This may not be due to the procedures followed in the new research, but may be due to the incomplete, inappropriate, or incomprehensive reports upon which replications have been made.

4. WHAT ARE THE OBJECTIVES OF RESEARCH?

The objectives of research include description, prediction, improvement, and explanation. One of the major objectives of research is to describe natural and man-made phenomena: how they are formed, what their structures are, how they function, how they develop or change over time, how they relate to other phenomena, and so on. Description is often based on the information obtained from some sort of instrumentation such as observation (direct or indirect), questionnaire, or paper and pencil tests. The statistics about the percentage of students passing or failing different courses is an example of description. But description, however valuable, is not sufficient to satisfy the researcher's curiosity.

The second objective of research is to go beyond description and to try to predict the future course of events with a certain degree of confidence. Accumulating knowledge through description will enable the researcher to predict a phenomenon that may occur under similar conditions at a particular time in future. For example, if researchers have information on the relationship between academic achievement and intelligence, they can predict the student's degree of achievement by utilizing the information obtained from testing students' intelligence. Sometimes it is even possible to predict the future success of learners in acquiring a particular language by describing the relationship between their present performance and their success in the future.

Another objective of research is to help scholars answer questions in order to solve some problems in human life and improve the present state of affairs in an area of inquiry. For instance, the findings of research in education should help educators improve the quality of education. Research on determining the needs of students in learning English as a foreign language is another example. On the basis of these needs, certain new materials should be developed or existing materials should be modified and used in English classes. Again to see whether the materials can help teachers and students to achieve their goals, research should be carried out.

By finding out the effectiveness of the materials, educators can add some more materials, modify others, or even eliminate some in order to improve the quality of materials.

The ultimate objective of research is to explain phenomena. If searchers can explain a phenomenon, it means that they can describe, predict, and control the improvement of that phenomenon with a certain degree of certainly and accuracy. For instance, just defining the ways in which children acquire language or teachers succeed or fail in classroom, or students learn or do not learn certain grammatical structures is not sufficient for researchers. Rather, the researchers are interested in understanding the reasons for such phenomena, and this is why they want to explain the events, which is possible through explaining the process of language teaching and learning.

5. WHICH PROCEDURE IS MORE COMMON AT THE INITIAL STAGES OF A RESEARCH PROJECT, HEURISTIC OR DEDUCTED?

The type of question asked in the research will determine what the objective or purpose of the research will be. Consider this research question: why are some second language (L2) learners more successful than others? In heuristic, data driven, or hypothesis-generating research, the investigator observes and records some aspects or contexts of L2 learning. There may be no complete theories or models to guide the researcher or to stimulate specific research questions at this point. Data are collected in an attempt to include as much of the contextual information as possible. These data may then be categorized or analyzed or written up descriptively. Often the results of such research, which are valuable by themselves, may lead to the formulation of new hypotheses for further investigation.

In deductive, hypothesis-driven, or hypothesis-testing research, on the other hand, the investigator may begin with hypotheses, which are based on observations suggested by heuristic research, hypotheses found in L2 acquisition theory or in other areas, which appear to have relevance to L2 learning process. The deductive approach, as distinct from the heuristic approach, begins with a preconceived notion or expectation about the L2 learning to phenomena to be investigated. For example, researchers may take the principles from a particular language related field such as psychology and investigate whether variables such as field dependence and independence would have any relationship with L2 acquisition process. Deductive research in L2 learning might also be driven by theories or questions developed in

other fields. Thus, both methods would be useful depending on the context of research.

6. HOW DOES THE SIZE OF SUBJECT POPULATION CHANGE THROUGH AN ANALYTIC-DEDUCTIVE OR IN SYNTHETIC-HEURISTIC STUDY?

In synthetic-heuristic study, the data are collected in an attempt to include as much of the contextual information as possible to generate a hypothesis, and thus, there is need for reasonable instances of the phenomenon in the data. The instances can be obtained from a limited number of subjects or contexts. In analytic-detective studies, however, researchers concentrate on the research question and hypothesis they have already proposed. This is an approach that will identify and investigate a single factor or a cluster of factors. Therefore, the study is usually narrowed down in scope on a large group through random sampling. The reason for large sample in deductive approach is that the researcher wants to have a sample which is a reasonable representative of the population to which the findings would be generalized.

7. WHY IS IT NECESSARY TO HAVE A HYPOTHESIS IN RESEARCH?

In deductive research, when the researchers start with a research question, the formulation of a hypothesis is necessary. The purpose of research is to answer a question. Since most of the questions in language related fields cannot be answered definitely, the researchers form hypotheses. The reason is that hypotheses can be tested, but questions cannot. This is why a hypothesis is a necessary part of the research.

8. WHAT ARE THE MAIN CHARACTERISTICS OF A GOOD HYPOTHESIS?

A hypothesis expresses (sometimes informally) an intuition about some phenomenon. In its initial state, a hypothesis, will sometimes be, as vitally has mentioned, a simple statement. After all, it is an intuition that is first expressed in a hypothesis. After writing down the intuition, then it is necessary to become to be more formal. At that point, it helps to use mathematics to rewrite the initial hypothesis. It is definitely the case that a well-formulated hypothesis at the intuitive level leads to refinement and the

search for a good way to express a hypothesis mathematically. That search can lead to new ideas:

- Simplicity;
- Clarity;
- Testability;
- Relevant to problem;
- Specific;
- Relevant to available techniques;
- Fruitful for new discoveries;
- Consistency and harmony reference.

9. IS IT CORRECT TO USE MAY WHEN WRITING A HYPOTHESIS?

Example: There may be significant differences in students' scores in writing…

Generally speaking, a hypothesis is a tentative statement addressing a theoretical, hypothetical explanation of a given observation or measurement. In other words, it tends to provide a prediction about a specific outcome or a suggested explanation about a targeted research topic. As such, researchers' failure in producing interesting and testable predictions may result in the reformulation of the hypothesis or reconsideration of the defined subject. Practically, hypotheses are answers to research questions which are formulated as yes/no or wh-questions. Therefore, the use of MAY or WILL would not be appropriate because the questions are in the form of does, do, is, are, etc., or in the form of how does, what is, and so on. The modals such as MAY and WILL are hedging signals that alleviate the force of the prediction posed by the hypothesis.

10. IN WHAT WAYS DIRECT, AND NULL HYPOTHESES ARE DIFFERENT?

Non-directional hypothesis is an alternative hypothesis that does not indicate the direction of the possible differences from the value specified by the null hypothesis. In other words, a non-directional hypothesis, unlike a directional hypothesis**,** is chosen when if there is no reason to hypothesize that an existing relationship will be in one direction or the other, positive or

negative. A *non-directional hypothesis* is tested with a *two-tailed test* and is stated in words that *'A differs from B.'* In Fact, the researcher may take the more conservative path of formulating a non-directional hypothesis which leaves open the possibility of the relationship being in either direction. The Null Hypothesis: It is impossible to test research hypotheses directly. You must first state a null hypothesis (symbolized H0) and assess the probability that this null hypothesis is true. The null hypothesis is a statistical hypothesis. It is called the null hypothesis because it states that there is no relationship between the variables in the population. A null hypothesis states a negation (not the reverse) of what the experimenter expects or predicts. A researcher may hope to show that after an experimental treatment, two populations will have different means, but the null hypothesis would state that after the treatment the populations' means will not be different.

11. WHAT ARE THE CHARACTERISTICS OF A GOOD RESEARCH TOPIC?

Finding a good research topic is probably one of the most important phases in planning and conducting the research. Student researchers often think the topic they are interested in is too trivial to be worth working out, or too broad to be manageable. As a general guideline, a research topic should be (a) interesting to the researcher, (b) answerable when it leads to research questions, (c) addressing and important issue in the field, (d) practical, and (e) neither too specific nor too general.

12. WHAT ARE THE CHARACTERISTICS OF DESCRIPTIVE RESEARCH QUESTIONS?

Descriptive questions are posed to find out the frequency, duration, and intensity of an event, or the frequency, duration, intensity, and range of a behavior performed by a subject. Like a newspaper reporter, researchers interested in descriptive questions ask about who, what, when, and where of an event or a behavior. These questions sometimes address the sequence of events. In second or foreign language field, researchers can formulate questions about the order of acquisition, the frequency of the frequency of the occurrence of grammatical elements, the frequency of the errors made by first and L2 learners, and the sequence of the elements learned in a particular community.

13. WHAT IS A CORRELATIONAL QUESTION?

Correlation questions ask about the degree of relationship between two or more variables. These questions are usually asked in the form of "what is the relationship between X and Y"? Correlational questions are very common in the field of applied linguistics. Examples include the relationship between language abilities and some other cognitive factors such as intelligence, and aptitude, or the relationship between students' abilities in different language components and language skills (e.g., the relationship between the knowledge of vocabulary and grammar and the ability in speaking and writing).

14. WHAT ARE CAUSE-EFFECT TYPE QUESTIONS?

Cause-effect questions seek casual relationships between the variables of interest. This type of question requires experimentation and is usually in the form of "what is the effect of X on Y?" Examples include the effect of listening comprehension practice on language proficiency, or the effect of audio-visual aids in classroom on the pronunciation accuracy of the learners.

15. DEFINE RESEARCH AS A SCIENTIFIC METHOD AND EXPLAIN HOW IT DEVELOPED?

Regarding the common definition of research as a systematic way of answering questions, early man used to obtain information through certain sources such as logic, expert opinion, and sensory experience. However, with the developments in scientific fields, the tradition techniques were not satisfactory. Therefore, more systematic and principled ways were needed. The movements that helped shaping the principles of scientific method are as follows: The first developments came from philosophers of science who argued that a scientific field would progress cumulatively within an agreed upon framework. Sometimes, a particular framework cannot account for certain existing or emerging issues. Therefore, modifications to the framework become necessary. This process helps the development of a framework to continue. The second development was the increasing interest of educators, especially in human sciences, in the rigorous methods utilized in disciplines such as physical sciences. This movement was first enhanced by psychology. Then educators tried to improve their methods by utilizing rigorous principles. Scholars working in sociology, economics, history, and I applied linguistics attempted to act as objectively as possible

similar to the scholars in physical sciences. The third movement was the interest developed in studying unobservable phenomena. Certain cognitive, affective, and mental processes such as the nature of achievement, the acquisition of language, affection, etc., demanded more objective techniques to be investigated.

All these movements led to shift from traditional method of inquiry to a rigorous and data based approach, which is referred to as scientific method.

16. WHAT ARE THE STEPS IN CONDUCTING RESEARCH?

The steps that are generally followed in carrying out a piece of research include formulating a research question, selecting an appropriate research method, testing the research hypothesis, and preparing the research report. Each step will be separately discussed later. However, an overview of the whole procedure is presented below:

1. **Formulating a Research Question and Hypothesis:** As the starting point for a study, the researcher attends to a problem, observes some relevant events, and poses a question. When the research question is formulated, the researcher has certain expectations about the outcomes. His expectations may originate from his own knowledge or form the review of the previous research. Therefore, he changes the question into a hypothesis, which is defined as a tentative statement about the outcome of research.
2. **Selecting an Appropriate Research Method:** There are several methods available to the researchers. In order to select the most suitable method, the researcher should consider constructing a research design, which is the schematic representation of the factors involved in research, and would be helpful to determine the nature, kind, number, and characteristics of the factors being investigated. That is, the research design would provide both the researcher and the readers with a comprehensive picture of the factors involved in research.
3. **Testing the Research Hypotheses:** To test the hypotheses, the researcher should collect information on the variables involved in the research. This process is called data collection. Again, the kind of data to be collected depends on the nature of the research.

These data, then, should be analyzed and interpreted. Data analysis is a process that needs statistical techniques and is often carried out with computer assistance. Interpretation of the results is a delicate part of the hypothesis testing process. Although there are some statistical criteria to interpret the results, some logical considerations are also available to the researcher to supplement statistical criteria.

4. **Preparing the Research Report:** The purpose of preparing a research report is to share the findings with other researchers. The research report should be organized and written on the basis of an internationally accepted style.

17. WHAT IS THE DIFFERENCE BETWEEN HYPOTHESIS AND THEORY?

A hypothesis is either a suggested explanation for an observable phenomenon, or a reasoned prediction, i.e., a tentative proposition-of a possible causal correlation among multiple phenomena. A hypothesis is only a suggested possible outcome, and is testable and falsifiable. It is a testable idea. Scientists do not set out to "prove" hypotheses, but to test them. Often multiple hypotheses are posed to explain phenomena and the goal of research is to eliminate the incorrect ones. In science, a theory is a tested, well-substantiated, unifying explanation for a set of verified, proven factors. A theory is always backed by evidence. Theories may be supported, rejected, or modified, based on new evidence. Ary et al. (2014, p. 14) state that in science, a theory is defined as a set of interrelated constructs and propositions that presents an explanation of phenomena and makes predictions about relationships among variables relevant to the phenomena. To compare, a hypothesis is a proposed explanation for a phenomenon. For a hypothesis to be a scientific hypothesis, it needs to tested using scientific method(s). Scientists generally base scientific hypotheses on previous observations that cannot be explained otherwise. A scientific hypothesis is a proposed explanation of a phenomenon, until it is rigorously tested. In contrast, a scientific theory has undergone extensive testing an accepted to be the accurate explanation behind an observation.

19. WHAT ARE DIFFERENT ORIENTATIONS TO TESOL RESEARCH?

Research orientations are mainly classified into three categories:

1. **Descriptive Orientations:** These are which aim to establish scientific knowledge about systems of human behavior. They describe, for example, linguistic systems acquired by learners of a new language, the formal conventions through which language can be structured as texts, common patterns of strategic behavior in language learning or communication, or systems of discourse interaction typical of language classrooms. *Analysis of learner language, verbal reports on learning strategies, and text analysis are instances of this category.*
2. **Interpretive Orientations:** These are that aim to produce local knowledge relevant to understanding and improving particular language programs, policies, or education circumstances. Research in this area may focus on whether distinct patterns of classroom interaction yield learning results appropriate to a certain curriculum, consider how the cultural life of a school interacts with its local social circumstances, or assess how language policies are being implemented in specific educational jurisdictions. Examples of this category include *classroom interaction analysis and ethnography.* Furthermore, interpretive research is concerned with describing how students and teachers behave in particular language programs or classrooms for the purpose of evaluating the effectiveness of the instruction or curriculum they have experienced. It aims to identify and quantify normative patterns of behavior within specific curricula in order to find out how to improve local conditions for language teaching and learning, interpreting the effectiveness of these processes in reference to state or program policies or indicators of student's achievement.
3. **Ideological Orientations:** These are aim to transform the social relations of participants in language education, using the potential in research process to achieve political results (not just scholarly information or institutionally determined goals), such as change in individual and intergroup relations, people's critical awareness of their historical and social positions, and the redistribution of cultural power and privilege.

By the same token, the idiographic approach to research has an openly political agenda, viewing language education in relation to issues of social equity. This orientation aims at transforming the social conditions of minority or disadvantaged participants in language education, seeking to empower them through their participation in research rather than to establish systematic accounts of their behavior, improve the institutional status quo of language programs, or reach more refined interpretations of how they learn or are taught. Critical pedagogical approach and participatory action research (PAR) are examples of this category.

20. WHICH ORIENTATION DOES PARTICIPATORY ACTION RESEARCH (PAR) BELONG TO?

PAR is classified under ideological orientations. As discussed before, AR (action research) mainly benefits the teacher. Research originates in the classroom and loops directly back to classroom practice. PAR, however, is wider in scope in that the research originates within the communities of the learners and loops back to their communities; the emphasis is on concrete ways to use the research to promote action on the social context. The methods used in PAR are designed to empower the participants and bring about social change.

21. WHAT ARE THE DIFFERENCES BETWEEN SCIENTIFIC RESEARCH AND COMMON SENSE?

Research is not as simple and natural as the everyday activities in which people rely on their intuition and common sense. While common sense, intuition, and introspection about experience are useful, they are of limited value unless utilized appropriately. It has been cynically suggested that a guiding rule for common sense is that new ideas should look like the old ones. That is, new ideas should confirm what we already know or believe. Some feel that the purpose of science and scientific research is to confirm the beliefs of common sense. In other words, science has been involved in supporting superstition and prejudice as well as "good" common sense. The conclusion of common sense might become the starting point for scientific research but should not become the end point. The differences between knowledge arrived at through common sense and intuition on the one hand, and scientific research on the other hand, can be expressed by concepts such

as ‘organized,’ ‘structured,’ ‘methodical,’ ‘systematic,’ ‘testable,’ and, in short, ‘scientific.’

22. WHY IS RESEARCH CONSIDERED AS A NEVER-ENDING CYCLE?

This relates to a man’s intellectual capacity through which an endless number of questions can be set forth, and to the generative nature of research whereby new questions emerge in the process of answering a single question. Research is an ongoing activity, which is never totally completed because each piece of research raises additional questions for more research. That is, either the results do not lead the investigator to a satisfactory answer, or the original question or hypothesis with which the research began cannot be answered or confirmed. Therefore, the investigation must begin again but with a gain in knowledge and experience.

23. IN WHAT WAY PROCESS-ORIENTED AND PRODUCT-ORIENTED RESEARCH IS DIFFERENT?

Process-oriented research is mainly of qualitative type carried out over time with few subjects. Therefore, its findings are not generalizable. Product-or outcome-oriented research is chiefly of quantitative type, and takes place at only one point in time. The findings of this kind of research are generalizable because of the larger group of participants involved.

24. WHAT ARE THE DIFFERENCES BETWEEN RESEARCH METHOD AND RESEARCH APPROACH?

The terms are often used interchangeably-hence the conceptual confusion. A research approach is usually broader than a research method-if the terms are used correctly. A research approach may also be termed or related to research paradigm, methodology or framework. It is the overall theoretical/ philosophical underpinning of the study. Research method (design) is the ‘doing’ part of the research process. It includes setting and sampling, ethics, data collection and data analysis.

25. WHAT IS THE DIFFERENCE BETWEEN EMPIRICAL AND PRACTICAL RESEARCH?

The term "empirical" has its origin in Greek language and is conceptually used for activities encompassing endeavors which primarily focus on observation and experimentation for the gathering of data. By contrast, "practical" is an attributive concept referring to a given theory or approach which can be successfully applied to real life circumstances. Differently stated, the term practical denotes the working and application of a theoretical plan or idea in actual practice in order to find out to what extent it is capable of being actualized in real conditions.

26. WHAT IS THE DIFFERENCE BETWEEN INTERDISCIPLINARY AND MULTIDISCIPLINARY RESEARCH?

Interdisciplinary research refers to an approach to research in which the individual researcher or the team of collaborators from the same academic discipline in a given research situation integrate information, data, techniques, tools, and theories from several disciplines or fields of study in order to shed light on the targeted research question. By Contrast, a multidisciplinary mode of research almost invariably involves very complex situations in which a multidisciplinary team from several academic disciplines cooperate together in order to solve the problem based on the evidence obtained from multiple, external domains overshadowing it.

27. WHAT ARE DIFFERENT ASPECTS OF RESEARCH?

Research is a two-dimensional endeavor. One dimension is concerned with the pure (basic)/applied (practical) goals, and the other one deals with the confirmatory/exploratory nature:

Pure research is done to find out the relationship among different factors and is not much concerned with the applications or implications of the findings to real world. It is research for the sake of research. A pure researcher tries to uncover new relations, to add to human knowledge, and to formulate generalizations and establish laws. For example, L2 research that involves constructing theoretical models to explain L2 acquisition process is an instances of pure research. Applied research, on the other hand, attempts to utilize the findings of the pure research and apply them to the real world.

Applied researchers are responsible for the goods and evils of the results. For example, the discovery of nuclear power was the outcome of pure research, while its application, weather for destructive or humanitarian purposes, is the responsibility of applied researchers.

Regarding the other aspect, exploratory research is conducted to explore the mysteries of the universe. It is very difficult to carry out research of this kind, because there is no helpful guideline for the researcher to follow. In some instances, the researchers follow a trial and error procedure to find out something about an unknown phenomenon. Many discoveries and inventions have partially been the outcome of exploratory research. Confirmatory research, on the other hand, refers to exact or partial replication of previous research in order to consolidate the already discovered facts and relations among other facts. In the field of language education, most research projects are either partial or complete replication of the previous research because of the diversity of variables and factors involved in language and language-related areas. For instance, a particular research in a given context leading to certain results may lead to different findings in a different context due to the involvement of some other factors. Therefore, a piece of research can be pure confirmatory or applied confirmatory, as well as pure exploratory or applied exploratory. The two aspects are not mutually exclusive.

28. WHAT ARE THE MAIN INGREDIENTS AND SEQUENCE ACADEMIC RESEARCH PROPOSALS?

Academic research proposals are usually composed of the following elements:

- The title;
- Aims of the research;
- The background to the research-context and previous research;
- A definition of the research problem;
- Outline of methods of data collection and analysis;
- Possible outcomes;
- Timetable of the project and description of any resources required;
- List of references.

29. WHAT IS THE OBJECTIVE OF WRITING A RESEARCH PROBLEM?

The research problem provides the focus of the research project. It is the culmination of the background work and the initiator of the specific research tasks. It must be very clearly defined to explain the nature of the problem and why it is significant. The problem may be expressed in abstract terms initially, but through the statement of sub-problems, you should indicate how it can be investigated practically.

30. WHAT IS A PARADIGM?

There are three interconnected, generic activities that define a paradigm. They go by variety of labels, including theory, method, analysis, ontology, epistemology, and methodology. Behind these terms stands the autobiography of the researcher, who speaks from a particular class or gender, and racial, cultural, and ethnic community perspective. The gender-oriented, multiculturally situated researcher approaches the world with a set of ideas, a framework (theory, ontology) that specifies a set of questions (epistemology)that he or she then examines in specific ways (methodology, analysis). A paradigm deals with certain principles. These principles combine beliefs about ontology (What kind of being is the human being? what is the nature of reality?), epistemology (What is the relationship between the inquirer and the known?), and methodology (How do we know the world, or gain knowledge of it?).

31. IN WHAT WAYS RESEARCH PAPER AND REVIEW PAPER ARE DIFFERENT?

A research paper is based on original research. The kind of research may vary depending on your field or the topic (experiments, survey, interview, questionnaire, etc.), but authors need to collect and analyze raw data and conduct an original study. The research paper will be based on the analysis and interpretation of this data. A review article or *review paper* is based on other published articles. It does not report original research. Review articles generally summarize the existing literature on a topic in an attempt to explain the current state of understanding on the topic. Review articles can be of three kinds: A narrative review explains the existing knowledge on a topic based on all the published research available on the topic.

32. WHAT IS THE DIFFERENCE BETWEEN LIKERT AND SEMANTIC DIFFERENTIAL SCALE?

Likert scale Also known as the *summated ratings approach*, a Likert scale has several statements that address the concept under examination with an interval scale, prepared by the researcher. The numbers given by a respondent to each of the statements on the interval scale are added to obtain a composite score. Semantic differential scales also known as *the bipolar ratings system*, it is used to measure respondents' attitudes towards a given issue, on a *1–7* interval scale with several opinions set up at extreme ends (e.g., useful-useless). A composite score is calculated for each respondent for this scale.

33. WHAT IS THE DIFFERENCE BETWEEN INTERNAL AND EXTERNAL VALIDITY?

Internal validity is the extent to which extraneous variables affect the change in the dependent variable is the extent to which the internal validity is influenced. Unlike external validity, internal validity is concerned with the degree to which the results of the study are due to the independent variable(s) (IVs) under consideration that are measured, controlled, or manipulated and not due to anything else. Researchers favoring more qualitative approaches use the term credibility to mean the same thing as internal validity. there are a number of extraneous factors that can affect the results of a study that will lower the internal validity of a study: history, maturation, statistical regression, mortality, testing effect, instrumentation, differential selection, and selection-maturation interaction. External validity is the extent to which the research findings based on a sample of individuals or objects can be generalized to the same population that the sample is taken from or to other similar populations in terms of contexts, individuals, times, and settings. external validity is a very important concept in all types of research designs. in quantitative research, generalizability is often achieved by using a random sample of a representative group of the target population.

34. IN WHAT WAYS ALIGNMENT PLAYS A KEY ROLE IN ACADEMIC WRITING?

The concept of alignment, as you have rightly observed, plays a key role in developing all kinds of academic writing in general and in qualitative

research in particular. Notably, alignment refers to precise presentation of the parts comprising research in such a way that the facts describing each section should not only be articulated logically and consistently, but they should also be materialized as a unified whole. As such, alignment is one of the major issues that reviewers and referees emphasize and challenge in assessing and approving quantitative and qualitative research. One solution to successful alignment is to ensure that each part in qualitative research is logically aligned with the targeted research topic as well as other elements of the study. As an illustration, utilizing a qualitative methodology would not be appropriate to a research theme which has a quantitative nature. Similarly, it would not be logical to use a statistical technique like Chi-Square for testing parametric data. On the basis of the above, the research topic, the type of data, and the proposed statistical analysis should be in complete harmony; otherwise, the researcher would be faced with a serious alignment problem influencing the experimental validity and generalizability of the research results.

35. WHAT IS REPLICATION IN RESEARCH?

Replication studies infer the same method and methodology being adopted as close to the original as possible. The main reason for replication is to test if, over time, if the same study was conducted again (using as close to the original parameters as possible) would things have changed because changing social, economic, political conditions might impose a different outcome. They serve to 'bring the original study up-to-date.' However, some might replicate (using exactly the same methods) against a different culture, geographical location, etc., to see if this has an impact on outcome. If your variables are 'entirely different, it is unlikely to constitute replication.

36. WHAT ARE THE COMMON MISTAKES IN FORMULATING AND CLARIFYING RESEARCH TOPICS?

The following are the common mistakes in formulating and clarifying research topic:

1. Failure to know the background of the topic;
2. Failure to choose an interesting topic;
3. Failure to brainstorm the concept;

4. Failure to consider the scope to the topic;
5. Failure to develop research questions;
6. Failure to know the objectives of the topic;
7. Failure to know that research is a dynamic process.

37. HOW WOULD YOU ALIGN THE RESEARCH PROBLEM, AND QUESTIONS?

Align research refers to careful articulation of major proposal and dissertation elements in such a way that the proposal and dissertation narrative flows logically and consistently across different elements of the study. A research problem is a statement about an area of concern, a condition to be improved, a difficulty to be eliminated, or a troubling question that exists in scholarly literature, in theory, or in practice that points to the need for meaningful understanding and deliberate investigation. How to align research problem:

- Write out your vision;
- Write out your issue statement;
- Organize your method;
- Use your "Ws" (what, how, when, where, which).

Research objectives describe what we expect to achieve by a project. It may be linked with a hypothesis or used as a statement of purpose in a study that does not have a hypothesis. How to align research objectives:

- Define the focus of your study;
- Clear identify variables to be measured;
- Indicate the various steps to be involved;
- Establish the limits of the study;
- Avoid collection of any data that is not strictly necessary.

A research question is an answerable inquiry into a specific concern or issue. It is the initial step in a research project. The 'initial step' means after you have an idea of what you want to study, the research question is the first active step in the research project. How to align research questions?

- Specify your specific concern or issues;
- Decide what you want to know about the specific concern or issue;
- Turn what you want to know and specific concern into a question;

- Ensure that the question is answerable;
- Check to make sure the question is not too broad or too narrow.

38. HOW DO YOU ENSURE ETHICAL CONSIDERATIONS IN RESEARCH?

The issue of ethics is an important part of axiology, a Meta theory inspiring scientists' attention to the moral values underlying their works. Ethics in research addresses three different but complementary factors defining the course of action for all researchers:

1. A commitment to respect and value the trust that other researchers place in them.
2. A commitment to themselves. Any deviation from the norms and codes of conduct would befuddle the researcher's accountability questioning the credibility of the targeted claims.
3. A commitment to address the needs and general interests of the public.

Since the main objective of research is the sharing of knowledge, the concerned researchers should also do their best to avoid any misconduct violating the normative standards of research including the authenticity of data, the confidentiality of participants' biodata, avoidance of plagiarism, etc. Full compliance with the said ethical issues would certainly enhance the contributory role of research in enhancing the quality of the shared knowledge.

39. WHAT ARE THE ETHICAL CONSIDERATIONS IN RESEARCH?

Ethical considerations are moral and culture bound principles that the researcher must take into account. They are as follows:

1. Informed consent (request for participants' permission);
2. Protection of the participants against any physical and psychological harm;
3. Protection of the participants against defaming caused by the by the release and publication of the results;
4. Avoiding deception, i.e., informing the participants of possible harms (which are either not too serious or even negligible);

5. Observing the confidentiality of the findings;
6. Preserving the anonymity of the participants;
7. Respecting the participants' right of privacy.

Research in both physical and human sciences should seriously take the ethical points into account. There is no excuse for any study to disregard ethical issues, unless the research is vital to the welfare of the society or the world.

40. WHAT ARE THE QUALITIES OF A GOOD LITERATURE REVIEW?

A literature review is more than a summary of past research or an annotated bibliography. It is a work of synthesis which provides the context for your own investigations. The followings are the qualities of a good literature review, in your literature review, you should:

- Clarify your understanding of the field;
- Explain the rationale for your research;
- Place your research within a broader context;
- Evaluate the results of previous research;
- Define key concepts and ideas;
- Identify research in related areas that is generalize or transferable to your topic;
- Identify relevant methodological issues.

41. WHICH FACTORS IN PREVIOUS RESEARCH SHOULD BE THE FOCUS OF LITERATURE REVIEW?

Most researchers agree that the focus of literature review should be on the three areas of theory, method, and data analysis:

1. **Theory:** The foundation of research is a theory from which hypotheses are generated. So, the research, which is not based on a solid theory, may not lead to fruitful results. The theory might be either well established or quite intuitive. In either case, the theories upon which previous research projects have been carried out are of great value. An understanding of the theoretical principles of the phenomenon under investigation would help

researchers pose, refine, modify, or narrow down their questions.

2. **Method:** The method section often includes information about the participants, instruments, procedures, data collection, the kind, method, and the design as well as the statistical analyzes utilized in the research. Each and every piece of information in the method section such as the adequacy of the number of participants, the efficiency of the instruments in terms of their cost effectiveness, validity, reliability, availability, the procedures followed and the appropriateness of the method in the previous research, would provide researchers with useful guidelines in conducting the new projects. Information on the instrument used in previous research can lead the new researcher to make wise decisions on the instruments to be used in the upcoming study. Also, having information on the procedures, method, design, and statistical analyzes followed in previous research projects would help new researchers avoid the complications of the previous research and attempt to collect and analyze the data through the most efficient method, and statistical procedures.
3. **Statistical Analyzes:** This section deals with the presentation of the results and the interpretation of the findings in previous research. The information about these steps would help the new researcher employ the most appropriate statistical techniques, and interpret the results as accurately as possible.

42. WHAT IS A LITERATURE REVIEW?

Literature review is a review of pertinent literature to become aware of the state-of-the art (what is known) and the gaps (what is not known) concerning a specific topic. Differently stated, literature review is crucial for undertaking any research effort as it empowers us to have a detailed picture about what already exists in the inquiry field concerned and in what depths, with what assumptions, and so forth. It further benefits the reader to appreciate how best a researcher has been capable to intertwine his work within existing knowledge. Differently stated, Literature review is a review of pertinent literature to become aware of the state-of-the art (what is known) and the gaps (what is not known) concerning a specific topic. Differently stated, literature review is crucial for undertaking any research effort as it empowers us to have a detailed picture about what already exists in the inquiry field concerned and in what depths, with what assumptions,

and so forth. It further benefits the reader to appreciate how best a researcher has been capable to intertwine his work within existing knowledge.

43. TO WHAT EXTENT CAN THE LITERATURE REVIEW AFFECT THE RESEARCH QUESTION?

As far as it helps the researcher narrow down the topic and makes the question a workable one, its effect is justified. Further, literature review helps the researchers adjust their research question to the existing information. They should look for as much information as possible on the question they formulate through studying the previous research reports.

44. IS THERE A RESEARCH METHODOLOGY CALLED "LIBRARY RESEARCH"?

Generally speaking, the way you approach your research question will have a great bearing on your research outcomes. There are quite a wide range of research methodologies which you can choose from, and of course, one of them is what is called library research. In point of fact, there are times when a researcher decides to conduct a kind of research which is primarily grounded in theory. In other words, your research question is literature-based and involves only a methodology of theoretical analysis requiring selection and discussion of descriptive materials as well as a comparative investigation of the targeted theories defining the issue under scrutiny. Under such circumstances, the objective is not to discover something about a specific phenomenon; rather, the researcher aims at reaching a judgment about the merit of main theories defining the related concept in order to understand it as one of the realities of the world. Naturally, the right thing to do here is a library-based or theoretical study. On this basis, it is appropriate to regard "library research" as a research methodology proper.

45. WHAT IS THE DIFFERENCE BETWEEN THE REVIEW OF LITERATURE AND HISTORICAL RESEARCH?

Historical method of research is concerned with a systematic collection and an evaluation of the data related to past events. The main purpose here is to test hypotheses about causes, effects, or trends of the events in the past. The findings of historical research may help explain the present events and

predict the future phenomena. Review of literature, on the other hand, is simply reporting what others have said about a particular topic. While the purpose of historical research is to test a hypothesis, the review of literature is carried out mainly for the purpose of justifying or consolidating a position on an issue. Furthermore, literature review is a part of all research projects and is not exclusive to any particular method of research.

46. IS THE LITERATURE REVIEW A QUALITATIVE RESEARCH METHOD?

Actually, literature review is related to preparing conceptual foundation or theory building and becomes the basis of hypotheses formulation. Literature reviews is not a method, but a part of your dissertation or paper where, as other participants stated, you go through different papers and works about topic of your interest. Based on this review you build theoretical foundations for your hypothesis, research questions or interview questions and similar. Later in your discussion or conclusion parts you should also be able to refer to some points you wrote in your literature review. Reader of you literature review should be able to have an insight into what was written about the certain topic, what are the missing aspects and gaps in the literature and you should introduce your research with the aim to fulfill this gaps or to contribute to the overall knowledge on researched topic.

48. HOW CAN THE REVIEW OF LITERATURE BE USED IN THE HISTORICAL METHOD OF RESEARCH?

Review of literature provides information on the origin, developments, modifications, and factors contributing to the present state of a phenomenon. Therefore, through historical method of research, and other methods of research for that matter, the researcher employs all information provided by literature review in order to (1) gain insights into the solution of the present problems rooted in the past, (2) suggest future state of affairs, (3) understand the causes and effects of different interactions in different cultures, and (4) evaluate the data in relation to certain hypotheses, theories, and generalizations about the past.

49. CAN A RESEARCHER USE A THEORETICAL FRAMEWORK IN A QUALITATIVE RESEARCH?

Usually, the theoretical framework section is required for studies quantitative in nature. A conceptual framework is used in *qualitative studies*. The framework may actually be a theory. This is especially true for theory driven research (typically quantitative) that is attempting to test the validity of existing theory (e.g., Lederman, 2015). However, theories are formulated to explain and understand phenomena and challenge and extend existing knowledge within some initial assumptions. According to Abend (2013), the theoretical framework is the basis to support or reject a theory of a research study. The theoretical framework introduces and describes the theory that explains why the research problem under study exists.

50. WHAT ARE THE DIFFERENCES BETWEEN CONCEPTUAL FRAMEWORK AND THEORETICAL FRAMEWORK?

Theoretical framework in a study is based on an existing theory or theories (e.g., a theory of motivation). The conceptual framework, on the other hand, is something you can develop yourself based on this theory. You inevitably would use some-if not all-concept that this particular theory operates with. In addition, in your conceptual framework you can add your own concept/ constructs/variables that you think are relevant and then proceed to explore or test the relationship between them.

51. IS IT NECESSARY TO INCLUDE BOTH THEORETICAL FRAMEWORK AND CONCEPTUAL FRAMEWORK (RESEARCH FRAMEWORK) IN A STUDY?

Generally speaking, there are both conceptual as well as theoretical frameworks that are equally popular and used in both writing research papers and dissertations. The two concepts have an overlapping distribution which means there are both similarities and also differences between them. Primarily, theoretical framework is based upon theories that have already been substantiated. Such theories have resulted from research conducted earlier by other authors. On this basis, theoretical framework has a wider scope compared to conceptual framework. Nonetheless, it relies on multiple

generalizations describing the connection between variables related to a given phenomenon. By contrast, conceptual framework differs from theoretical framework in that it provides a sign post indicating the direction of action in research. Alternatively, conceptual framework facilitates the implementation of research by identifying the input and output parameters underlying the research.

52. IS THERE ANY DIFFERENCE BETWEEN A FRAMEWORK AND MODEL?

A framework indicates the perspective you are using to approach educational research. For example, your investigative framework might suggest whether a quantitative or a qualitative approach is best for addressing your research question. A model, though, is developed within a framework. Your model is a descriptive tool that might, for example, help you impose some order on how variables are potentially interrelated so you can begin to formulate questions aligned with your chosen framework. Theories are different. They can emerge from models but they are prescriptive, not merely descriptive; therefore, they can be tested.

53. WHAT ARE THE MAIN RULES THAT SHOULD BE FOCUSED TO WRITE THE CONCEPTUAL FRAMEWORK FOR A RESEARCH?

There is no magic formula for doing research because each research project has a unique nature. Therefore, the secret of an effective research lies in the research process preceding it and the nature of research topic you have chosen. Using critical thinking, you should carefully choose an interesting research question and then start gathering adequate information on the question. Next, you should systematically and objectively evaluate the evidence you have collected based on the standards of logic.

54. WHAT ARE THE THEORETICAL AND OPERATIONAL DEFINITIONS OF VARIABLES?

In addition to minimizing the number of variables to a couple for ease of investigation and manageability, researchers try to specify the variables by defining them as clearly and objectively as possible. A variable should be defined from two different perspectives: theoretical and operational. Any

variable operates within some sort of theoretical framework. In other words, there is a theory behind each variable. For instance, L2 acquisition as an abstract continuous variable can be defined on the basis of different theories of language acquisition presented in the literature. So, the researcher should study the parameters of different theories in order to come up with an acceptable theoretical definition for the language acquisition variable (e.g., structural theory, monitor theory, acculturation theory). It is important to note that following any theory would give different definitions for the variable under investigation. When a variable is defined theoretically, it should be defined in operational terms as well. An operational definition deals with the variable in terms of its measurable characteristics. That is, a variable is defined operationally when the way it can be measured is clarified. Taking L2 acquisition into consideration, it can be defined operationally as 'the extent to which a person comprehends, produces, or uses language in a given situation as measured by a particular test of language proficiency.'

55. WHAT IS A QUALITATIVE RESEARCH?

Qualitative research is characteristically different from quantitative research in a number of ways. First, it is inductive in nature since most often it begins with data collection and ends with hypothesis generation. Second, it involves a process-oriented approach in which the researcher has to adopt an obtrusive presence by being very close to the soft, non-parametric data. Third, it is exploratory in nature since its sole purpose is to reach a generalization. Fourth, it is cyclical involving the researcher in a rich data collection, data analysis and interpretation process, which can sometimes continue for a very long time. Fifth, qualitative methods like ethnographic research and/or case study deal with few participants, and as a result, the findings are often not generalizable.

56. HOW DO YOU JUSTIFY THAT QUALITATIVE METHODS ARE MORE VALID AND QUANTITATIVE METHODS ARE MORE RELIABLE?

The findings of qualitative methods are believed to be more valid than those of quantitative methods, since the scope of data collection is so wide and the researcher uses a variety of methods to collect data and to validate findings through triangulation. Therefore, the data in qualitative research are real, and deep. On the other hand, while quantitative methods are much more

limited in scope, they enjoy more reliability, because the data are objective, and the researcher tests the hypothesis with the use of objective instruments.

57. WHAT ARE SOME APPROACHES, AND DATA IN A QUALITATIVE STUDY?

Ø **Approaches to Qualitative Research:**

- Ethnography;
- Phenomenology;
- Field research;
- Ground theory.

Ø **Quantitative Data:**

- In-depth interview;
- Direct observation;
- Written documents.

Ø **Qualitative Methods:**

- Participant observation;
- Direct observation;
- Unstructured interviewing;
- Case studies.

58. WHY HAS QUALITATIVE METHODOLOGY BECOME THE MOST RELIABLE METHOD OF FACT FINDING?

The debate on Quantitative/Qualitative contrast and sometimes the superiority of one over the other has a long history; however, the basis which necessitates the application of one rather the other depends on the nature of the research topic. In fact, the issue of superiority is untenable. Since your topic has a qualitative nature and involves the use of soft data, your choice of qualitative approach is justified. However, you have to adopt a subjective stance by being very close to the data and making use of triangulation, emic rather than etic perspectivization and authoritative rather than plausible interpretation to enhance the dependability of your findings.

59. IS THERE ANY LIMITATION FOR THE SAMPLE SIZE IN A QUALITATIVE RESEARCH PAPER?

Creswell and Poth (2018) explain that sample size in qualitative research is dependent upon which approach is being utilized. Sample size may range from a single individual to dozens to hundreds-as with many topics related to research design and methodology, the phrase "it depends" applies here as well. Also keep in mind that during the process of data collection and/or initial analysis, additional samples may be required in order to fully glean the entire scope of the topic being investigated.

60. WHAT ARE SOME CRITERIA FOR JUDGING QUANTITATIVE AND QUALITATIVE VALIDITY? (TABLE 7.1)

Table 7.1. Traditional and Alternative Criteria for Quantitative/Qualitative Research

Traditional Criteria for Quantitative Research	**Alternative Criteria for Qualitative Research**
Internal validity	Credibility
External validity	Transferability
Reliability	Dependability
Objectivity	Confirmability

61. IN WHAT WAY EXTERNAL AND INTERNAL CRITICISM IS DIFFERENT?

External criticism aims to establish the authenticity and genuineness of the document. It helps the researcher find out whether the document is real, and if it is, in fact, provided by the person, who is claimed to have provided the document. To establish the authenticity, various techniques are employed among which test of signature, handwriting, scripts, spelling, language usage, and knowledge available at the time can be exemplified.

After verifying the authenticity of a document, the researcher should evaluate the accuracy and truthfulness of the content of the document. In

fact, through external criticism, the researcher verifies whether the document is genuine or not. Through internal criticism, however, the researcher tries to find out whether the content of the document is true or not. This is an important point, because, in some occasions, even if the document is real, the content may not be dependable due to the author's bias toward the event. More specifically, a historical researcher should pay attention to the following points in verifying the accuracy of a document:

1. Obtaining information about the knowledge and competence of the author (i.e., if he was really competent enough in that area to produce the documents).
2. Examining the time elapse between the event and the creation of the document (Reports written during the occurrence of the event would be more reliable than those written after some time elapse).
3. Being careful about the bias and motives of the writer (Incorrect documentation distorts the data. Most people remember what they 'want' to remember or what is more interesting to them).
4. Cross-validating the data; i.e., each piece of evidence should be compared with other pieces of information to check the degree of agreement with those of the others (If one observer's report does not agree with those of the others, the whole document will be under question).

62. WHAT IS HOLISTIC OR INTEGRATED APPROACH IN RESEARCH?

The holistic approach to research is concerned with the study of complex systems. Unlike the traditional, reductionist approaches to research whose goal emphasizes the need for dividing complex systems into smaller modules in order to understand them better, holistic approaches adopt a bird's eye view and study the targeted system as a unified whole. Such holistic-reductionist dichotomy has long formed the two different but complementary QUAN/QUAL (*deductive vs. Inductive*) methodologies in doing research. However, the integrated approach to research presents a different story. In this scenario, believing that traditional separate approaches fail to provide a representative picture of the subject under study, the researcher opts for the integration and linking of related subjects, facts, and knowledge representing the targeted issue. Notably, the integrated approach helps researchers to make effective

decisions about the research topic they are investigating because Integrated knowledge enables them to look at the subject as an integrated whole. A word of caution is in order here. For integration to be truly effective, the specified ideas should be relevant; otherwise, the approach will just be another separate subject study. In a nutshell, when applying the integrated approach, the researchers should draw in on relevant ideas, and opinions from other individuals to explain their conclusions concerning the study. Alternatively, they should live no stone unturned, and as a result, should hybridize and apply various techniques, and strategies in order to shed light on the research topic they are investigating.

63. ITERATION AND SATURATION IN A QUALITATIVE RESEARCH ARE TWO HOT TOPICS: IN WHAT WAY THEY ARE DIFFERENT?

Dörnyei (2007) defines *iteration and saturation* in *qualitative research* as follows: Researchers are in agreement that the participant selection process should remain open in a qualitative study as long as possible so that after initial accounts are gathered and analyzed, additional participants can be added who can fill gaps in the initial description or can expand or even challenge it. This cyclical process of moving back and forth between data collection and analysis is often referred to as 'iteration.' Although iteration is a key process in qualitative sampling, it cannot go on forever. When do we stop it? There are no rigid guidelines, but scholars agree that ideally the iterative process should go on until we reach saturation**.** Glaser and Strauss (1967) defined this as the point when additional data do not seem to develop the concepts any further but simply repeat what previous informants have already revealed. In other words, *saturation* is the point when the researcher becomes 'empirically confident' (p. 61) that he/she has all the data needed to answer the research question. In practice, however, researchers usually decide when to stop adding cases to a study based on a combination of theoretical saturation and pragmatic considerations such as available time and money (Eisenhardt, 1989).

64. WHEN IT IS APPROPRIATE TO USE QUALITATIVE, QUANTITATIVE OR MIXED APPROACH IN RESEARCH?

Qualitative Research is primarily exploratory research it is used to gain an understanding of underlying reasons, opinions, and motivation. Qualitative

research is also used to uncover trends in thought, and dive deeper into the problem. Quantitative Research is use to measurable data to formulate facts and uncover patterns in research. Quantitative data collection methods include various form of surveys-online surveys, paper survey, mobile, and kiosk survey, face to face interview, telephone interview. Mixed research approach is used when this integration provides a better understanding of the research problem than either each other.

65. IN WHAT WAYS CREDIBILITY, TRANSFERABILITY, AND DEPENDABILITY ARE DIFFERENT IN ANALYZING QUALITATIVE DATA?

In analyzing qualitative data, researchers must pay attention to three concerns that arise as part of the research: credibility, and dependability. In terms of credibility, because qualitative research can be based on the assumption of multiple, constructed realities, it may be more important for qualitative researchers to demonstrate that their findings are credible to their research population. Fraenkel and Wallen (2003) suggested *several techniques* to enhance credibility, including *continuing the data collection over a long enough period of time* to ensure that the participants have become used to the researcher and are behaving naturally. They also suggested collecting data in as many contexts and situations as possible to make certain that the picture provided in the research is as full and complete as it can be. For transferability in qualitative research, the research context is seen as integral. Although qualitative research findings are rarely directly transferable from one context to another, the extent to which findings may be transferred depends on the similarity of the context. Important for determining similarity of context is the method of reporting known as "*thick description,"* which refers to the process of using multiple perspectives to explain the insights gleaned from a study, and taking into account the actors' interpretations of their actions and the speakers' interpretations of their speech. Davis (1995) distinguished three essential components of *thick description:*

1. **Particular Description:** Representative examples from the data.
2. **General Description:** Information about the patterns in the data.
3. **Interpretive Commentary:** Explanation of the phenomena researched and interpretation of the meaning of the findings with respect to previous research.

The idea behind thick description is that if researchers report their findings with sufficient detail for readers to understand the characteristics of the research context and participants, the audience will be able to compare the research situation with their own and thus determine which findings may be appropriately transferred to their setting. Other steps can be taken to augment the transferability of research. For confirmability, researchers are required to make available full details of the data on which they are basing their claims or interpretations. This is similar to the concept of replicability in quantitative research, with the point being that another researcher should be able to examine the data and confirm, modify, or reject the first researcher's interpretations.

66. WHAT DO THE TERMS EMIC AND ETIC MEAN IN A QUALITATIVE RESEARCH?

Richards (2012) discusses some key concepts of the qualitative research. The terms emic and etic, derived from anthropology, are sometimes used to refer-rather crudely-to an insider's perspective on events (emic) as opposed to an outsider's (etic). The terms are sometimes illegitimately used with evaluative force, implying that an insider's view is somehow 'better' than an outsider's, when in fact both are potentially important. Ethnographers try to establish different perspectives on the situation they are studying and will use different theories, methods, techniques, and so on in order to avoid a one-sided view. The idea of getting a fix on things in this way is often described as triangulation, though there is no implication that only three sources need be used. You may also occasionally hear people referring to thick description, an expression coined by Clifford Geertz to refer to an account that is rich in detail, embracing different perspectives. The idea behind this is that it is possible to learn a great deal from narrowly focused observation, provided that the observation is sufficiently penetrating and comprehensive.

67. WHAT ARE THE DIFFERENT TYPES OF DESCRIPTIVE METHOD?

Descriptive methods are generally classified into three major groups of survey, inter-relational, and developmental methods. The main subcategories of survey methods include school survey, public opinion survey, and community survey. Inter-relational methods consist of case

studies, correlational studies, and causal-comparative studies. And the major classifications of developmental methods are longitudinal and cross-sectional studies.

68. WHAT IS A SURVEY STUDY?

Survey is a research technique in which data are gathered by asking questions of a group of individuals called respondents. It is a widely used method of research in sociology, business, political science, and government as well as in education. Typically, through surveys, researchers gather data with the intention of (a) describing the nature of existing conditions, (b) identifying standards with which existing conditions can be compared, and (c) attempting to determine the potential relationship between the two conditions. Surveys are probably the oldest methods available to researchers and can range from simple frequency counts to complex statistical procedures. For instance, a description of students' compositions at university in terms of their sex, age, and hometown is a simple case, whereas attempting to describe the nature of the writing process and factors contributing to this process will be a complex case. Since it is often difficult or even impossible for researchers to study large populations, they select a smaller portion, a sample of the population for the study. A survey that studies only a portion of the population is known as a sample survey.

69. WHAT ARE THE CHARACTERISTICS OF CASE STUDIES?

In a case study, a researcher makes an intensive investigation of a social unit. The data are collected about the present status, past events, and environmental factors that contribute to the identity, individuality, and behavioral patterns of the unit. In other words, the investigator attempts to discover all the variables that are important in the history or development of the case. The emphasis is on understanding why the individual does what he or she does and how behavior changes as the individual responds to the environment. This requires detailed study over a considerable period of time.

70. COMPARE AND CONTRAST CASE STUDIES WITH SINGLE-SUBJECT EXPERIMENTS.

Case studies and single-subject experiments both study a single individual or a single, discrete unit such as a family, a club, and the like. However, single-

subject experiments focus on a single behavior or very limited number of behaviors, whereas case studies attempt to describe the subject's entire range of behaviors and the relationship of these behaviors to the subject's history and environment.

71. WHAT ARE THE DIFFERENCES AND SIMILARITIES BETWEEN SURVEY AND CASE STUDIES IN INTER-RELATIONAL METHODS?

Case studies are similar to surveys in that in both methods data are collected on a social unit. However, the difference between the two lies in the number of factors and number of social units under investigation. That is, in surveys, data are collected on a few factors from a large number of social units. In a case study, however, the researcher makes an intensive study of a limited number of representative cases. Thus, a case study is narrow in scope but more exhaustive and qualitative in nature than a survey.

72. WHAT IS THE DIFFERENCE BETWEEN ONTOLOGY AND EPISTEMOLOGY?

Ontology refers to what sort of things exist in the social world and assumptions about the form and nature of that social reality. It is concerned with whether or not social reality exists independently of human understanding and interpretation; for instance, is there a shared social reality or 'multiple context-specific realities.' Broadly speaking, three distinct ontological positions identified are realism, and materialism (Snape and Spencer, 2003). Realism claims that there is an external reality independent of what people may think or understand it to be, whereas, idealism maintains that reality can only be understood via the human mind and socially constructed meanings. Similar to realism, materialism also claims that there is a real world but it is only the material or physical world that is considered to be real. Other phenomena, for instance, beliefs, values or experiences arise from the material world but do not shape it.

Epistemology is concerned with the nature of knowledge and ways of knowing and learning about social reality. Two main perspectives for knowing are positivism and interpretivism. Constructivism and 'naturalistic' are terms commonly referred to in the literature and sometimes in an inconsistent way for interpretivism (Guba and Lincoln 1994). The term constructivism is helpful because it identifies the basic principle that reality

is socially constructed; a relativist position that holds the view that there is no external reality independent of human consciousness (Robson 2002).

73. WHAT IS THE DIFFERENCE BETWEEN RESEARCH METHODS AND RESEARCH METHODOLOGY?

The scope of research methodology is wider than that of research method Research Method implies the methods employed by the researcher to conduct research. Research methodology signifies way to efficiently solving research problems. In other words, the research method is defined as the procedure or technique applied by the researcher to undertake research. On the other hand, research methodology is a system of methods, used scientifically for solving the research problem.

74. WHAT IS THE SIGNIFICANCE OF FIELD STUDIES REGARDING INSTRUMENTATION?

Field studies are usually distinguished by direct observation, which is carried out in two types. In one type, the researcher observes a behavior for its entire duration. This kind of sampling of behavior is called time continuous sampling. In this type, since the event should be thoroughly observed, the researcher prefers to study a short event. In the other type of sampling, called time point sampling, the researcher observes the behavior at the end of specific time interval. For example, studying the behavior of students attempting to learn a skill in a course in a semester can be of time continuous sampling type, while observing their behavior around the midterm of final exam is time point sampling.

75. WHAT IS THE DIFFERENCE BETWEEN CROSS-SECTIONAL STUDY AND CORRELATIONAL STUDY?

A cross-sectional research design involves collecting data from a population of varying demographic characteristics at the same time. A Correlational research design involves determining the relationship between two variables. It should be noted that data collected in a cross-sectional research can analyzed using correlational approaches as long as it involves establishing whether there is a relationship between two variables. Therefore, a correlational

approach of data handling may be used in a cross-sectional design, but the reverse is not true!

76. WHAT IS THE DIFFERENCE BETWEEN CAUSAL-COMPARATIVE AND CORRELATIONAL METHODS?

Through causal-comparative method, the researcher can determine the reasons for or causes of the current status of the phenomenon under study. This method enables the researcher to investigate possible cause-effect relationships by observing the existing conditions and searching back through the data for plausible causal factors. Correlational studies, however, are used to discover measure or determine the degree of relationship between two or more variables. Correlational methods help researchers obtain numerical values on the extent of the go togetherness of variables. There is no attempt to find causes or reasons for the observed consequence.

78. WHAT IS THE BEST PRINCIPLE OR METHOD FOR WRITING AN EFFECTIVE LITERATURE/ THEORY REVIEW?

Generally speaking, the literature review is guided by the key variables in the research title in which the theories related to them are mentioned in a sub-heading called "Theoretical Background." Alternatively, the works conducted in the same area are accommodated within another sub-heading; namely, "Empirical Background." Finally, the gap existing in the literature which you your research tends to fill should be explained followed by the purpose of the research you want to conduct.

79. HOW DOES THE DEVELOPMENTAL METHOD OF RESEARCH DIFFER FROM THE OTHER TWO DESCRIPTIVE METHODS?

Descriptive research is concerned with the existing status of a phenomenon. Developmental research, though a branch of descriptive research, deals not only with the existing condition, but also with the changes that take place over time. In developmental studies, researchers describe variables in the course of their development over time. The two main types of developmental methods include longitudinal and to cross-sectional studies.

80. WHAT IS LONGITUDINAL STUDY?

In longitudinal studies, the development of participants, especially children, on certain variables is investigated over a long period of time. For example, language acquisition of a child can be investigated over 3 or 4 years. In such cases, the researcher records the language performance of a few children at different intervals over a certain period of time. Since longitudinal studies are developmental in nature, the research has to be conducted very closely in the course of time. It cannot be intermittent, because the data collection procedure is carried out systematically and the data are collected at particular intervals. Therefore, the accomplishment of such studies requires continuous observations in a long period of time.

81. HOW CAN A RESEARCHER INCREASE THE GENERALIZABILITY OF LONGITUDINAL STUDIES?

To increase the generalizability of longitudinal studies, a number of concurrent longitudinal studies may as well be carried out. This would help in distinguishing the typical from the idiosyncratic, an undertaking which might be quite time-consuming. Alternatively, the findings from a number of independent longitudinal case studies might be added to make certain generalizations.

82. EXPLAIN THE DIFFERENCES BETWEEN LONGITUDINAL AND CROSS-SECTIONAL STUDIES.

Contrary to longitudinal studies that take a long time to be accomplished, researchers try cross-sectional methods through which they obtain similar data within a short period of time, even in one session of data collection, but with a large number of participants. In cross-sectional studies, however, the researcher has to limit the number of variables to a great extent, while in longitudinal studies so many variables can be investigated in the long-term observation of the participants.

83. WHAT IS A CONCEPT PAPER?

Concept papers are summaries of projects or issues reflecting the interests, and expertise of an author, a business project or an organization. Such papers are often used for securing potential sponsors and/or the funding required for

implementing specific high quality measures regarding a crucial concept. In point of fact, concept papers describe the goals and the possible outcomes of a targeted project. In regard with the perspectives on the current state of available literature concerning children witnessing violence and the related implications for social work practices, the targeted concept paper should initially be an attractive proposal identifying various kinds of violence such as domestic violence, community violence, as well as violence related to war and terrorism. Next, it is necessary to use an exhaustive evidential basis to indicate why research on the issue is significant. Finally, there is a need for pointing to the importance of social practices in taking responsible measures to alleviate the trauma dominating and influencing the lives of such children.

84. IN WHAT WAYS FUNDAMENTAL RESEARCH OR BASIC RESEARCH ARE DIFFERENT FROM APPLIED RESEARCH?

Fundamental research or basic research is significantly different from applied research. In point of fact, fundamental research is a kind of scientific research whose main goal is to generate new scientific theories for improving our understanding of natural phenomena. This type of research is often inductive beginning with data collection, and interpretation and ending with a scientific generalization. By contrast, applied research is a method of investigation whose aim is to solve a community related problem. This type of research is generally deductive and often uses the existing theories for solving real problems.

85. WHAT IS THE DIFFERENCE BETWEEN A THEORETICAL AND ANALYTICAL APPROACH?

A theoretical approach differs from an analytical approach because each one serves a different purpose. In general, a theoretical approach enjoys a strong evidential foundation collected and verified through extensive applications of scientific methods whose main objective is to explain a phenomenon. For instance, theoretical approaches concerning humanities and social sciences tend to describe various aspects of human behavior, and as a result, provide researchers with practical working models for investigating complex phenomena. By contrast, an analytical approach is methodologically driven and is often used to break a general topic down into its respective

constituents in order to provide a lucid explanation about its very nature. Differently stated, it is some kind of formal analysis targeting the reality of a complex structure by explaining the ways by which its internal elements are arranged and function.

86. WHAT ARE THE IMPORTANT FACTORS TO BE CONSIDERED BEFORE CHOOSING AN ANALYTICAL TOOL OR PROCEDURE FOR A RESEARCH?

Generally speaking, the type of research topic, and the data related to them decide the methodological framework for the study. More specifically, several factors determine the choice of an appropriate research method. They are:

1. **Theoretical Considerations:** Theories defining positivists versus interpretivists concerns have a direct bearing on selecting the analytical tools needed for conducting a particular research, which vary for quantitative and qualitative research methods.
2. **Practical Considerations:** Address such issues as the time, cost, logistics, sampling, ethical problems, etc.
3. Nature of the topic under investigation may also impact the choice of methodological frameworks. All in all, the journey to insightful research necessitates specific personal skills and decisions which the researcher has to foresee tactfully.

87. WHAT IS DIFFERENCE BETWEEN USEFUL AND USELESS RESEARCH IN SOCIETY?

Notably, measuring the benefits of university-oriented research has increasingly become important in recent years. It seems that the swing of the pendulum is actually following a new direction addressing the extent to which research outcomes contribute to the advancement of scientific-scholarly knowledge in general and their influences on sociocultural and socioeconomic aspects of the society in particular. The motive behind such change is nothing but the growing public concern about value for money. For measuring the impact of research on various social aspects is an emerging methodology and it is identified based on carefully chosen indicators such as end-user opinions, media visibility, and financial support by non-academic institutions, cooperation with the public and private sectors, generating entrepreneurship, etc.

89. DOES ACADEMIC RESEARCH HELPS TEACHING?

Academic research aims at creating new outcomes, ideas, and arguments by engaging teachers in the experiments concerning the realities associated with the process of teaching. Alternatively, since the research process is about a specific inquiry involving asking questions and developing answers through critical thinking and thoughtful reflection, it plays a pivotal role in keeping the teacher researcher up-to-date. Differently stated, research can act as a torchlight guiding the teacher researcher through different aspects of the classroom atmosphere. More significantly, critical reflection is essentially important in preparing teachers for a global society. On this basis, I strongly believe that teaching in the 21st century requires teachers' AR for the purpose of satisfying the educational demands of the teaching/learning contexts.

90. IS THE MIXED METHOD A PREFERRED CHOICE IN A RESEARCH DESIGN?

For many years, qualitative research method is regarded as wrong bedfellows and were mutually exclusively. In recent years, however, the use of mixed methods in specific research conditions, where such an application is justified, has become increasingly important. As a practical approach to research, it tends to admix quantitative and qualitative data in a single study. It is founded on a central premise whereby the combination of both methods can lead to a better understanding of research problems. In point of fact, the integration of qualitative and quantitative research at both synthesis and primary levels can exponentially contribute to the research methodology for several reasons. For one thing, mixed methods present a flexible organizational structure for investigating the problem at hand. Second, hybrid research methods develop conceptual frameworks offering credibility and enhancing conformability of the research outcome.

91. WHAT STEPS SHOULD A RESEARCHER FOLLOW TO DEVELOP A CAREFULLY-DESIGNED INTERVIEW?

Notably, for testing and measuring teachers/students' perceptions, and feelings about a construct like reflective teaching, the interview is one of the relevant instruments. To develop a carefully-designed interview with

appropriate credibility, however, you should follow several steps:

- Define the construct and identify its underlying sub-domains;
- Decide on the type of interview: structured, unstructured, or semi-structured;
- For each sub-domain form a few questions;
- Consult colleagues and experts about the effectiveness of the questions;
- Pilot tests the interview to see if it satisfies the requirements predicted by the research hypothesis.

92. IN WHAT WAYS GROUP AND FOCUS GROUP INTERVIEW ARE DIFFERENT?

Group interview is a means of collecting data in research. Group interviews are useful where a group of people have been working together for some time or common purpose, or where it is seen as important that everyone concerned is aware of what others in the group are. Group interviews can generate a wider range of responses than in individual interviews. They might be useful for gaining an insight into what might be pursued in subsequent individual interviews. Group interviews are often quicker than individual interviews and hence are timesaving. They can also bring together people with varied opinions, or as representatives of different collectivities. They are also very useful when interviewing children. Focus group interview or focused interview is a form of group interview, though not in the sense of a backwards and forwards between interviewer and group. Rather, the reliance is on the interaction within the group who discuss a topic supplied by the researcher, yielding a collective rather than an individual view. The assumption is that individual attitudes, beliefs, and choices of action do not form in a vacuum.

93. IS A TREATMENT/INTERVENTION USED IN A CASE STUDY APPROACH?

Ordinarily, the main objective of using case studies in language teaching is to provide an in-depth investigation of a targeted case in order to fathom out the intricate processes underlying language learning and language acquisition over a long period of time. By careful observation of the case in time and by collecting and analyzing the collected data, the researcher documents an

individualized experience about one of the working variables in language learning. In most cases, no intervention is actually practiced. However, there are also intervention case studies where the researchers intervene to remedy a problem like sleeplessness in a 4-year old girl or to boost the physical capacity of a woman athlete. Therefore, the need for intervention depends on the nature of the research topic and the predicted outcome.

94. WHAT IS THE DIFFERENCE BETWEEN EXPERIMENTAL AND QUASI-EXPERIMENTAL RESEARCH?

Experimental is another word to describe (prospective) randomized controlled trials. The main ingredients of an experimental condition will always be randomization and obviously then, a control group(s) with the exact same probability of receiving the intervention as receiving the control condition. Quasi-experiments are also called non-randomized studies, observational studies, etc. Here, the main ingredient is that (a) the study is almost always performed retrospectively, and (b) you can adjust the data to "mimic" a randomized trial (using observed data only). The most popular approach is matching, where a control group is found among the non-treated population who has the same observed baseline characteristics as the treated group. Therefore, the groups are comparable, and thus outcomes may be "assumed" unbiased.

95. EXPERIMENTAL RESEARCH IS CLASSIFIED AS TRUE, AND PRE-EXPERIMENTAL: IN WHAT WAY THEY ARE DIFFERENT?

Experimental research may also be classified according to how well they provide control of the threats to internal validity: True experimental research (also called *randomized designs*): An experimental design in which the researcher provides maximum control of extraneous variables involved in the treatment and uses randomization to assign subjects to treatments. Quasi-experimental research is research in which the investigator can control the treatment and the measurement of the dependent variable but cannot control assignment of the subjects to treatment. That is, it lacks randomization but employs other strategies to provide some control over extraneous variables. Pre-experimental research is research with little or no control of extraneous variables and therefore little internal validity. In non-experimental quantitative research, the researcher identifies variables

and may look for relationships among them but does not manipulate the variables.

96. WHAT ARE THE MAJOR FORMS OF NON-EXPERIMENTAL RESEARCH?

Major forms of non-experimental research are relationship studies including ex post facto and correlational research and survey research. Ex post facto research is similar to an experiment, except the researcher does not manipulate the IV, which has already occurred in the natural course of events. The researcher simply compares groups differing on the preexisting IV to determine any relationships to the dependent variable. Correlational research gathers data from individuals on two or more variables and then seeks to determine if the variables are related (correlated). Survey research (also called *descriptive research*) uses instruments such as questionnaires and interviews to gather information from groups of individuals. Surveys permit the researcher to summarize the characteristics of different groups or to measure their attitudes and opinions toward some issue.

97. IS THERE ANY DIFFERENCE BETWEEN ACTION RESEARCH (AR) AND CLASSROOM RESEARCH?

AR is a research approach which is an on-the-spot procedure designed to deal with a concrete problem located in an immediate situation. This means that a step-by-step process is constantly monitored over varying periods of time and by a variety of mechanisms (e.g*., observation, interview, questionnaire, diary study, and discourse analysis*) so that ensuing feedback may be translated into modifications, adjustments, directional changes, redefinitions, as necessary, so as to bring about lasting benefit to the ongoing process itself. Traditional research is more of theory while theory plays a secondary role in AR. In data analysis, while traditional research undergoes rigorous statistical analysis, it is not so with AR. AR is a form of teacher-driven research, the twin goals of which are to improve classroom practice, and to 'empower' teachers, i.e., to give them greater control over their working lives. AR is typically motivated less by the desire to answer the 'big' questions (such as How do people learn?) than by the need to solve a specific teaching problem in the local context. (Why are my learners having difficulty with this kind of activity?) It involves cycles of action and reflection. Having identified a problem, the teacher, either alone, or

in collaboration with colleagues, follows an experiential learning cycle of planning, acting, observing, and reflecting, which in turn leads to another research cycle. AR is sometimes thought to lack the rigor of academic research. It can be made more rigorous by collecting data from different sources, or by the use of more than one data-gathering tool. For example, to investigate how course-books are being used in a school, a questionnaire could be distributed to teachers. The findings of this questionnaire could then be checked against the results of a survey of student opinions, or by classroom observation, or by both.

98. IN WHAT WAY COHORT STUDIES AND CROSS-SECTIONAL SURVEYS ARE DIFFERENT?

In a cohort study, a specific population is followed over a length of time with different random samples studied at various points. Whereas trend studies sample a general population that changes in membership over time, a cohort study samples a specific population whose members do not change over the duration of the survey. Typically, a cohort group has age in common. For example, a school system might follow the high school graduating class(es) of 2004 over time and ask them questions about higher education, work experiences, attitudes, and so on. From a list of all the graduates, a random sample is drawn at different points in time, and data are collected from that sample. Thus, the population remains the same during the study, but the individuals surveyed are different each time. Cross-sectional surveys study a cross section (sample) of a population at a single point in time. In a longitudinal study of vocabulary development, for example, a researcher would compare a measure of first-grade students' vocabulary skills in 2000 with one when they were fourth-grade students in 2003 and seventh-grade students in 2006. A cross-sectional study would compare the vocabulary skills of a sample of children from grades 1, 4, and 7 in 2006. The cross-sectional survey is the method of choice if you want to gather the data at one point in time.

99. WHAT IS THE DIFFERENCE BETWEEN THE CATEGORICAL AND CONTINUOUS DATA?

Variables can be categorical, or they can be continuous. When researchers classify subjects by sorting them into mutually exclusive groups, the attribute on which they base the classification is termed a categorical variable. Home

language, county of residence, father's principal occupation, and school in which enrolled are examples of categorical variables. The simplest type of categorical variable has only two mutually exclusive classes and is called a *dichotomous variable* (also called discrete or nominal). Male-female, citizen-alien, and pass-fail are dichotomous variables. Some categorical variables have more than two classes; examples are educational level, religious affiliation, and state of birth. A variable which is measured on *interval or ratio scales* of measurement. Continuous variables can theoretically take on any value along a continuum. With continuous variables the number of possible values is theoretically unlimited because the abilities or attributes that these variables represent are assumed to vary continuously. For example, age is a continuous variable because, theoretically at least, someone can be any age. Test scores, income, temperature, weight, and height are other examples of continuous variables. A continuous variable that is normally expressed numerically because it differs in degree rather than kind is called *quantitative variable* (also called *numerical variable*).

100. WHAT IS THE DIFFERENCE BETWEEN THE BASELINE GROUP AND COMPARISON ASSIGNMENT GROUP?

The control group is the group in a study that does not receive the experimental treatment; it is compared with the experimental group to determine the effects of the treatment. It is also called the comparison group. The experimental group is the group in a research study that receives the experimental treatment. The experimental group is also called *"the participant group," "the treatment group*," and "*the intervention group."* The control group in quasi-experimental studies is defined to be those lacking these characteristics (e.g., males, respondents who are older or younger than adolescence, those of high and medium language proficiency) or absent from selected settings (e.g., those in public schools, nonparticipants in a program of interest). Control groups may alternatively be called *baseline groups*. In a true experiment, control groups are formed through random assignment of respondents. Random assignment supports the assumption that the control group and the experimental group are similar enough (i.e., equivalent) in relevant ways so as to be genuinely comparable. In true experimental studies and between subject designs, respondents are first randomly selected from the *sampling frame;* then they are randomly assigned into either a control group or an experimental group or groups. At the conclusion of the study,

outcome measures (such as responses on one or more *dependent variables,* or distributions on questionnaire items) are compared between those in the control group and those in the experimental group(s).

The effect of a treatment (e.g., a different incentive level administered to each group) is assessed on the basis of the difference (or differences) observed between the control group and one or more experimental group. Similarly, in within-subjects designs, respondents are randomly selected from the sampling frame. However, in such cases, they are not randomly assigned into control versus experimental groups. Instead, baseline data are gathered from the respondents themselves. These data are treated as control data to be compared with outcome measures that are hypothesized to be the result of a treatment after the respondents are exposed to the experimental treatment. Thus, the respondents act as their own control group in within-subject designs. More common than comparing a treatment group to a group receiving no treatment (true control group) is the situation in which researchers compare groups receiving different treatments. These are called comparison groups. The majority of educational experiments study the difference in the results of two or more treatments rather than the difference in the results of one treatment versus no treatment at all.

101. IN WHAT WAYS CONTENT ANALYSIS, META-ANALYSIS, AND ENVIRONMENTAL ANALYSIS ARE DIFFERENT?

Content analysis is a procedure which is used to convert written or spoken information into data that can be analyzed and interpreted. Content analysis is a qualitative research technique which is used to quantify aspects of written or spoken text or of some form of visual representation. It is used for analyzing and tabulating the frequency of occurrence of themes, emotions topics, ideas, and other aspects of the content of written and spoken communication. Meta-analysis is a term which refers to the statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings. Meta-analysis is a procedure that allows a researcher to systematically and statistically summarize the hypothesis findings of several previous studies. In fact, meta-analysis refers to the analysis of the analyzes. The term was introduced to describe a systematic approach to reviewing and synthesizing a large number of published research studies on a topic. The purpose of meta-analysis is to allow a research community to come to some conclusion with respect to the validity of a that is not based on one or two

studies, but rather is based on a multitude of studies which have addressed the same general hypothesis. Environmental analysis is a strategic tool. It is a process to identify all the external and internal elements, which can affect the organization's performance. The analysis entails assessing the level of threat or opportunity the factors might present.

102. WHAT ARE TWO CATEGORIES OF META-ANALYZES?

Meta-analyzes can be separated into two categories: integrative and interpretive. Integrative meta-analysis focuses on summarizing the data and is usually quantitative in nature. Interpretive meta-analysis focuses on developing concepts and operationalizing concepts a priori. Interpretive analysis can be carried out using quantitative and qualitative approaches, does not have a priori concepts to test, and leads to the development of new interpretations from the analysis of multiple field studies. The goal is not to aggregate the data (e.g., overall effect size) but to reinterpret. Quantitative meta-analysis reviews statistically a collection of analyzes from related individual studies in order to provide a summarization or integration of the results. The core of this review is the calculation of an effect size. The effect size can be based on the difference between two groups divided by their pooled standard deviation nor a correlation between two variables. Qualitative meta-analysis also involves the synthesis of evidence from primary studies, but there are numerous forms of synthesis with different goals, though most are interpretive techniques.

103. WHAT ARE MAJOR ADVANTAGES META-ANALYSIS OVER A NARRATIVE REVIEW?

Meta-analysis has three major advantages over a narrative review. Firstly, it allows the reviewer to quantify the trends that are contained in the literature by combining the effect sizes and combining the probabilities that have been found in a number of studies. Secondly, by combining the results of a number of studies the power of the statistical test is increased. In this case, a number of non-significant findings that all show the same trend, may, when combined, prove to be significant. Thirdly, the process of preparing the results of previous research for a meta-analysis forces the reviewer to read the studies more thoroughly than would be the case for a narrative review.

104. WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF TEXT ANALYSIS ORIENTATION?

Text analysis can help me ESL researchers, teachers, and students to investigate how texts are organized. By understanding text organization, researchers can improve the quality of materials by using techniques that are more comprehensive than simple mechanical word counts. There are various approaches to text analysis for the evaluation of the quality of texts for either instructional or assessment purposes. Despite the above-mentioned values, text analysis orientation is time consuming and difficult for many teachers and students to adopt directly or systematically in the classroom. Moreover, many text analysts have concerned themselves with studying specific, isolated features of texts in a way that limits the applications of their findings to educational contexts. Besides, text analysis presents many different theoretical models and research methodologies. Therefore, few approaches have consolidated this research in a way that it can prescribe conventional or readily usable practices that do not require specialized training. However, advancements in computer technology have helped researchers to perform text analysis more efficiently and easily than before. Various computer packages are now available to perform text analysis of different kinds. A good example is the varieties of corpus analysis at the present time.

105. IS INTERPRETATIVE PHENOMENOLOGICAL ANALYSIS (IPA) OR THEMATIC ANALYSIS THE MOST APPROPRIATE RESEARCH METHOD FOR THE QUALITATIVE STUDY?

IPA is a phenomenological methodology. Thematic analysis is not a methodology. It is a method/design approach to qualitative data analysis alone. You could have both in your study. IPA has its own data analysis steps-aligned more with hermeneutics-but it is acceptable to use an IPA framework and adopt Braun and Clark's step-wise thematic analysis. Here is a link to a useful article that uses both IPA analysis and thematic analysis for the same set of collected data. It is more complex through- and your suggested sample size is probably too small to generate a sub-set.

106. WHAT IS THE DIFFERENCE BETWEEN LITERATURE REVIEW, THEORETICAL ANALYSIS AND CONCEPTUAL ANALYSIS?

A literature review should cover all of the scientific literature in a field that is defined by the author. Much of this is usually achieved by reference to previous reviews. By doing this, it is not necessary to review all of the past literature, but all studies that have been published since the most recent thorough review should be included. The amount and quality of analysis in a review may vary from little (i.e., a mostly descriptive review) to a lot (i.e., an analytical review). A theoretical analysis would only include reference to those works that are necessary for the analysis (although subjectively omitting works that may run counter to the analysis is not acceptable in a scientific work). The analysis should be rigorous. A conceptual analysis may be the same as a theoretical analysis, but this category allows for more flexibility and less rigor. In essence, it's the first step in analyzing an idea and may be floated for the purpose of stimulating feedback.

107. IN WHAT WAY ETHNOGRAPHIC AND PHENOMENOLOGICAL RESEARCH IS DIFFERENT?

Creswell (2013) states that ethnography focuses on an entire cultural group (i.e., *culture-sharing group*). Granted, sometimes this cultural group may be small (*a few teachers, a few social workers*), but typically it is large, involving many people who interact over time (teachers in an entire school, a community social work group). *Ethnography* is a qualitative design in which the researcher describes and interprets the shared and learned patterns of values, behaviors, beliefs, and language of a culture-sharing group (Harris, 1968). As both a process and an outcome of research (Agar, 1980), ethnography is a way of studying a culture-sharing group as well as the final, written product of that research. An ethnography is a description and interpretation of a cultural or social group or system. The researcher examines the group's observable and learned patterns of behavior, customs, and ways of life (Harris, 1968). As both a process and an outcome of research (Agar, 1980), an ethnography is a product of research, typically found in book-length form. As a process, ethnography involves prolonged observation of the group, typically through participant observation in which the researcher is immersed in the day-to-day lives of the people or through one-on-one interviews with members of the group.

Phenomenology is a school of thought and approach to *qualitative research* which emphasizes a focus on people's subjective experiences and interpretations of the world. That is, the phenomenologist wants to understand how the world appears to others. More precisely, it is the study of lived or experiential meaning and attempts to describe and interpret these meanings in the ways that they emerge and are shaped by consciousness, language, our cognitive and non-cognitive sensibilities, and by our preunderstandings and presuppositions. It is a reaction against the empiricist conception of the world as an objective universe of facts. *Phenomenological* studies attempt to capture the essence of the human experience. Like other qualitative researchers, phenomenologists are interested in recording the individual perspectives of the participants in the study. However, phenomenology stresses the importance of each individual and his/her respective view of reality. To encourage these perspectives to emerge, phenomenologists use open-ended *interviews* as their primary data collection tool. The phenomenologist's role is to give voice to those perspectives.

108. HOW DO PHENOMENOLOGY AND GROUNDED THEORY RELATE TO EACH OTHER?

Phenomenology is a qualitative approach that emphasis subjectivity rather than objectivity. It focuses on description more than analysis and interpretation rather than measurement. Phenomenology focuses on how life is experienced. It does not explain the causes of things but tries to describe how things are experienced. Grounded theory is an approach dedicated to generating theories. It is not concerned with descriptive accounts of subject matters or testing theories. I do not think that they present or represent the same thing. Each of them has its unique characteristics and uses in research for specific purposes.

109. HOW ARE ETHNOGRAPHIC STUDIES APPLIED TO LANGUAGE LEARNING?

Ethnographic research method developed by anthropologists is a way of describing human cultures. It is conducted through participant observation and in-depth interviewing to gain insight into the group. Ethnography has moved from anthropology to other disciplines including education, where it emphasizes a holistic approach to data collection and an inductive approach to data analysis. As to language learning contexts, there have been

studies conducted in ESL programs using techniques such as triangulation. Triangulation is a technique through which a combination of introspection and observation, the teachers,' the researchers,' and the students' perspective on classroom interaction is used for a better understanding of a common experience.

110. WHAT IS GROUNDED THEORY?

Grounded theory is used in qualitative study seeking to develop a theoretical statement from coding data. The emphasis in this methodology is on the generation of theory which is grounded in the data. Grounded theory, indeed, holds that concepts and hypotheses should not precede the gathering of information, in that theory is rooted in the reality observed and it is the researcher's task to discover it. Participants in the study would all have experienced the process, and the development of the theory might help explain practice or provide a framework for further research. A key idea is that this theory-development does not come "off the shelf," but rather is generated or "grounded" in data from participants who have experienced the process (Strauss and Corbin, 1998). Thus, grounded theory is a qualitative research design in which the inquirer generates a general explanation (a theory) of a process, action, or interaction shaped by the views of a large number of participants (Strauss and Corbin, 1998).

111. WHAT IS THE DIFFERENCE BETWEEN LONGITUDINAL AND CROSS-SECTIONAL STUDY?

A longitudinal study gathers information at different points in time in order to study the changes over extended periods of time. Longitudinal research is used to describe a variety of studies that are conducted over a period of time. Often, the word developmental is employed in connection with longitudinal studies that deal specifically with aspects of human growth. Longitudinal designs are used most frequently to study age-related changes in how people think, feel, and behave. For example, we might use a longitudinal design to study how the strategies that children use to remember things change as they get older. A cross-sectional research studies a cross section (sample) of a population at a single point in time (Ary et al., 2014, pp. 403, 404). A cross-sectional study is one that produces a snapshot of a population at a particular point in time. Details about an event or phenomenon are gathered once, and once only, for each subject or case studied. Consequently, cross-sectional

studies offer an instant, but static, photograph of the process being studied. Their one-off nature makes such studies easier to organize and cheap as well as giving them the advantage of immediacy, offering instant results.

112. IN WHAT WAY NARRATIVE INQUIRY, LIFE HISTORY AND BIOGRAPHICAL RESEARCH IS DIFFERENT?

A genre of narrative inquiry that distinguishes itself from other genres by the extent to which it takes into account the social, historical, and cultural contexts within which the story is situated. While life history research may focus on a particular period or aspect of a person's life, these are usually considered within the context of the person's whole life. A distinction should perhaps be drawn between a biography where the focus is on the individual life as an unfolding story, and life history, where the context plays an important part. In fact, the two approaches are very close and could be included under the broader umbrella of case study.

113. IN WHAT WAYS META-NARRATIVE ARE NARRATIVE RESEARCH ARE DIFFERENT?

A term that can be understood in two ways: (1) as a narrative about narrative or (2) as a narrative above narrative. A narrative is a story that describes a particular sequence of events in the context of particular characters. The content and structure of narratives are deliberately (although sometimes unconsciously) selected to support a particular point of view and to encourage a particular interpretation or understanding. The analysis of narrative—that is, the narratives constructed in the course of thinking about narrative—creates meta-narratives. Similarly, researchers who use *narrative analysis* to study may construct meta-narratives in the course of their analyzes.

Meta-narratives provide an organizing framework for knowledge and, through this mechanism, distinguish between knowledge that is legitimate and knowledge that is unjustified. People may also organize their experiences according to a meta-narrative. For example, the metanarrative of psychoanalysis structures an individual's childhood memories differently from the meta-narrative *of symbolic interactionism.* Narrative inquiry or narrative research approach for narratively inquiring into people and thus allowing for the intimate study of individuals' experiences over time and in context. Beginning with a narrative view of experience, researchers attend to place,

temporality, and sociality, from within a methodological three-dimensional narrative inquiry space that allows for inquiry into both researchers' and participants' storied life experiences. Within this space, each story told and lived is situated and understood within larger cultural, social, and institutional narratives. Narrative inquiry is marked by its emphasis on relational engagement between researcher and research participants. Narrative inquiry involves working with people's consciously told stories, recognizing that these rest on deeper stories of which people are often unaware. Participants construct stories that support their interpretation of themselves, excluding experiences and events that undermine the identities they currently claim. Whether or not they believe the stories they tell is relatively unimportant because the inquiry goes beyond the specific stories to explore the assumptions inherent in the shaping of those stories.

114. IN WHAT WAYS PANEL AND TREND STUDIES ARE DIFFERENT?

In a panel study, the same subjects are surveyed several times over an extended period of time. For example, a researcher studying the development of quantitative reasoning in elementary school children would select a sample of first-graders and administer a measure of quantitative reasoning. This same group would be followed through successive grade levels and tested each year to assess how quantitative reasoning skills develop over time. Researchers have studied how age affects IQ by measuring the same individuals as adolescents and when they were college-aged, middle-aged, and older. Because the same subjects are studied over time, researchers can see the changes in the individuals' behavior and investigate the reasons for the changes. An example of a panel study is Terman's (1926) classic study of intelligence in which he followed exceptionally bright children to maturity. A Trend Study differs from a panel study in that different individuals randomly drawn from the same general population are surveyed at intervals over a period of time. For example, researchers who have studied national trends in mathematics achievement sample middle school students at various intervals and measure their math performance. Although the same individuals are not tested each time, if the samples from the population of middle school students are selected randomly, the results each time can be considered representative of the middle school population from which the student samples were drawn. Test scores from year to year are compared to determine if any trends are evident.

116. ARE PARTICIPANT AND SAMPLE THE SAME OR DIFFERENT?

A participant is someone who takes part in a research study. Sometimes research participants are referred to as research 'subjects. In research population is the group of people being studied, usually by taking samples from that population. Populations may be defined by any characteristics, such as geography, age group, and certain diseases. Sample: the population researched in a particular study. Usually, attempts are made to select a "*sample population*" that is considered representative of groups of people to whom results will be generalized or transferred. In studies that use inferential statistics to analyze results or which are designed to be generalizable, sample size is critical, generally the larger the number in the sample, the higher the likelihood of a representative distribution of the population.

117. WHY DO THE RESEARCHERS HAVE RANDOMIZATION IN THE STUDY?

It is very important to understand the difference between random selection and random assignment. In fact, randomization refers to both random selections of subjects from a population and random assignment of subjects into the treatment groups. The purpose of random selection is to allow you to make generalizations from a sample to a population. The generally understood meaning of the word random is "without purpose or by accident. However, random sampling is purposeful and methodical. It is apparent that a sample selected randomly is not subject to the biases of the researcher. Rather, researchers commit themselves to selecting a sample in such a way that their biases are not permitted to operate; chance alone determines which elements in the population will be in the sample. They are pledging to avoid a deliberate selection of subjects who will confirm the hypothesis. You would expect a random sample to be representative of the target population sampled. However, a random selection, especially with small samples, does not absolutely guarantee a sample that will represent the population well. Random selection does guarantee that any differences between the sample and the parent population are only a function of chance and not a result of the researcher's bias. The differences between random samples and their parent population are not systematic. For example, the mean reading achievement of a random sample of sixth-graders may be higher than the mean reading achievement of the target population, but it is equally likely that the mean for the sample will be lower than the mean for the target population. In

other words, with random sampling the sampling errors are just as likely to be negative as they are to be positive. Thus, variation across individuals is dealt with through random selection and random assignment. Hence, we can claim that the variation is not systematic and is a function of chance alone, and that the findings from the sample can be generalized to the parent population.

118. WHAT IS THE DIFFERENCE BETWEEN QUOTA AND DIMENSIONAL SAMPLING?

Quota sampling is similar to proportional *stratified random* sampling without the 'random' element. That is; we start off with as sampling frame and then determine the main proportions of the subgroups defined by the parameters included in the frame. The actual sample, then, is selected in a way as to reflect these proportions, but within the weighted subgroups no random sampling is used but rather the researcher meets the quotas by selecting participants he/she can have access to. For example, if the sampling frame in a study of 300 language learners specifies that 50% of the participants should come from bilingual and the other 50% from monolingual families, the researcher needs to recruit 150 participants from each group but the selection does not have to be random. Dimensional sampling is a variation of quota sampling: the researcher makes sure that at least one representative of every· combination of the various parameters in the sampling frame is included in the sample.

119. WHAT IS THE DIFFERENCE BETWEEN STRATIFIED AND QUOTA SAMPLING?

Stratified purposive sampling is a hybrid approach in which the aim is to select groups that display variation on a particular phenomenon but each of which is fairly homogeneous, so that subgroups can be compared. Snowball sampling is a type of *non-probability sampling* in which researchers identify a small number of individuals who have the characteristics in which they are interested. These people are then used as informants to identify, or put the researchers in touch with, others who qualify for inclusion and these, in turn, identify yet others—hence the term snowball sampling. Quota sampling is a type of non-probability sampling in which a specific number of cases (the quota) is selected from each stratum. Like a stratified sampling, a quota sampling strives to represent significant characteristics (strata) of the wider

population; unlike stratified sampling, it sets out to represent these in the proportions in which they can be found in the wider population.

120. HOW TO FIGURE OUT AN APPROPRIATE SAMPLE FOR THE PILOT STUDY?

According to Connelly (2008), extant literature suggests that a pilot study sample should be 10% of the sample projected for the larger parent study. However, Hertzog (2008) cautions that this s not a simple or straight forward issue to resolve because these types of studies are influenced by many factors. Nevertheless, Michael (1995) suggested 10–30 participants; Hill (1998) suggested 10 to 30 participants for pilots in survey research; Julious (2005) in the medical field, and van Belle (2002) suggested 12; Treece and Treece (1982) suggested 10% of the project sample size. I would say that 10 would be a minimum, and 30 might be considered in your project sample size is expected to be 300.

121. WHAT IS THE DIFFERENCE BETWEEN BOOTSTRAPPING AND JACKKNIFE METHOD FOR VARIANCE ESTIMATION IN SURVEYS?

Bootstrapping is a popular method for variance estimation in surveys. It consists of sub-sampling from the initial sample. Within each stratum in the sample, a simple random subsample is selected with replacement. This creates a finite number of new samples (or repetitions). The same parameter estimate is then calculated for each of the subsamples. The variance of the estimated parameter is then equal to the variance of the estimates from these subsamples. Bootstrap involves resampling with replacement and therefore each time produces a different sample and therefore different results. Jackknife on the other produces the same result. It is used to assess bias and variance. Bootstrap application is more cumbersome than that of the Jackknife technique is a (usually) computer-intensive resampling method used to estimate population parameters (e.g., percentage), and/or to gauge uncertainty in these estimates (e.g., standard error). The name is derived from the approach that involves removing each observation (i.e., cut with a knife) one at a time (or two at a time for the second-order Jackknife, and so on), calculating the mean for each new sample (original sample minus the omitted case) and then averaging the means of the new samples.

122. WHAT IS THE DIFFERENCE BETWEEN HAWTHORN AND HALO EFFECT?

Hawthorne effect is a threat to external validity which refers to the tendency of subjects to improve their performance under observation, simply because they are aware that they are being studied or are involved in an experiment so that the results of the study are more closely related to this pleasure than anything that actually occurs in the research. Procedures to control this problem are: using unobtrusive measures (data-collection procedures that involve no intrusion into the naturally occurring course of events and in which subjects are unaware they are being studied), telling control subjects they are also in an experiment even if they are to receive no manipulation, and allowing an adaptation period during which no observations are made. Halo effect is a threat to questionnaire and external validity which refers to the rater's belief in the goodness of participants (the participants have haloes around their heads!), such that the more negative aspects of their behavior or personality are neglected or overlooked. For example, a researcher might rate a student who does good academic work as also being superior in intelligence, popularity, honesty, perseverance, and all other aspects of personality. The halo effect concerns the human tendency to overgeneralize. If our overall impression of a person or a topic is positive, we may be disinclined to say anything less than positive about them even if it comes to specific details.

123. WHAT IS THE DIFFERENCE BETWEEN HALO AND HORN EFFECT?

Halo is a threat to questionnaire in which the negative aspect the respondents' behaviour are neglected. If our overall impression of a person or a topic is positive, we may be disinclined to say anything less than positive about them even if it comes to specific details. For many students, for example, a teacher they love is perfect in everything s/he does—which is obviously not true. Halo effect is contrasted with the horns effect, which refers to the rater's belief in the badness of the participants (the participants have devils' horns on their heads!), such that the more positive aspects of their behavior or personality are neglected or overlooked. For example, if we have a generally unfavorable impression of a person, we are likely to rate the person low on all aspects.

124. WHAT IS JOHN HENRY EFFECT IN A RESEARCH?

Ary et al. (2014) states that John Henry effect**,** also called *compensatory rivalry,* refers to the tendency of control group subjects who know they are in an experiment to exert extra effort and hence to perform above their typical or expected average. They may perceive that they are in competition with the experimental group and they want to do just as well or better. Thus, the difference (or lack of difference) between the groups may be caused by the control subjects' increased motivation rather than by the experimental treatment.

125. WHAT ARE THE IMPLICATIONS OF CLASSROOM RESEARCH?

Classroom-centered research tries to investigate what happens inside the classroom when learners and teachers come together. As the language classroom is the very object of investigation rather than just the setting for the study, all the variables such as teachers, students, setting, instructional materials, classroom activities, etc., become the influential factors and the focus of research. Classroom research gives teachers insights as to how to cope with immediate classroom problems. It helps them move toward exploratory teaching, which not only tries out new ideas, but also tries to learn as much as possible from doing so.

126. EXPLAIN THE TECHNIQUES COMMONLY USED IN CLASSROOM RESEARCH?

Research in language classroom can be done either by observation, or by introspection or by a combination of the two known as triangulation. Observation involves keeping a record of what goes on in the classroom using tape recorders, field notes, and written records. Introspection refers to research techniques that involve, for example, asking people to answer the questions rather than asking them to allow themselves to be observed in action. They are required to introspect, to reflect on their experience through interview, or by responding to a questionnaire. Diary keeping is a form of introspection, which is, in fact, the participants' equivalent of field notes. Triangulation refers to the important point that multiple viewpoints (at least three, namely, the researcher's, the teacher's, and the learners') are necessary if the researchers want to understand what goes on in the classroom, rather than putting down prejudices. The principle of triangulation would simply

mean that it is most useful to utilize data from a combination of observation and introspection with a variety of observers.

127. WHAT ARE THE MERITS AND DEMERITS OF PARTICIPANT OBSERVATION?

Participant observation has the advantage of providing the researchers with genuine data on the subjects' behavior. The researchers themselves are involved in the study, and can, therefore, observe the phenomena as naturally occurring without the fear of the outsider's effect. Nevertheless, the active participation of the researchers may deprive them of an overall view of the whole events. This is because they are entirely involved in the phenomena, and may not be able to observe and/or become aware of the outside events that are at work, which can change the direction of the research.

128. DESCRIBE INTER-RELATIONAL METHODS

Inter-relational methods help researchers investigate the relationship among the existing factors. There are different ways of examining the interrelation of variables. Some researchers might attempt to investigate various factors interacting within a social unit. Others might be interested in examining the mere go togetherness of two or more factors. Hence, depending on the nature, scope, and depth of the existing relationships, there are four major methods of studying the interrelations of factors, namely, case studies, field studies, correlational studies, and casual-comparative studies.

129. WHAT IS MEANT BY CONTEXTUALIZATION OF RESEARCH?

Contextualization of research refers to placing the topic or problem of research in a broader context by reviewing the related literature. This will help the researchers broaden their view and perspective on the research topic and narrow down the topic and arrive at a focused research question. Further, contextualization helps them to have comprehensive information on what has been done on the topic of their interest. Finally, contextualization would help researchers to avoid potential mistakes made by previous researchers.

130. WHAT ARE THE ADVANTAGES OF MULTI-METHOD APPROACH' OVER THE OTHER METHODS OF RESEARCH?

The concept of '*multi-method approach'* was first suggested by Cohan to refer to strategies of giving and receiving feedback on compositions. He believed that this approach would partly remove the bias implicit in any data collection procedure. His method comprises different verbal report techniques as well as external observation and analysis of compositions. Multiple methods of data collection and analysis permit a more complete view of the research object and reveal at the same time the relative potential of different methods.

131. IS THERE ANY PREFERENCE FOR SYNTHETIC OVER ANALYTIC APPROACH IN LANGUAGE STUDIES?

A synthetic approach views the research process holistically, as a composite of factors, which might not be easily or validly analyzable into separate parts. An analytic approach, on the other hand, selects one or several factors, which make up the phenomenon for close analysis, perhaps in a controlled study. Thus, if it is felt that a particular phenomenon is best studied from a holistic point of view and that taking an analytic approach will distort the nature of the phenomenon, the synthetic approach is employed (e.g., looking at all or many aspects of different classroom practices and selecting one from among many practices for investigation).

Taking an analytic approach means that the phenomenon is analyzed into its constituent parts and one or a cluster of these constituent parts is examined in greater detail to the exclusion of other factors. When an analytic approach is taken, it means usually that the investigation will benefit from looking at some aspect of the problem in isolation.

132. IN WHAT WAYS CONSTANCY, UNIFORMITY, AND SYSTEMATIC APPROACH ARE DIFFERENT IN RESEARCH?

Uniformity is a general characteristic of nature, which means that many natural events happen quite systematically in the universe. Constancy, however, is an individual feature whereby some phenomena do not change

their basic characteristic in a given period of time. Analogically, in doing systematic research, these phenomena are observed. For instance, all participants should be treated in a similar manner, i.e., uniformity. Further, the findings should have similar effects on most of the novel occasions, i.e., constancy.

While uniformity is an attribute of the universe, constancy is an attribute of a single phenomenon, which refers to its unchangeable nature in the course of time. When researchers are involved in studying such a phenomenon, they can't help observing it in relation to other phenomena in particular and to the whole universe in general. Therefore, the generative characteristic of research leads researchers to generate questions that are both directed to the given phenomenon and relevant to other events in the universe. Answers to these questions would inevitably lead to further questions, and the never ending cycle of research would keep going on to explore more mysteries of the universe. Thus, the three notions of uniformity, constancy, and generativity are interrelated.

The concept of constancy and uniformity forms the foundation of "systematic approach" in research. Of course, there are different systematic approaches for different research activities. For instance, in physical sciences, the degree of constancy and uniformity is very high because the elements upon which research is conducted are concrete, observable, and controllable. In human sciences, however, the research cannot and should not be expected to achieve the same degree of rigor, as it would in physical sciences. Most phenomena in human sciences are abstract. They are intermingled with emotional and attitudinal characteristics exclusive to human beings. Therefore, despite the systematic nature of scientific research, the degree of constancy may vary from one branch of science to another.

133. WHAT IS SAMPLE SIZE FOR MULTIPLE REGRESSION ANALYSIS?

The issue at stake here is generalizability. That is, with small samples you may obtain a result that does not generalize (cannot be repeated) with other samples. If your results do not generalize to other samples, they are of little scientific value. So how many cases or participants do you need? Stevens (1996, p. 72) recommends that 'for social science research, about 15 participants per predictor are needed for a reliable equation.' Tabachnick and Fidell (2007, p. 123) give a formula for calculating sample size requirements, taking into account the number of IVs that you wish to use: $N > 50 + 8\ m$

(where m = number of IVs). If you have five IVs, you will need 90 cases. More cases are needed if the dependent variable is skewed. For stepwise regression, there should be a ratio of 40 cases for every IV.

134. WHAT IS AN EFFECT SIZE?

Researchers always want to know whether the difference between your groups is 'statistically significant' or have occurred by chance. For example with large samples, even very small differences between groups can become statistically significant. To assess the importance of finding you can calculate the 'effect size' (also known as 'strength of association'). This is a set of statistics that indicates the relative magnitude of the differences between means, or the amount of the total variance in the dependent variable that is predictable from knowledge of the levels of the IV.

135. WHAT IS THE DIFFERENCE BETWEEN DESCRIPTIVE STATISTICS AND INFERENTIAL STATISTICS?

As the name suggests, descriptive statistics is one which describes the population. On the other end, inferential statistics is used to make the generalization about the population based on the samples. So, there is a big difference between descriptive and inferential statistics (Table 7.2).

Table 7.2. Descriptive vs. Inferential Statistics

Basis for Comparison	**Descriptive Statistics**	**Inferential Statistics**
Meaning	Descriptive statistics is that branch of statistics which is concerned with describing the population under study.	Inferential statistics is a type of statistics that focuses on drawing conclusions about the population, on the basis of sample analysis and observation.
What it does?	Organize and present data in a meaningful way.	Compares and predicts data.

Form of final result	charts and tables	Probability
Usage	To describe a situation.	To explain the chances of occurrence of an event.
Function	It explains the data, which is already known, to summarize sample.	It attempts to reach the conclusion to learn about the population that extends beyond the data available.

136. WHAT IS P VALUE IN STATISTICS?

In technical terms, a p value is the probability of obtaining an effect at least as extreme as the one in your sample data, assuming the truth of the null hypothesis. For example, suppose that a vaccine study produced a P value of 0.04. This P value indicates that if the vaccine had no effect, you'd obtain the observed difference or more in 4% of studies due to random sampling error. The most common mistake is to interpret a P value as the probability of making a mistake by rejecting a true null hypothesis.

Generally speaking, the "Sig" or "Sig (2-Tailed) is your p-value. The p-value has a slightly different interpretation depending on which test you're running. The p-value is the evidence *against* a null-hypothesis. The smaller the p-value, the stronger the evidence you should reject the null-hypothesis. If you have a small p-value in this area then the test has a significant result. You can reject the null-hypothesis that the mean is not equal to a specified mean.

137. WHAT IS THE DIFFERENCE BETWEEN PERCENTAGE AND PERCENTILE?

A percentage is a mathematical number that is written out of a total of 100. Percentages give information about proportions and ratios. It is often easier to use and understand differences when we use percentages rather than fractions with different denominators.

A percentile is a percentage of values found below a specific value. For example, say the 75^{th} percentile on a test is 160. That means that if you scored 160 then you scored better than 75% of the people that took that same test. A percentage can't change value, 75% is always going to be 75/100. In

comparison, a percentile can change. Percentiles are used in standardized tests to establish a ranking system of achievement. The most important of these are the 25th, 50th and 75th percentile.

138. WHAT CAN I DO IF I GOT NEGATIVE CRONBACH ALPHA VALUE?

It simply means the items of your instrument (Questionnaire) are not able to grasps the essence of the construct your trying to evaluate. A simple role of thumb is to start with two items and adding one by one. As increase in item start deceasing the Alpha value. You have to decide that what Alpha value is suitable to start next level of analysis.

139. WHAT IS THE ACCEPTABLE RANGE OF SKEWNESS AND KURTOSIS FOR NORMAL DISTRIBUTION OF DATA?

Researchers choose for the skewness and kurtosis of their data were important for several reasons:

- The indicator values researchers choose give them a range that they can use to evaluate whether any of the individual items on my survey questionnaire are outside of "normal" range and if there is a problem that I need to address.
- The values they use must be justified by the literature on statistical analyzes methods and recommended by experts in the field.
- The indicators values provide justification for my decisions in the study for the statistical methods they choose for analyzes, i.e., parametric or non-parametric procedures.
- The indicators they choose support the conclusions drawn from my analyzes Researchers use indices for acceptable limits of ±2 (Trochim and Donnelly, 2006; Field, 2000 and 2009; Gravetter and Wallnau, 2014).

140. WHAT IS A RESPONSE RATE?

Even when a response rate is reported it may have been defined in a number of ways, usually according to the choice of the denominator. For example, response rate has been defined traditionally as the total number of participants

who were interviewed divided by the total number who were eligible; it has also been defined as the total number of completed interviews divided by the total number of participants with whom contact was made (or the number of all possible interviews). These may be substantially different and the reason for these differences is often related to the methods used for data collection. A detailed description and explanation of the sampling strategy that resulted in this response rate may provide a more critical assessment of the validity of the study findings than the response rate alone.

141. WHAT IS AN ACCEPTABLE RESPONSE RATE OF QUESTIONNAIRES IN SOCIAL STUDIES?

According to Baruch and Holtom (2008), the average level of response rate is 52.7% and with a standard deviation of 20.4 when analyzing 1607 studies from year 2000 to 2005 with 4000,000 respondents. Acceptable response rates vary by how the survey is administered:

- **Mail:** 50% adequate, 60% good, 70% very good.
- **Phone:** 80% good.
- **Email:** 40% average, 50% good, 60% very good.
- **Online:** 30% average.
- **Classroom Paper:** > 50% = good.
- **Face-to-Face:** 80–85% good.

142. WHAT IS THE DIFFERENCE BETWEEN PATH ANALYSIS AND SEM?

Path analysis is used to describe the directed dependencies among a set of variables. This includes models equivalent to any form of multiple regression analysis, factor analysis, canonical correlation analysis, discriminant analysis, as well as more general families of models in the multivariate analysis of variance (ANOVA) and covariance analyzes (MANOVA, ANOVA, ANCOVA). Path analysis contains only observed variables, and has a more restrictive set of assumptions than SEM. The main difference between the two types of models is that path analysis assumes that all variables are measured without error. SEM uses latent variables to account for measurement error.

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INDEX

How to Write a Research Paper: A Handbook for International Students

In the last two decades, we have seen growing emphasis on research at the postgraduate level. Through years of teaching research at the master and PhD level, we found students have trouble writing an academic paper. The books published on research methods do not put students inside the research processes as research reporters. In fact, they help classroom teachers to become better consumers of research studies (Brown, 1988). Students read different books on research methods that provide them information at the theoretical level. Yet, most of the students need to write for different purposes. What it comes at the practical phase, writing turns to be a demanding task for students. This book aims to provide to learn a sense of research by involving them in the practical test. To this end, the book was designed in two parts. Part one provides key concepts in writing an academic paper, to that general end, part one has been organized at six specific objectives.

1. To familiarize students with different science citation indexes (SCIs), journal impacts, citation databases scholar metrics, and predatory publishers;
2. To illustrate a feel of what writing an academic paper is like by providing information about journals submitting a paper, types of journals, and typical workflow of manuscript from submission to publication;
3. To provide the most notable changes in APA manual seventh edition;
4. To offer how to write a research report by providing details of how to write title, abstract, introduction, method, result, discussion, and references;
5. To give samples of different qualitative data analysis by providing a various classification of parametric and non-parametric statistics; and
6. To show the process of data analysis in qualitative research by familiarizing students with common qualitative research approaches, designs, sampling techniques, data collection, and types of data analysis.

The second part provides the main research methodology research questions. We wrote this section in question and answer (Q and A) format. This section aims to provide our intended readership, including postgraduate students, and researchers with a source read which they can acquire immediate experience. The key feature of Q and A items is that they have been posted by visit ResearchGate members, who are established university professors, postgraduate students, or PhD candidates studying one of the majors in applied linguistics of different universities all over the world. Notably, the ResearchGate is a social networking site for researchers and scholars, which provides intellectual areas for scientific interaction. Thus, Q and A items provided in Part 2 seem to shed light on our readership with various topics posed by the members. This section will strengthen the critical thinking skill of postgraduate students about how to answer the question. We hope that reading this book helps our intended readership to maximize their academic potential. We also hope all readers find this book a practical and easy-to-use guide for writing an academic paper.

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