Research Methods in ELT

by Ribahan Ribahan

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Research Methods In English Language Teaching

This book is primarily intended for use in tertiary English as a Foreign language class to equip them with the basic concepts and applications of research in the ELT. Books written for ELT research are quite scanty and the presence of this book is highly likely to help the undergraduates to overcome challenges when planning and doing their research. This book is also special as it is supplemented with tools and software for doing research which can be helpful in reducing the amount of time spent for research and to help avoid mistakes in writing research proposals and reports. This book is crucially needed by the students due to the matter of fact that they are obliged to write papers as part of the final test in every semester or surely write a thesis during their final year of study. This book seems to be such a practical guideline for them to start writing as it covers the research methodology explained in detail with examples and other pivotal information about research in English Language Teaching. Furthermore, information about referencing systems or management is also provided as one of the most important knowledge and skill that help researchers in managing or organizing their references when accessing references' Metadata or doing a citation within during the writing process.

Sanabil
Puri Bunga Amanah
Jl. Kerajinan 1 Blok C/13 Mataram
Telp. 0370- 7505946
Mobile: 081-805311362
Email: sanabilpublishing@gmail.com
www.sanabilpublishing.com

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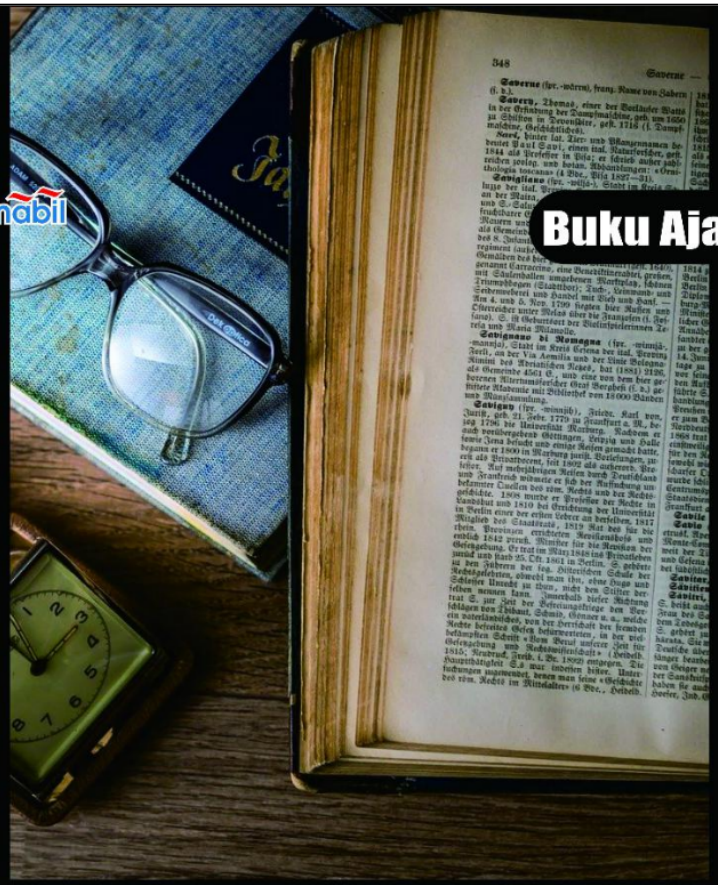
Kasyfur Rahman, M.Pd., Soni Ariawan, M.Ed.
dan Dr. Ribahan, M.Pd.

Research Methods In English Language Teaching



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Buku Ajar

Research Methods In English Language Teaching

Kasyfur Rahman, M.Pd.
Soni Ariawan, M.Ed.
Dr. Ribahan, M.Pd.

RESEARCH METHODS
IN ENGLISH LANGUAGE TEACHING

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Penulis : Kasyfur Rahman, M.Pd.
Soni Ariawan, M.Ed.
Dr. Ribahan, M.Pd.
Editor : Dr. Syarifudin, M.Pd.
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Sanabil
Jl. Kerajinan 1 Blok C/13 Mataram
Telp. 0370- 7505946, Mobile: 081-805311362
Email: sanabilpublishing@gmail.com
www.sanabil.web.id

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DEAN PREFACE

Alhamdulillah, all praises belong only to Allah SWT. Hopefully *salawat* and *salam* will always be delivered to the great Prophet Muhammad SAW, along with His family, friends and followers until the day of the resurrection. Thanks to the grace and guidance of Allah SWT, the textbook and reference writing program has been completed.

The obligation of lecturers to write and produce books, both textbooks and reference books, has actually been regulated in Law Number 12 of 2012 concerning tertiary institutions and Law Number 14 of 2005 concerning Teachers and Lecturers and some other regulations. Article 12 of Law No.12 of 2012 clearly states that lecturers individually or in groups are required to write textbooks or textbooks published by tertiary institutions as a learning resource.

The textbook and reference book writing competition (KOBAR) 2020 held by Faculty of Tarbiyah and Teacher Training (FTK) is an effort to contribute to the implementation of the law above, which quantitatively, the research charts and publications of PTKI lecturers still have to be improved. Another goal is to improve the quality of learning by creating a conducive academic atmosphere and an effective, efficient learning process with easy access to learning resources for lecturers and students. This publication is also expected to support the advancement of lecturers' careers in the context of advancement of lecturer functional positions, which in turn will have an impact on the increase of the university and study program accreditation status.

Gradually, the Faculty continues to strive to increase the quantity and quality of the published book. There were 10 books in 2019 and increased quite significantly in 2021 into 75 reference books. The efforts of the faculty do not stop at the publication level, but continue with the registration of Intellectual Property Rights (HKI) of the books at the Directorate General of Intellectual Property (DJKI) of the Ministry of Law and Human Rights of the Republic of Indonesia, would result 75 HKI for lecturers in 2021.

The 2021 textbook and reference competition is oriented towards the interconnection-integration between religion and science, with the spirit of UIN Mataram *Horizon Ilmu* with inter-multi-transdisciplinary science that

discusses methods in conventional Islamic studies with deductive-normative-theological characteristics with contemporary humanities studies methods such as sociology, anthropology , psychology, economics, hermeneutics, phenomenology and also the natural sciences which have an inductive-rational character. Among the 100 books, there were 10 thematic titles that answer the epistemological problems of Islamic education, especially those related to the mission of the Indonesian Ministry of Religion such as Islamic moderation (Islam *washathiyah*), inclusive education, anti-corruption education, character education, multicultural education, ethno-pedagogic, and online learning, education & gender issues, various Islamic boarding schools (coastal, entrepreneurial), and the most current themes, namely independent learning and independent campuses (Kampus Merdeka).

Representing the Faculty, I am grateful for the policies and support of the Rector of UIN Mataram and his staff, to 75 writers who contributed in the 2021 book competition, and the unforgettable editors from lecturers in the same field as well as publishers without a touch of *zauq*, the books will not be as attractive as these. There is no ivory that is not cracked; indeed there is still a shortage, both in substance and in technical writing. Through this "space", we expect critical suggestions from the readers. Hopefully this agenda will become an *amal Jariyah* and bring blessings to the academic community of UIN Mataram and the ummah in general.

Mataram, 25 Oktober 2021
Dekan

Dr. Jumarim, M.H.I
NIP. 197612312005011006

AUTHOR'S PREFACE

Alhamdulillah, we would like to express our greatest and deepest gratitude to Almighty God, Allah SWT, for his blessing and mercy during the collaborative work to finish this book. Secondly, we are also thankful to the Rector of State Islamic University of Mataram, Vice Rectors, Dean of Faculty of Education and Teacher Training as well as vice deans who have created such supportive academic atmosphere by initiating book writing competition that successfully reminds us, lecturer, to not only teach but also write a paper or books as one of the compulsorily academic works that every lecturer has to do. This book is primarily intended for use in tertiary English as a Foreign language class to equip them with the basic concepts and applications of research in the ELT. Books written for ELT research are quite scanty and the presence of this book is highly likely to help the undergraduates to overcome challenges when planning and doing their research. This book is also special as it is supplemented with tools and software for doing research which can be helpful in reducing the amount of time spent for research and to help avoid mistakes in writing research proposals and reports. This book is crucially needed by the students due to the matter of fact that they are obliged to write papers as part of the final test in every semester or surely write a thesis during their final year of study. This book seems to be such a practical guideline for them to start writing as it covers the research methodology explained in detail with examples and other pivotal information about research in English Language Teaching. Furthermore, information about referencing systems or management is also provided as one of the most important knowledge and skill that help researchers in managing or organizing their references when accessing references' Metadata or doing a citation within during the writing process. Finally, due to the limited of time, the book might contain some weaknesses or errors, so we would like to welcome some comments or constructive feedback from the readers as we might have another opportunity of publication to include the revisions according to the readers' feedback. Finally, we hope that this work is part of our small contribution to the English language education study program Faculty of Education and Teacher Training, State Islamic University of Mataram.

September 2021

Authors

KEMENTERIAN AGAMA RI
UNIVERSITAS ISLAM NEGERI MATARAM
FAKULTAS TARBIYAH DAN KEGURUAN
PROGRAM TADRIS BAHASA INGRIS
Jln. GajahMada No.100 Jempong Mataram. Telp. (0370) 620783/620784 Fax. (0370)620784,.
http://www.uinmataram.ac.id/ email: tbiftk@uinmataram.ac.id

RENCANA PEMBELAJARAN SEMESTER (RPS)
(Berdasarkan Permen Ristekdikti Nomor 44 Tahun 2015 Pasal 12)

Matakuliah:Research Methods in ELT	**Semester : VI**	**KodeMK :TBI3636**	**Bobot (SKS):3 SKS**
Program Studi : S1 Tadris Bahasa Inggris		**Dosen Pengampu : Yek Amin Azis, M. Pd**	
Capaian Pembelajaran Lulusan (CPL)	1. Possess the knowledge of scientific research in the areas of ELT, Linguistics, and Literature **(PK44).** 2. Be able to develop the knowledge on and to carry out scientific research in the areas of ELT, Linguistics, and Literature **(KK44).**		
Capaian Pembelajaran MataKuliah (CPMK)	: 1. Define key concepts and terminology in ELT research 2. Review related literature for research purposes 3. Explain different types of research design		

	4. Identify and design some techniques of data collection and research instruments 5. Describe data analysis procedures 6. Identify the nature of findings and discussion 7. Analyze validity and reliability of research and research instruments 8. Develop an outline of a research proposal 9. Develop a research proposal based on the topic of interest
Deskripsi Matakuliah	This course is designed to develop students' research skills and to help them compose a well-crafted research proposal. During classroom sessions, students will engage in discussions, mini-projects, and other activities that build and sharpen their research skills, develop their understanding of the underlying principles of ELT research, and use these principles as grounds for developing a research proposal.

(1) Minggu Ke-	(2) Kemampuan Akhir Tiap Tahap Pembelajaran	(3) Bahan Kajian (Materi)	(4) Metode Pembelajaran	(5) Alokasi Waktu	(6) Pengalaman Belajar Siswa (Deskripsi Tugas)	(7) Kriteria Penilaian (Indikator)	(8) Daftar Referensi

	(Kompetensi Dasar)						
1	Define key concepts and terminology in ELT research	Nature of Inquiry	Discussion	2x 90 Menit	• Students discuss in groups and match research key terms with their definition. • Students discuss and provide feedbacks to research illustrations displayed by the lecturer. • Students	• Define what research is • Describe characteristics of good research • Define research topic, variable, research question, and hypothesis • Describe the	Gass, Susan M. & A. MacKey. 2005. Second Language Research: Methodology and Design. Mahwah: Lawrence Erlbaum

					brainstrom research topic areas that might interest them and let their peers comment on them. • Students in pairs attempt to match terms with their examples	structure of research report • Distinguish quantitative from qualitative research • Describe Mixed-method research • Distinguish longitudinal from cross-sectional research	

2	Review related literature for research purposes	Literature Review	Discussion Cooperative Learning	2x90 Menit	• Before the lesson begins the students are required to search for literature review of a research topic and critically reead it. • The students in griups try to identify the structure of the	• State the purposes of a literature review • Describe major steps in a literature review • Write an outline of a literature review	Tuckman, B.W. 2012. Conducting Educational Research. London: Rowman and Littlefield

					literature review and the lexicogra mmatical features of it. • The students individuall y write outlines of literature review of a research topic sthey determine in the previous lesson.		

3	Describe different types and procedures of Quantitative research design	Quantitative Research	Project-based Learning Cooperative Learning	3x90 Menit	• Students discuss what experimental research and what is not • Students work in a group to examine problems posed by the lecturer and attempt to overcome it through an experimen	• Define experimental research • Identify types of experimental research • Describe the process of conducting experimental research • Describe the data collection	Gay, L.R., G.E Mills, & P. Airasian. 2006. Educational Research: Competencies for Analysis and Applications. London: Pearson

					tal research plan • Students discuss the procedure of data collection and analysis for experimental research design • Students discuss what correlational research and what	procedure in experimental research • Describe the data analysis procedure in experimental research • Define correlational research • Identify types of correlational research	

					• is not • Students works in group to examine problems posed by the lecturer and attempt to overcome it through correlational research plan • Students discuss the procedure of data collection	• Describe the process of conducting correlational research • Describe the data collection procedure in correlational research • Describe the data analysis procedur	

					and analysis for correlational research design • Students discuss what survey research and what is not • Students work in groups to examine problems posed by the lecturer and	e in correlational research • Define survei research • Identify types of survey research • Describe the process of conducting survey research • Describe the data collectio	

					attempt to overcome it through survei research plan • Students discuss the procedure of data collection and analysis for survey research design	n procedur e in survei research • Describe the data analysis procedur e in survey research • Plan a survey	
4		Midterm Exam					
5	Describe different	Qualitative Research	Discussion Cooperative	2x90 Menit	• Students discuss	• Define case	Gay, L.R., G.E Mills, &

	types and procedures of qualitative research design		Learning		what case study research and what is not • Students work in groups to examine problems posed by the lecturer and attempt to overcome it through case study research plan • Students discuss	study research • Describe the process of conducting case study research • Describe the data collection procedure in case study research • Describe the data analysis procedur	P. Airasian. 2006. Educational Research: Competencies for Analysis and Applications. London: Pearson

					the procedure of data collection and analysis for case study research design	e in case study research	
6	Describe different types and procedures of research design	Action Research	Discussion Cooperative Learning	90 Menit	• Students discuss what case study research and what is not • Students work in groups to examine	• Define Classroom Action research • Describe the process of conducting	Tuckman, B.W. 2012. Conducting Educational Research. London: Rowman and Littlefield

					problems posed by the lecturer and attempt to overcome it through case study research plan • Students discuss the procedure of data collection and analysis for case studyresea rch design	classroo m action research • Describe the data collectio n procedur e in classroo m action research • Describe the data analysis procedur e in classroo m	

						action research	
7	Describe R&D research method	Research and Development	Discussion Cooperative Learning	90 Menit	• Students discuss a sample of R&D research report	• List stages needed in doing R&D Research • Describe techniques of data collection for R&D Research	Gay, L.R., G.E Mills, & P. Airasian. 2006. Educational Research: Competencies for Analysis and Applications. London: Pearson
8	Identify the main features of reference	Useful Tools for Research	Discussion Cooperative Learning	90 Menit	• Students are trained to master the use of	• Describe the function of each	Gass, Susan M. & A. MacKey. 2005. Second Language

	manager application, paraphrase engine and grammar checking software				• reference manager, paraphraser and SPSS • Students practice using the software or apps to solve given problems	• applicati on for research • Describe the steps in using each applicati on • Demons trate the use of these applicati ons in groups	Research: Methodology and Design. Mahwah: Lawrence Erlbaum
9	Write different parts of a thesis appropriately	Writing the Research Report	Discussion Cooperative Learning	90 Menit	• Students gather excerpts of research reports in	• Describe each part of a thesis • Write different	Gay, L.R., G.E Mills, & P. Airasian. 2006. Educational Research: Competencies

	• Precisely write required information for different parts of thesis				the form of a thesis or research articles. • Students list the generic structure and descriptions of the research report	parts of a thesis	for Analysis and Applications. London: Pearson
16		Final Exam					

DAFTAR REFERENSI

1. Gass, Susan M. & A. MacKey. 2005. Second Language Research: Methodology and Design. Mahwah: Lawrence Erlbaum
2. Gay, L.R., G.E Mills, & P. Airasian. 2006. Educational Research: Competencies for Analysis and Applications. London: Pearson
3. Tuckman, B.W. 2012. Conducting Educational Research. London: Rowman and Littlefield
4. Marczyk, G.R. et al. 2005. Essential Research Design and Methodology. New Jersey: John Wiley and Sons

PENILAIAN

1. Aspek Penilaian
    a) Sikap
        1. Kerjasama dalam tim atau kelompok
        2. Komunikasi dengan dosen dan teman sejawat
        3. Ketepatan waktu ketika mengumpulkan tugas
    b) Pengetahuan
        1. Menyampaikan gagasan dengan jelas dan dapat dimengerti
        2. Menjawab pertanyaan baik secara lisan maupun tulisan
        3. Memberikan alternative pemecahan masalah yang berkaitan dengan topik
    c) Keterampilan
        1. Membuat slide presentasi
        2. Melakukan tugas sesuai instruksi

3. Bobot Penilaian
   a) Bobot Nilai Harian (NH) = 40 %
   b) Bobot Nilai Ujian Tengah Semester (UTS) = 20 %
   c) Bobot Nilai UjianAkhir Semester (UAS) = 40 %

Nilai Akhir (NA) = $\frac{4NH+2UTS+4UAS}{10}$

VERIFIKASI RPS

Mengetahui Wakil Dekan I	Ketua Jurusan	Mataram, 02 Pebruari 2021 Dosen Pengampu
Dr. Abdul Quddus, M.A. NIP. 19781111200501009	**Dr. Syarifudin, M.Pd.** NIP. 196812311999031009	**Kasyfur Rahman, M.Pd.** NIP. 198612282018011001

UNIT 1: NATURE OF INQUIRY

A. INTRODUCTION

In this world, there are many things or phenomena that raise your curiosity. The nature or attributes of living and non-living objects, including events, make you wonder continually, frequently or fast. You position yourself in a scenario where you appear to be dealing with various issues while marvelling at them. Questions following inquiries on various parts of the things that pique your interest compel you to move, act, or do something in order to get answers to your questions or uncover facts about your deductions or guesses on such things. Behaving like an investigator, asking and seeking answers to certain questions regarding the item that perplexes you, demonstrates the actual character of inquiry study. This curiosity-driven action to pursue the answer is the basis of research. By learning this unit, you will be introduced to the basic concepts underpinning the research process involving the ubiquitous research paradigms that have been evolving that shape the current state of the art of research.

B. LEARNING OBJECTIVES

2

By the end of this unit, you should be able to:

- Share research experiences and knowledge
- Explain the relevance of research in daily life
- Describe research features, procedures, and ethics
- Distinguish between quantitative and qualitative research
- Give samples of your studies in areas of interest

C. WHAT IS RESEARCH?

Broadly speaking, sources of knowledge entail three foundations including experience, reasoning and research. Unlike experience and reasoning, knowledge generation through research is more systematic and scientific. Basically, research is composed by the word *re+search* which literally means to search again and again. This can be understood as an inquiry carefully and scientifically undertaken based on previously established knowledge or theory or previously conducted research due to the emerging gaps or unsatisfactory research results. Terminologically,

research is a systematic inquiry through data collection and analysis. As illustrated below, any research begins from a problem or phenomenon which later raises questions and to answer such questions data need to be garnered and then be analyzed to arrive at a conclusion that serves to answer the research questions. Take for example, in the current era, the integration of technology has transformed our education and been inevitable, but how it impacts our education remains underexplored. Some believe that it has a positive impact on students' learning, yet some hold the opposite view. Based on this phenomenon and contrasting views, we may carry out a research study to prove the aforementioned impact either through qualitative or quantitative research methods. Here is a schema of how research is generated.

Problem/Phenomenon → Questions → Data Collection & Analysis → Conclusions/Answers

D. RESEARCH PARADIGMS

One of the main considerations in research is to take into account the philosophical worldview underpinning it entailing post positivism, constructivism, transformative and pragmatism. Prior to the emergence of these research paradigms, the academia is surrounded by two major research paradigms which seem outdated, namely positivism and subjectivism (Interpretism). The conventional type of research has been characterized by postpositivist assumptions, and these assumptions hold true more for quantitative research than for qualitative research. This viewpoint is also known as the scientific method or doing scientific study. Positivist/postpositivist research, empirical science, and post positivism are other names for it. Postpositivists believe in determinism, which holds those causes (probably) influence effects or outcomes. As a result, the challenges examined by postpositivists reflect the necessity to identify and evaluate the reasons that impact outcomes, such as those discovered in experiments.

Constructivism or social constructivism (sometimes coupled with interpretivism), on the other hand, is commonly regarded as a method for doing qualitative research. Individuals, according to social constructivists, seek comprehension of the world in which they live and work. Individuals form subjective meanings from their experiences, meanings that are oriented

toward certain objects or things. These meanings are diverse and many, prompting the researcher to explore for the complexities of perspectives rather than limiting meanings into a few categories or concepts.

A transformational worldview argues that in order to challenge social injustice at any level, scholarly inquiry must be linked with politics and a political reform agenda. As a result, the study includes a reform action agenda that has the potential to transform the lives of the participants, the institutions in which they work or live, and the researcher's life. Furthermore, particular themes that relate to major societal issues of the day, such as empowerment, inequality, oppression, dominance, repression, and alienation, must be addressed.

Rather than prior circumstances, pragmatism as a worldview emerges through acts, situations, and outcomes (as in postpositivism). There is a worry about applications—what works—and problem-solving solutions. Instead of focusing on techniques, researchers highlight the research problem and employ all possible ways to solve it.

Postpositivism	**Constructivism**
• Determination • Reductionism • Empirical observation and measurement • Theory verification	• Understanding • Multiple participant meanings • Social and historical construction • Theory generation
Transformative	**Pragmatism**
• Political • Power and justice oriented • Collaborative • Change-oriented	• Consequences of actions • Problem-centered • Pluralistic • Real-world practice oriented

Figure 1: Research Paradigms[1]

One of the approaches to help researcher think holistically abut their research methodologies and to make methodological decisions as their going from outer to the deeper layers of the onion. Research onion was

[1] J.W. Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (Pearson, 2015), https://books.google.co.id/books?id=5pYEngEACAAJ.

first popularized by Saunders et al[2] which offers layers of research methodologies from philosophical decisions up to the technical and practical decisions. The research onion advises that an acceptable research be chosen once the right technique has been chosen. The deductive technique begins with the formulation of a specific hypothesis based on the literature review that has been noticed by the researcher, and then attempts to test this hypothesis and see if it holds in certain circumstances. The inductive technique, on the other hand, begins with observations that the researcher utilizes to develop a new hypothesis. Following that, the researcher is supposed to develop the study's approach. According to the research onion, techniques might include action research, experimental research, interviews, surveys, case study research, or a comprehensive literature review. The approach is determined depending on the data needed for the research and the study's aim. The research onion suggests mono-method, mixed method and multi-method as possible choices for conducting research. The mono-method comprises only one method for the study. The mixed method is based on the use of two or more methods of research and commonly refers to the use of qualitative and quantitative methodology. Finally, the multi-method uses a wider selection of methods. The term "time horizon" refers to the research's time period. Observations may be classified into two categories based on their temporal horizons: cross-sectional and longitudinal. When all observations are for a single moment in time, such as in most surveys, cross-sectional data is utilized. Longitudinal data, on the other hand, refers to observations for a certain variable that span multiple years, quarters, months, or days. This is the final layer of the research onion and consists of the techniques and procedures used. It is used to clearly explain the ways and purposes of the research conducted. At this stage, the student is expected to choose between the primary and secondary data and between qualitative and quantitative data collected from different sources. Data is considered the central piece in the research onion framework.

[2] Mark Saunders, PHILIP Lewis, and ADRIAN Thornhill, "Research Methods," *Business Students 4th edition Pearson Education Limited, England* (2007).

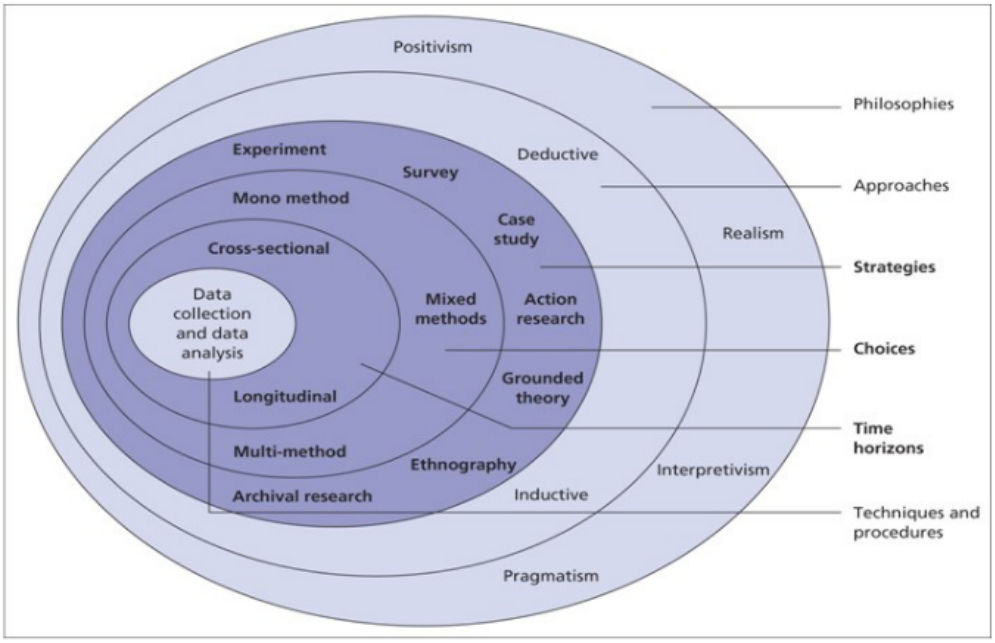

Figure 2 The Research Onion[3]

The collection of principles governing the worldview or attitude from which the study is done is referred to as philosophy. Ontology and epistemology are commonly used to study it. In this context, ontology relates to the authenticity of the information and how one perceives its existence, whereas epistemology refers to the legitimate information needed for the investigation and how to get it. Philosophical perspectives utilized in academic research are frequently split into positivism and interpretivism, with positivism assuming that knowledge is independent of the subject under study and interpretivism claiming that each observer has their vision and interpretation of reality. As a result, positivist investigations are frequently more scientific and produce testing phenomena, whereas interpretive research is frequently qualitative in terms of characteristics.

E. SELECTING RESEARCH TOPIC

For some, selecting a research topic can be painstaking. However, with the advance of technology and wide access to information, sources of research topics are multitude. These include textbooks, scientific journals, dissertations, theories, or professional practices and experiences.

[3] Ibid.

Nonetheless, a good research topic should meet several criteria invlolving

(A) Interest

Doing and reporting research can be a daunting task, hence constant passion driven by curiosity should be part of the process and this can only come from an interest in the topic being investigated.

B) Significance

Any research should be conducted on the basis of the significant contribution it makes to the field. A significant topic can be reflected from one or more of the following indicators: (a) further the development of a new theory, (b) examine an existing theory, (c) discover new facts or principles, (d) question existing truths or assumptions, (e) suggest relationships between phenomena, (f) provide new insights into phenomena, (g) suggest new interpretations of known facts, (h) change other people's perceptions of phenomena, and i) extend a research methodology or statistical procedure.[4]

(C) Data Availability

One of the most important factors to consider is your capacity to acquire the data you need for your research. Because data access is so crucial, you might want to start by identifying your study participants before deciding on a topic.

(D) Expertise and Skills,

Taking into account your current research and expertise when planning a research project will be useful during the process. These factors offer some benefits including for starters, you'll save time since you will be working with a topic you are already familiar with. Second, you can speak intelligently about your subject. Third, if you choose a topic about which you are knowledgeable, you are more likely to receive support from your dissertation chair and committee.[5]

(E) Feasibility

Feasibility means the extent to which the research is both manageable and accomplishable. This can be reached by narrowing down the research topic and setting the right amount of time to do the research.

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[4] F.C. Lunenburg and B.J. Irby, *Writing a Successful Thesis Or Dissertation: Tips and Strategies for Students in the Social and Behavioral Sciences* (SAGE Publications, 2008), https://books.google.co.id/books?id=I1ZIlLRDLaYC.

[5] Ibid.

(F) Funding

The scope of your research will highly depend on the available funding. The broader the scope, take for example at the national level, the cost will likely be higher. Thus, you are advised to look for research grants.

F. QUALITATIVE RESEARCH

Qualitative research methods are research methods based on the philosophy of post-positivism. This method is used to examine the condition of a natural object (as opposed to an experiment) in which the researcher is the key instrument. The sampling of data sources was carried out purposively and snowball, the collection technique used triangulation (combined), the data analysis was inductive or qualitative and the results of qualitative research emphasized the meaning rather than generalization.

According to Basrowi, there are several types of qualitative research, including:

1. Field research: Case Studies. This research is directed to understand groups, individuals, or an institution, certain conditions in depth. The data obtained came from field notes, structured and in-depth interviews.
2. Ethnography. This research is used to understand the culture or its aspects in everyday life. The data were obtained by using field notes, participating directly and observing, conducting interviews, and recording data sources.
3. Symbolic interactions. This research is aimed at understanding the meaning of human behaviour in everyday life, both in terms of motives, values, and insights. This study collected data from field notes, active participation, observation of data sources, which were then transposed as symbols of something.
4. Naturalistic Inquiry. This study aims to understand phenomena, behaviour, and interactions in a natural setting. The data were obtained with field notes, participation, in-depth interviews, and observations.
5. Grounded theory. This research intends to develop, compile, and build theories. The data used in this study were obtained from field

notes, observations, interviews, documentation, and direct inductive participation.

6. Ethno-methodology. This research is used to understand human symptoms by paying attention to the essence of its meaning in a group or social environment. The data used were obtained from dialogue and direct participation through interaction.
7. Action Research. This study contains a description, conception, and critical decision making based on observation, monitoring, and evaluation of action.[6]

G. QUANTITATIVE RESEARCH

Quantitative research deals with numerical data, incorporates statistical analysis and is intended to test theories. Instead, qualitative research is intended to give interpretation on data that can be used as grounds for generating theories. In most cases, however, many research studies are characterized by the incorporation of both approaches and eventually, the best way to understand both approaches might be looking at a continuum. Many research studies might be placed between the two points or edges of the continuum.

Quantitative research methods are research methods based on the philosophy of positivism. This method is used in examining the sample and research population, the sampling technique is generally carried out by random or random sampling. Meanwhile, data collection was done by utilizing the research instruments used. The data analysis used is quantitative or can be measured to test the previously established hypothesis. In quantitative research, you will likely to use one of the following types:

1. Descriptive Research
2. Correlational Research
3. Causal-Comparative Research (Ex Post Facto)
4. Experimental Research (pre-experimental, quasi experimental, true experimental)

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[6] Suwandi Basrowi, "Memahami Penelitian Kualitatif," *Jakarta: Rineka Cipta* 12, no. 1 (2008): 128–215.

More comparisons between qualitative and quanti6taive research can be examined below.

1. **Research Design**
    a. Qualitative is general, flexible, and dynamic. Qualitative research itself can develop during the research process.
    b. Quantitative has a specific, detailed, and static nature. The flow of the quantitative research itself was planned from the start and cannot be changed.
2. **Data Analysis**
    a. Qualitative can be analyzed during the research process.
    b. Quantitative can be analyzed at a final stage before reporting.
3. **Terms of Research Subjects**
    a. Qualitative research subjects are usually referred to as sources.
    b. Quantitative has research subjects are commonly referred to as respondents.
4. **How to View the Facts**
    a. a. Qualitative: Qualitative research views "Facts / Truth" depending on how the researcher interprets the data. This is because there are complex things that just cannot be explained by numbers, such as human feelings. Quantitative research departs from data which is then explained by theories that are considered relevant, to produce a theory that strengthens existing theories.
    b. b. Quantitative: Quantitative research sees "Facts / Truths" as being the object of research out there. Researchers must be neutral and impartial. Whatever is found on the ground, it is a fact. Quantitative research departs from theory to data.
5. **Data Collection**
    a. Qualitative: Qualitative research focuses more on something that cannot be measured by black and white truth, so that in qualitative research the researcher digs deep into the data on certain things. Thus, the quality of qualitative research is not really determined by the number of sources involved, but how deep the researcher digs up specific information from the selected sources.

b. Quantitative: The data was collected using a series of research instruments in the form of tests/questionnaires. The collected data was then converted using pre-defined categories/criteria. The quality of quantitative research is determined by the number of research respondents involved.

6. **Data Representation**
    a. a. Qualitative: The results of qualitative research are in the form of the researcher's interpretation of a phenomenon so that the research report will contain more descriptions.
    b. b. Quantitative: The results of quantitative research are presented in the form of mathematical calculation results. The results of the calculation are considered as confirmed facts. The validity of quantitative research is largely determined by the validity and reliability of the instruments used.
7. **Research Implication**
    a. a. Qualitative: The results of qualitative research have limited implications for certain situations. Thus, qualitative research results cannot be generalized in different settings.
    b. b. Quantitative: The results of quantitative research are generalized facts/theories. Whenever and wherever that fact applies.
8. **Method**
    a. Qualitative: Phenomenology, ethnography, case studies, historical, grounded theory.
    b. Quantitative: Experiment, survey, correlation, regression, path analysis, ex post facto.
9. **Objective**
    a. Qualitative: Gaining in-depth understanding, developing theory, describing social reality and complexity.
    b. Quantitative: Explaining the relationship between variables, testing the theory, generalizing the social phenomena under study.
10. **Type of Data**
    a. Qualitative: Descriptive and explorative
    b. Quantitative: Numerical and statistical

H. MIXED-METHOD RESEARCH

Mixed methods research is a technique of investigation that involves gathering both quantitative and qualitative data, integrating the two types of data, and employing diverse designs that may include philosophical assumptions and theoretical frameworks. The basic premise of this type of investigation is that combining qualitative and quantitative techniques yields a more thorough knowledge of a study topic than either strategy alone.[7]

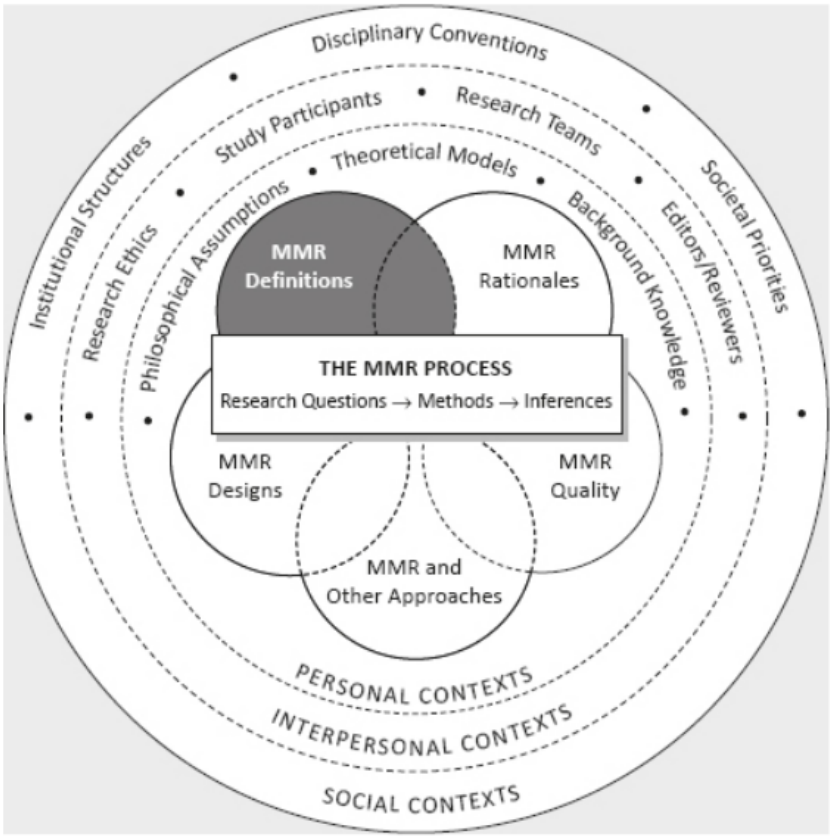

Figure 4: Mixed-Method Research[8]

Mixed methods research is a type of research in which a researcher or team of researchers combines elements of qualitative and

[7] J.W. Creswell and J.D. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (SAGE Publications, 2017), https://books.google.co.id/books?id=335ZDwAAQBAJ.

[8] Vicki L. Plano Clark and Nataliya V. Ivankova, *Mixed Methods Research: A Guide to the Field* (Thousand Oaks, California, 2021), https://methods.sagepub.com/book/mixed-methods-research-a-guide-to-the-field.

quantitative research approaches (e. g., use of qualitative and quantitative viewpoints, data collection, analysis, and inference techniques) for the broad and deep purposes of understanding and corroboration.

To address research problems, a mixed methods approach includes techniques from both qualitative and quantitative methodologies. Mixed methods social inquirers can select from a wide range of methodological alternatives at each step in the investigation process - goal, general design, techniques, sampling, data recording, analysis, and interpretation. A genuinely mixed technique employs various approaches at all stages of the study; however, the researcher may also select certain points of contact.

Mixed-method research is carried out due to the following reasons:

- All data collecting methods have limits; however, using several approaches can mitigate or cancel out some of the downsides of specific methods. Furthermore, the qualities of each method can complement one another.
- Because social phenomena are so complicated, several techniques are required to better comprehend this complexity.
- It is well suited to collaborative and applied research.
- It allows the researcher to answer confirmatory and exploratory questions simultaneously, allowing the researcher to develop and validate theory in the same study.
- It can explain seemingly conflicting findings obtained via the use of diverse approaches.

I. MULTI-METHOD RESEARCH

Multiple methods, also known as multi-method design, is the use of two or more research projects, each complete in its own right, to address research questions and/or hypotheses, a topic, or a program. In multi-method studies, like mixed methods, we may use a combination of quantitative, qualitative, or both approaches. The projects might be carried out either concurrently or sequentially. In contrast to mixed approaches, however, each study project is individually designed and carried out to address a specific sub-question. For example, the purpose

statement for multiple techniques or multi-method research may be as follows:

The goal of this sequential [QUAL-QUAN] multimethod study is to investigate children's perceptions of fear in order to design and test an instrument. The first stage will be a qualitative investigation of fear using semi-structured interviews. Themes from this qualitative data will subsequently be developed into and pilot tested into an instrument for surveying youngsters about their concerns.

There are two major rules that researchers should follow while employing multiple methods. The first design principle is to acknowledge and respect the fundamental theoretical drive or paradigm of the project, as well as to adhere to its methodological assumptions. The analytical heart of the project is formed by the fundamental theoretical motivation, which might be quantitative (deductive) or qualitative (inductive). It is decided by the research question(s) or hypothesis(es) and should guide the approach to data and sample.

The second premise is to acknowledge the secondary or additional component's role. The secondary component's function is to elicit a perspective or dimension that the first technique cannot reach, to enrich description, or to allow additional investigation or preliminary testing of an emerging idea (4). The secondary data and analysis are informed by the data obtained by the additional data. The secondary component is usually denoted by lower case letters, such as quan or qual.

J. SELECTING RESEARCH APPROACH

To select the most appropriate research method to employ, one should take into account at least three criteria including research problem, experience and audiences. A research problem is an issue or worry that must be addressed (e.g., the issue of racial discrimination). The problem stems from a gap in the literature, as well as conflict in study results in the literature, themes that have been overlooked in the literature, a need to elevate the voice of marginalized participants, and "real-life" difficulties encountered in the workplace, home, community, and so on. Personal experiences of researchers, such as an individual skilled in technical, scientific writing, statistics, and computer statistical programs and familiar with quantitative publications in the library,

would most likely lead to the quantitative design. Individuals who love writing in a literary style, conducting personal interviews, or making up-close observations, on the other hand, may prefer the qualitative method. A mixed methods researcher is someone who is well-versed in both quantitative and qualitative research. This individual also has the time and resources to gather both quantitative and qualitative data, as well as venues for large-scale mixed methods investigations. Finally, researchers write for audiences who are likely to accept their findings. These audiences might include journal editors and readers, academic committees, conference participants, or field colleagues. Students should think about the techniques that their advisers generally endorse and employ. The experiences of various audiences with quantitative, qualitative, or mixed methodologies research might influence the design choices.

K. SUMMARY

Research plays a fundamental role in extending our knowledge and impacting our professional practices. Whether qualitative or quantitative research the choice of research approach depends largely upon the research questions to answer. While these division of research is quite ubiquitous, research ahs been expanded to include mixed-method and multi-method research as the research worldview has evolved from emerge positivism and subjectivism paradigm. In terms of deciding the best research methods to employ in a research study, research onion may serve as an aid to help us scaffold our research from philosophical to technical decision.

L. EXERCISE

Discuss the answers to the following questions with your fellow group members.

1. What does research refer to etymological and terminologically?
2. What makes a good research study?
3. What are the general types of research?
4. What are the main differences between quantitative and qualitative research?
5. What are the main differences between mixed-method and multi-method research?

M. SUGGESTED READINGS

Creswell, John W, and J David Creswell. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage publications, 2017.

Creswell, J.W. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Pearson, 2015. https://books.google.co.id/books?id=5pYEngEACAAJ.

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Plano Clark, Vicki L., and Nataliya V. Ivankova. *Mixed Methods Research: A Guide to the Field*. Thousand Oaks, California, 2021. https://methods.sagepub.com/book/mixed-methods-research-a-guide-to-the-field.

Saunders, Mark, PHILIP Lewis, and ADRIAN Thornhill. "Research Methods." *Business Students 4th edition Pearson Education Limited, England* (2007).

UNIT 2: LITERATURE REVIEW

A. INTRODUCTION

In this chapter, you will be introduced to the concept of literature review by which ideas for research can be generated. Literature plays a pivotal role in shaping the approach and design of your research. By understanding the differences between literature review from annotated bibliography, and understanding of principal stages of doing literature review, you will be able to build a compelling reason for choosing your topic then carrying out your research. Even it is way better to start doing literature review on your research topic before you begin writing your proposal or thesis.

B. LEARNING OBJECTIVES

By the end of this unit, you should be able to:

- State the purposes of a literature review
- Describe major steps in a literature review
- Write an outline of a literature review

C. WHAT IS LITERATURE REVIEW?

Literature review is an important starting point for your research as it provides background and context, methodological models that provide insights into research design and current state of the art of the topic in your research. A literature review is a written summary of journal articles, books, and other materials that explains the state of knowledge on the topic of your research project in the past and present.[9] In the review of related literature, you should provide the basic rationale from which your statement of problem, research question, hypothesis and research design will emerge. Your literature review should also reflect the following aspects:

1. Historical background for your research topic
2. The current status of your research topic or state of the art
3. The support for your research purposes
4. Gap identification in the literature

[9] Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research.*

5. Awareness of the variables relevant to the topic
6. Understanding of previous research cited
7. Identification of leading scholars on the field
8. Proposal of useful theoretical constructs for your study
9. Understanding of the application of certain methodological procedures
10. Comparison between studies that will help you later analyze and interpret the data.

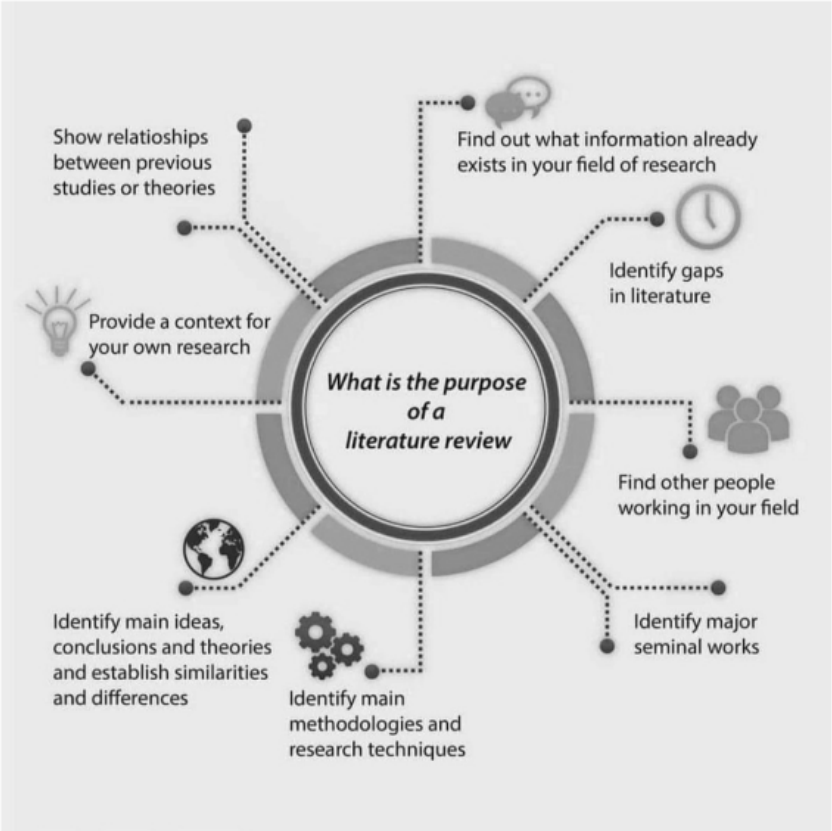

Figure 6: Purposes of Literature Review (Source: https://pubricahealthcare.medium.com/how-do-i-write-scientific-literature-review-ea28b7bba36d)

In writing literature review, you may organize it into a funnel structure which means more general information is discussed first and the most closely related information to your research is discussed last. Your literature may have several sections with headings and subsections. You can prioritize which literature you will include in

your review based on the following categories: material which is mostly related to your study should be discussed in details, some materials that should be briefly discussed, and some tangential material which may or may not be included. When writing literature review you should also avoid plagiarism and attribute the sources from which you cited. You should also be able to distinguish between literature review and annotated bibliography since the latter is usually a precursor to the former.

	Literature Review	Annotated Bibliography
Purpose	Provides an examination of a collection of scholarly works as they pertain to a specific topic of interest.	Provides a summary of the contents of each example in a collection of scholarly works.
Elements	Includes an introduction, body, conclusion, and bibliography similar to a research paper.	A selection of related research and/or scholarly works each with its own summary.
Construction	Sources are logically organized and synthesized to demonstrate the author's understanding of the material.	An alphabetized list of works with a complete citation and a brief statement of the main components.
Critical Evaluation	Contains a collective critique of a body of work related to a specific topic. Assesses the strengths, weaknesses, gaps and possible future research needs for that topic.	Any critique it contains will focus on the quality of the research and/or argument found in each scholarly work.

Figure 5: Literature Review Vs Annotated Bibliography

One of the main purposes of a literature review is to identify gaps in the literature which you aim to fill. This gaps also highlight how you understand the literature deeply and make critical evaluation about it. In research, the gap can be shown in two ways either by making mini criticism to the works of the previous researchers or by using polite gap indication represented by the statement of research scarcity or little is known about the topic being investigated. In addition to these, several types of gaps can be examined below:

Evidence Gap	The results of the research contradict examination from abstract point of view.
Knowledge Gap	Research results/findings desired do not exist.
Practical-Knowledge Gap	Deviation between professional practices and research findings or the practices have not been covered by research
Methodological Gap	The need for variation of research methods to generate new findings or avoid distortion of research findings.
Empirical Gap	Research findings need to be reevaluated or verified.
Theoretical Gap	Due to the lack of theory that is applied to the research issues, a theory should be used to generate insights.
Population Gap	The research evidence is based on inadequate research population.

D. STEPS IN DOING LITERATURE REVIEW

Make an Outline

The first step in doing literature review is to create the outline of the subtopic. This will in turn help you stay focused on the topic and avoid being overwhelmed by the references you have retrieved. However, to make the outline you should first identify the key words for your research.

Locate the Literature

Nowadays, references can be easily accessed through online sphere. However, you should be careful when selecting the references as not all available materials online are dependable. Choose references that have been reviewed externally and have been recently published.

Critically Evaluate the Literature

Once the literature has been searched and retrieved, make sure that it is both good and relevant to your research.

Organize the Literature

There are a variety of ways of organizing the literature either by using visual aids/maps or by using reference manager. Here is a sample of visual map using circular design from Creswell et al[10]

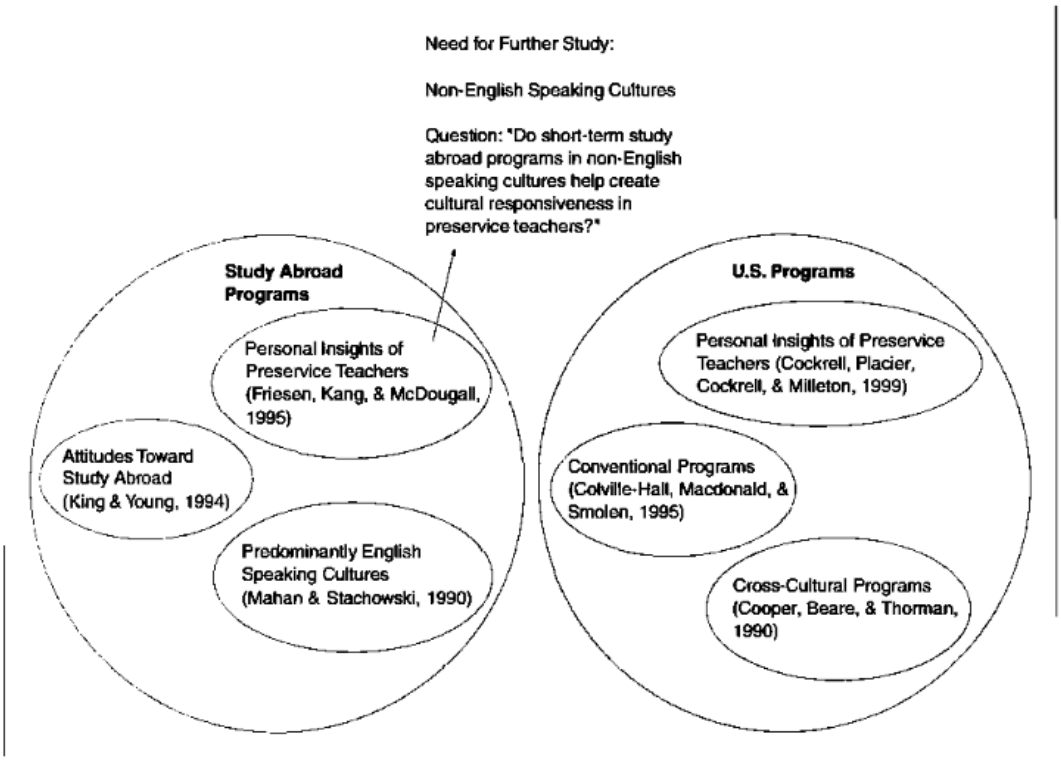

Figure 6: Visual Map for Literature Review

Write the Literature Review

Once all the stages above are completed, the final stage is to write the literature review in the form of a summary of written journal articles and the like. It is important to note, however, that when doing so, the literature review has to be written in accordance with the required styles (APA style, Turabian

[10] Ibid.

Style, MLA Style) which highly depend on institutional policies. Citations in a literature review may be in the form of parenthetical citation, footnote or endnote.

E. SUMMARY

Literature review is the summary of references used in a research study which shows your skill in organizing and evaluating pertinent literature to your research. Literature review is multipurpose, but the most important function is to identify gap the research will fill.

F. EXERCISE

Reflect upon your learning and answer the following questions.

1. What are the purposes of literature?
2. How is literature review carried out?
3. What are the main differences between Literature review and annotated bibliography?
4. What are the steps in doing a literature review?

G. SUGGESTED READINGS

Creswell, John W, and J David Creswell. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage publications, 2017.

Creswell, J.W. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Pearson, 2015. https://books.google.co.id/books?id=5pYEngEACAAJ.

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Leavy, P. *Research Design: Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches*. Research methods. Guilford Publications, 2017. https://books.google.co.id/books?id=PRyDDgAAQBAJ.

Lunenburg, F.C., and B.J. Irby. *Writing a Successful Thesis Or Dissertation: Tips and Strategies for Students in the Social and Behavioral Sciences*. SAGE Publications, 2008. https://books.google.co.id/books?id=l1ZIlLRDLaYC.

UNIT 3: QUALITATIVE RESEARCH

A. INTRODUCTION

In this unit, you will be introduced to the qualitative research method withs several common research designs based on the method. As different students have different interests and expertise in research, alternatives to quantitative research should be made available as one of the main principles of writing a thesis is freedom choosing the topic pertinent to the field of English language teaching in our case. By understanding the underpinning theoretical foundation and research procedures for qualitative research, you will be able to make decisions regarding the topic of your research and be able to project how your research will turn out.

B. LEARNING OBJECTIVES

2

By the end of this unit, you should be able to:

- State what qualitative research is
- Describe the characteristics of qualitative research
- List the most common research designs in qualitative research

C. CHARACTERISTICS OF QUALITATIVE RESEARCH

- **Qualitative Research Topic**

  The research topic represents the key variables that are the focus of the research, usually written in the title of the research project. Unlike quantitative research emphasizing the quantifications of data, qualitative research closely investigates humans' words, actions and records by establishing patterns emerging from the collected data. Another striking difference from quantitative research is that the qualitative inquiry is not intended to make a broad generalization, but to contextualize the findings. The title of the research should include the nature or approach, main variables, research subjects, location, and time of research. Examples of qualitative research titles:

  - Strategies in Informal English Learning: A Case of EFL Students at an Indonesian University

- Problems Encountered by English Young Learners during Daily English-Speaking Activities at an English Course Program
- EFL Students' Strategies in Overcoming the Challenges of Online Speaking Lessons

- **Background of Research**

  This section describes why some topics are deemed fascinating, relevant, and need to be explored by academics. This word refers to the problem's importance. It is required to describe three aspects in the context of the study:

  ✓ Normative basis as an umbrella for thesis theoretical framework);

  ✓ It is necessary to present the institutional basis of the state/institution (relevant laws/regulations) with the problem being researched;

  ✓ Field empirical facts that become the actual research problem.

- **Focus of Research**

  In quantitative research, the emphasis on qualitative research is referred to as the study's limitation. It covers a variety of topics that are nonetheless broad in scope. This constraint stems from the importance, urgency, and viability of the problem to be handled, as well as a lack of labor, cash, and time. It is stated to be possible if enough resources/capital are available to solve difficulties.

  To decide the good problem in research, there are some criteria objectively and subjectively. The objective criteria to decide the problem of research are:

  (1) It is up to date;
  (2) It is interesting and actual to be studied;
  (3) It has practical benefits when researched;
  (4) It has a high discovery value;
  (5) It has never been studied in other studies;
  (6) It is not a repetition of another research;
  (7) It has a problem faced by the wider community;
  (8) It is important to find the answer;

(9) It has clear theoretical references;
(10) It has clear boundaries;
(11) It has weight in operational dimension;
(12) the hypothesis can be formulated (if necessary);
(13) It has a clear data source;
(14) It has clear instruments and is able to be validated.

The subjective criteria to decide the problem of research are:

(1) It is affordable by the available resource capacity;
(2) It is matched with the researcher's field and ability;
(3) the problem is ethical to study;
(4) It raises the researcher's interest;
(5) It is according to the scientific discipline and research expertise;
(6) The researcher has adequate theoretical mastery;
(7) The researcher's experience related to the scope of the study;
(8) There is sufficient time for research.

The examples of the focus of research are:

- ✓ "The current study looked at how students felt about using online reading in speaking classes at the State Islamic University of Mataram's English Education Study Program. Students' preferences for online reading, motivation, the benefits that students received through online speaking, and students' future usage likelihood were all discussed during the conversation."
- ✓ "The current study will focus on the investigation of code-mixing in Speaking class at the State Islamic University of Mataram's English Education Study Program. The researcher will look at the different types of code mixing in the classroom, the reasons for the instructor mixing the codes, and the reactions of the students."

- **Objective and Significance of Research**

The research objectives mention specifically the objectives to be achieved from the research. The research benefits mention the

(new) contribution expected from the research for the development of science, both theoretical and practical.

- **Scope of Research**

  Within the scope of the research, the limits and scope of the research focus are described. Limits can be made both on the magnitude and distribution of the problem as well as on a theoretical perspective. In the research setting, the researcher describes the natural setting (place or location) for the research to be carried out.

- **Review of Previous Research**

  This section contains a systematic description of the results of previous research (prior research) that are relevant to the issues to be studied in this thesis. Therefore, a critical review that contains the advantages, disadvantages, and results of previous research is presented in this section. The researcher puts forward and shows firmly that the problem to be discussed has never been studied before or explains the author's research position among previous studies.

- **Theoretical Basis**

  This section contains the theoretical basis made by the author about the problems to be studied. In this case, the researcher does not make an inventory of the theory but is required to make and determine the theory as a basis for analyzing the problem being studied, complete with a logical explanation of the operation.

- **Research Method**

  This section contains a series of explanations for the scientific mechanism of research implementation starting from determining the research approach, the type of research, what data will be extracted, using what research instruments, and various stages of research to measure the validity of the data.

- **Approach and Type of Research**

  This section provides brief reasons to choose a qualitative approach in the present research. It also explains the type of qualitative research such as (1) case study, (2) action or classroom research, (3) ethnography, (4) phenomenology, or others.

The example of this subchapter is:

- ✓ This is a qualitative, descriptive literature review study. Literature reviews, including research syntheses and meta-analyses, are critical evaluations of material that has already been published (APA, 2010, p. 10). For the reliability and validity of the study the coding of the data was carried out using constant comparison method and crosscheck by the researchers. Constant comparison is an inductive data analysis procedure in which the researcher generates and connects categories by comparing incidents in the data to other incidents, incidents to categories, and categories to other categories.[11] Although there was a rubric consisting of pre-defined categories, while coding the data, new categories could arise deriving from the data analyzed. After the coding has finished, the completed rubric was cross-checked by the researchers.

D. TYPES OF QUALITATIVE STUDY

Phenomenology

As the name implies, the phenomenological study seeks to explain the phenomena in this world. The phenomena are seen from the perspective of the researcher and the participants in the research and should be based on theories. This type of study is also concerned with lived experiences and actions of research participants. Inductive, qualitative approaches like interviews, focus group discussions, and participant observation is commonly used to obtain deep and detailed descriptions of the event or phenomena.[12]

Case Study

A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.

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[11] Creswell and Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*.

[12] Lunenburg and Irby, *Writing a Successful Thesis Or Dissertation: Tips and Strategies for Students in the Social and Behavioral Sciences*.

E.g. The implementation of 2013 curriculum by teachers of SMPN 2 Mataram

A case study may investigate multiple cases and although it tends to be qualitative, you may also include quantitative data.

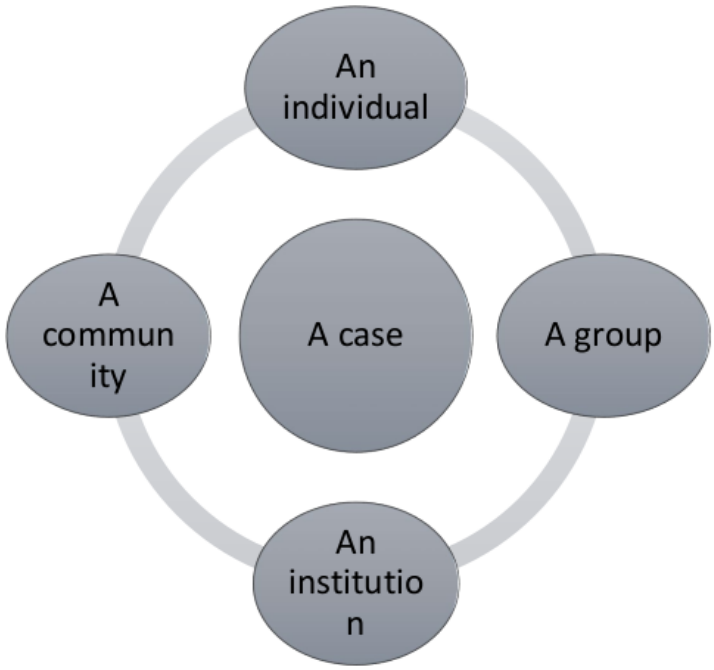

Figure 7 Types of Case

Characteristics of a case study is as follows

1. Study of particular instances (to shed light on the phenomenon, events, curriculum, program, or persons interesting to researcher)
2. In-Depth Study of a case (needs a variety of kinds of evidence/data)
3. Study of a phenomenon in its natural context
4. Representation of emic and etic perspective (emic=research participants' perspective, Etic= researcher's perspective)

Steps in doing Case study

1. Formulating research problem (aims & questions)
2. Selecting a case
3. Determine data gathering and analysis techniques
4. Prepare to collect the data

5. Collect the data (observation, interview, physical artifacts, or written and electronically stored material)
6. Analyze the data (coding, triangulation, content analysis, interpreting)
7. Prepare the report.

Key Elements in Case study Data Analysis

The first is chronology or the sequence in which events occurred. This is not the same as the logic of the research process: you will find evidence that connects to earlier discoveries, and later revelations will compel you to modify your view of what happened.

Second, logical coherence is important: chronology is not necessarily the best means to present common ideas or difficulties. You may need to gather these and arrange them side by side, which is especially crucial when cross-referencing or transferring material from multiple sources on the same topic.

Third, the purpose of your study: which has a retroactive influence on the structure. That's where you're going, and no matter what happens, you must have that direction in mind.

Fourth, there's the creation of your research questions, which is a constant strand as you gain a better understanding of the issues. These are the story's sub-plots, the answers to which will (hopefully) help you reach your overarching goal.

Fifth, your impromptu theory or explanation of the problems you're facing. This is what gives your work its meaning or comprehension. It's not enough to be descriptive; you also need to be able to explain what you've discovered.

Coding and Triangulation

Making decisions on how to classify or label specific pieces or segments of data is what coding entails.

In order to arrive at the same study conclusions, triangulation requires the employment of various, independent techniques of acquiring data in a single investigation. Theoretical triangulation (analyzing the same set of facts from several perspectives), investigator triangulation (using multiple observers or interviewers), and methodological triangulation are all examples of this (using different measures or research methods to investigate a particular phenomenon).

Ethnographic Research

Ethnographic research deals with telling narratives description of an individual story by investigating the people's behaviours , language, actions, and artifacts. Ethnographic research uses a variety of techniques in data collection involving participant observation and interviews. Before choosing an ethnographic design, think about the following: (a) your own understanding of culture and cultural anthropology, which is the foundation of ethnography; (b) your ability to write in a narrative style so that others can understand the cultural occurrences and norms of the group; and (c) your ability to be a part of the group while remaining separate from it as the researcher, thus creating a fine line and balance between the researcher and the participants (d) the ethical implications of researching the group or people; and (e) the fieldwork requires a significant amount of time.[13]

Grounded Theory

As the name implies, grounded theory aims to establish theory inductively from data gathered about phenomena. Grounded theory research consists of three key elements entailing concepts, categories and propositions. Concepts are raw data labeled conceptually, while categories are more abstract than the concepts. Categories are created on the basis of comparison and contrast between the data. Finally, propositions are the relationship indicated between the concepts and the categories. In grounded theory, four research criteria are necessary for study validation and establishing the dependability of the study's findings: (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability. In addition to these, triangulation is also an important technique the ensure research validity. There are four types of triangulation: (a) data triangulation, which involves time, space, and people; (b) investigator triangulation, which entails the use of multiple, rather than single, researchers/observers; (c) theory triangulation, which entails the use of multiple theoretical frames in the

[13] Ibid.

interpretation of the phenomenon; and (d) methodological triangulation, which entails the use of multiple methods.[14]

The Presence of Researcher

In qualitative research, the researcher serves as both an instrument and a data collector, necessitating its presence at the study site. In the research report, the presence of researchers at the research site must be stated unambiguously. It's also important to specify whether the researcher is a full participant, participant-observer, or complete observer in the study. Similarly, it is vital to clarify whether the subject or informant is aware of the researcher's presence in his or her capacity as a researcher.

Setting of Research

Researchers must discuss the place's attributes, the rationale for picking the location, and how they arrived at the location. The place must be detailed in detail, including physical features, organizational systems, and day-to-day activities. Attractiveness, distinctiveness, and dependability should all be factors in site selection. As a result, it is not suitable if the claimed reasons do not satisfy these requirements, such as its proximity to the researcher's home, the researcher's previous job experience, or the researcher's familiarity with relevant persons or informants.

Source of Data

In qualitative research, the data source is the research subject or informant, or the individual from whom the data is collected. When researchers gather data via questionnaires or interviews, the respondent is the data source, however, when they employ observation techniques, the data source might be in the shape of objects, movements, or whatever processes. The researcher should clarify (a) who the study subject or informant is, as well as their qualities, and (b) the sort of data to be gathered in line with the title and formulation of the problem in this part. The following are some examples of data sources that may be utilized to extract information:

(1) Documents

[14] Ibid.

Documents can supplement information from other sources by providing particular details. (1) Personal papers, such as diaries, letters, pictures, videos, video recordings, poems, play scripts, character biographies, and other similar items; (2) Official papers, such as meeting minutes, proposed policy rules, bulletins, employee lists, employee regulations, student lists, student progress reports, report cards, diplomas, certificates, decrees, state sheets, or other essential records archives. Offices, schools, hospitals, and a variety of other organizations.

(2) Resource Persons.

As an individual with information, the resource person's role as a source of research data is critical. Not only do resource individuals respond to the difficulties posed, but they also determine the direction and style in which they communicate the knowledge they have. In order to grasp a range of vital information that has a direct influence on the quality of study, researchers must be flexible, open, and critical when dealing with sources. Researchers can identify key informants and employ additional informants to obtain information about the topic being examined as well as ideas for alternative sources of data that support the investigation. Resource individuals can be chosen based on a number of responsibilities to gain more full and diversified information, allowing access to information that is owned according to research needs. Because the speakers' words and actions serve as research data, it's critical to take precise notes, document, photograph, and monitor them during the data collection procedure. However, while using resource personnel, researchers must remain informed of the study aims and objectives in order to keep the research on track. Because of the enormous range of information accessible from sources, only those that are relevant to the study problem should be retrieved.

(3) Events or activities.

One type of data that may be utilized in research is events or activities. It is possible to observe how something happened in a more certain way by viewing an event or activity since it was witnessed firsthand by the researcher. Activities that serve as a source of research data can be done on purpose or unintentionally, frequently and repeatedly, or only once and found by mistake.

(4) Place or location.

A place, often known as a location, is a data source that may be utilized in research. The area and its environment might provide information on the circumstances of the event or activity location. Conclusions about the study topic can be inferred critically from the location or location of an occurrence.

(5) Objects, photographs, and recordings.

Various artifacts, images, and documents viewed during an event might be utilized as study data sources. Objects are key sources of data in anthropological, archeological, biological, and geophysical studies. There are two sorts of data sources: primary data sources and secondary data sources. Primary data sources are those that include the most important information, such as information gathered directly from sources or informants in the field. Secondary data sources are supplementary data obtained from sources created by others, such as books, records, images, and statistics, rather than directly from the field. If there are no primary data sources accessible, secondary data sources can be employed in research as supplemental or primary data sources.

- **Procedure of Data Collection**

This section explains how to gather data, including whether to employ (1) participatory or non-participatory observation; (2) structured or unstructured interviews; (3) focus group discussions (FGD), (4) qualitative questionnaires, and (5) documentation. This sort of information is gathered by applying appropriate data

collection techniques to the study title and definition of the research problem.

If an interview technique is implemented, the researcher must determine the type of interview which will be used to collect data. The types are as follows:

1. In-depth Interview. In-depth interviewing inquiries are usually expressed in an unscripted manner. This in-depth interview, according to Yin, is an important data gathering technique in a case study.[15] In-depth interviews are interviews that are performed without a tight format or in a formal environment and are conducted flexibly and honestly. This interview was done several times with the same informants, using open-ended questions concerning events or actions as well as opinions.
2. Interview with General Guidelines. The interviewer must provide a framework or outline of the subject in the form of interview instructions for this sort of interview. Although the sequence of the questions might be variable, according to the flow of the discussion and the conditions of the informants being questioned, talks, themes, and questions in the interview must not be beyond the framework that has been established. The purpose of general rules is to keep the debate focused on the issue and the broad framework that has been defined.
3. Standard Open Interview. An open interview is one in which all questioned informants are asked the same set of questions, with the same terminology, sequence, and presenting technique. This sort of interview should be utilized if the number of informants to be questioned is expected to be considerable, and the diversity of questions will make it difficult for researchers.
4. Structured Interview. The interviewer determines his problems and questions to be asked in a structured interview. This interview is designed to obtain responses to hypotheses. As a result, the questions are well-structured. When the entire study

[15] Robert K. Yin, *Case Study Research and Applications* (Sage, 2018).

sample is considered as having the same chance to answer the questions given, structured interviews are commonly employed. The benefit of a structured interview is that it does not enable the interviewee to lie because the questions are not deepened.

5. Unstructured Interview. An unstructured interview is one in which the goal is to uncover non-standard or non-single data. Unstructured interviews produce results that highlight exceptions, deviations, irregular interpretations, reinterpretations, innovative methods, expert viewpoints, or a single point of view. The difference between this interview and a structured one is the amount of time available to ask questions and respond more freely. Furthermore, the informants/informants are confined to only those who are chosen, specifically those who are regarded to have the expertise and a deep dive into the problem, as well as the required information.

6. Focus Group Discussion. When a researcher uses the Focus Group Discussion (FGD) procedure, he or she is essentially conducting a group interview. This is a form of an organized or concentrated interview. A focus group discussion (FGD) is a sort of interview with a discussion guide that includes many subjects and a variable order of questions. This approach is particularly valuable for obtaining data on attitudes, interests, and histories in relation to a disease, as well as data about the goals and requirements of a certain community group. Essentially, this conversation is a group interview, thus the information obtained is reliable since it has been discussed by a variety of sources, including members of the discussion group.

If the researcher decides to employ the open questionnaire approach in qualitative research, the questions will be left open, with the opportunity for respondents to provide free replies and explain why they replied the way they did. In addition, the reply can use this answer to discuss additional topics that are essential and linked to the issues being asked. Focus on topics that need to be explored in greater detail and depth using additional data gathering techniques, such as interviews, observation, and

document analysis, based on diverse responses from respondents or research subjects who filled out (open) questionnaires.

Content analysis is another method for gathering qualitative data. According to Yin, the practice of studying document content is termed content analysis because the researcher not only records the relevant material presented in the document, but also carefully, completely, and critically evaluates the implicit meaning in the text. The use of notes, archives, photos, videos, photographs, and other documents to collect data is known as document content review. Important records relevant to the problem are included in the document, allowing for the collection of data in a thorough, legal way rather than relying just on estimations.

The Technique of Data Analysis

Data analysis is done throughout the data gathering process and after the data has been gathered in qualitative research. There are numerous sorts of data analysis methodologies to select from in this scenario. There are a variety of data analysis theories to pick from, including:

1. Interactive Analysis from Miles & Huberman.[16] Miles and Huberman proposed interactive model data analysis. There are three parts to this interactive model data analysis: (1) data reduction, (2) data display, and (3) conclusion/verification. According to them, qualitative data analysis must include the three major components because the relationships and relationships between the three components must be continually examined in order to identify the direction of the findings as the research's ultimate result. Data analysis begins when the data gathering procedure takes place in the field, and data analysis is carried out in a cycle in this interactive analysis model. Data collection is the first step in the data analysis process, which continues until the researcher can make final findings. If the research results are still in doubt, the researcher might go back to the beginning of the research

[16] Matthew B Miles and A Michael Huberman, *Qualitative Data Analysis: An Expanded Sourcebook* (sage, 1994).

process, starting with the data collecting procedure in the field, until new research data is recovered, as a foundation for more consistently forming conclusions. However, a recent account on qualitative data analysis by Miles & Huberman has evolved into data condensation, data display and drawing and verifying conclusions.[17]

2. Ethnographic Analysis from Spradley. Basically, this analysis is similar to that of other qualitative research, in that data analysis is carried out concurrently with the data gathering procedure. Spradley, according to Basrowi, was the first to create domain analysis methodologies, taxonomy analysis, component analysis, and theme analysis.[18] Data analysis takes place in qualitative research at the same time as data gathering in the field. Such data analysis approaches have long been utilized in ethnography, a type of qualitative study. Delaying writing activities until the data gathering procedure is complete is considered a severe error in the research data analysis stage since cultural anthropological research is generally carried out over a lengthy period of time. The procedure is as follows: (1) Choosing an issue to work on. Every ethnographic study starts with the same basic question: what cultural meanings do individuals employ to guide their behavior and understand their experiences. (2) Gathering cultural information. By making broad observations and capturing data in field notes, ethnographic researchers (ethnographers) began to make descriptive remarks. (3) Cultural data analysis Cross-checking field notes for cultural symbols and looking for links between these symbols are all part of this study. (4) Coming up with an ethnographic hypothesis A relationship hypothesis, which must be tested by examining what the informants know, is an anthropological hypothesis that must be established after gathering the first data. (5) Ethnography writing. The

[17] Matthew B Miles et al., "Qualitative Data Analysis: A Methods Sourcebook" (2014).
[18] Basrowi, "Memahami Penelitian Kualitatif."

ethnographer will test the hypothesis and return to the field to collect data.

3. Inter-Case Analysis. This kind of analysis is used only in multiple case study research. This form of study is conducted not just in one area, but in multiple sites with varied qualities that allow for diverse outcomes, and it is conducted simultaneously or on a single topic. Coverage Period Term for Symbolic Categories Observations in general Situations, in general, Analyze the domain Included Understanding Interrogation (description question) Taxonomy of Focused Observation Internal Domain Interview (Structural Question) research: Domain Selection Tracking Internal Structural Similarity. Because several case studies yield more data than single case studies, this form of study is frequently carried out by a group. According to Yin, three types of analysis are commonly used in numerous case studies: (1) Pattern comparison. In this stage, the researcher can compare two different patterns, such as the impact patterns displayed in the current research graph with the impact patterns depicted in the prior research graph. (2) Arrangement of causal relationship. The examination of many case studies frequently employs the building of causal links. (3) Analysis of time series. The use of this sort of time series analysis in case studies is consistent with the use of time series in quantitative research that employs both true-experimental and quasi-experimental methods.[19]
4. Analysis of Model Braids. This study looks at the connection between three important components of qualitative analysis: data reduction, data presentation, and generating conclusions with verification and the field data collection method. The analytical procedure in this interwoven analysis is broken down into three parts, commencing with the steps below. (1) Data gathering. (2) Data reduction compilation. (3) Data presentation and formulating preliminary findings. (4) Data

[19] Yin, *Case Study Research and Applications*.

stability is ensured by verification. (5) If the result is unsatisfactory, the data gathering procedure is repeated in the field. (6) Analysis is done regularly and continually by continuously decreasing data, constructing data displays, and drawing conclusions and verifying results.

5. Phenomenological Analysis This phenomenological model data analysis, according to Bogdan and Taylor, is an analysis that aims to comprehend (understanding) through participatory observations, open interviews, and personal documents.[20] This differs from the positivist viewpoint, which employs questionnaire-survey methods, inventory, and demographic analysis to discover the link between variables in order to find facts or explanations for the occurrence of a symptom. The phenomenological technique has three stages: the pre-field stage, the field stage, and the data analysis stage.

Trustworthiness

In qualitative research, quality criteria or trustworthiness may be operationalized by meeting four criteria: (1) credibility, (2) transferability, (3) dependability, and (4) confirmability.[21] Before the research was decided, each of them may be met by employing a variety of ways. The study's credibility is discussed in detail, with each point addressed separately.

Credibility

Internal validity in quantitative research is the equivalent of credibility, which refers to trust in the truth value of the study's conclusions. The researcher used two strategies to establish the credibility of the current study: constant observation and triangulation procedures. A consistent observation is used to identify the qualities and aspects in the circumstance that are most relevant to the research goals being pursued and to focus on them in more depth. The depth of the research

[20] Steven J Taylor and Robert Bogdan, "Introduction to Qualitative Research Methods: The Search for Meanings," in *Introduction to Qualitative Research Methods: The Search for Meanings*, 2014, 145–145.

[21] Egon G Guba, Yvonna S Lincoln, and others, "Competing Paradigms in Qualitative Research," *Handbook of qualitative research* 2, no. 163–194 (1994): 105.

is provided through constant observation, which also entails weeding out irrelevancies and non-essentials.[22] Persistent observation was carried out in this investigation by watching and videotaping the individuals' spoken dialogue. Field notes and reflective descriptions were used to identify important data that supported study aims during observations.

In qualitative research, triangulation may be characterized as the use of two or more data gathering techniques, or the use of various and disparate sources, methodologies, investigators, and theories to support conclusions. Three forms of triangulation are commonly used: sources, methodological, and theoretical triangulations. For example, in a study of students' communication strategies (CS), source triangulation was achieved by combining verbal and nonverbal CSs, as well as the learners' challenges that led to the usage or selection of distinct techniques among the learners or across various sources of the same information. The technique of methodological triangulation occurs when several methodologies are employed to measure the same unit. The technique of methodological triangulation occurs when several methodologies are employed to measure the same unit. In this study, three distinct data collecting strategies (observation, video recording, and interview) were used on the same and separate occasions to achieve methodological triangulation. Furthermore, in this study, theories that were pertinent to the research topics were chosen for theoretical triangulation. Its goal was to learn about current CS theories that were put to use in a real-world context. The implementation of this theory triangulation approach led to forms of research findings discussion from the perspective of existing theories. In this section, the researcher must describe how he or she ensured the data and findings were accurate. Extending the presence of researchers, for example, triangulation (sources, methodologies, and theories), in-depth observation, peer discussion, and reference adequacy, to name a few. Triangulation employs anything other than the data to examine or compare the data in issue as a technique to ensure its authenticity. Checking the veracity of the data through various sources is the most often utilized triangulation approach. Denzin & Lincoln

[22] Ibid.

mention four forms of triangulation as a technique for validating data that use sources, techniques, investigators, and theories.[23]

- • Source triangulation, i.e., directing researchers to collect data from a range of sources since comparable data will be more stable if the truth is derived from several sources. For instance, (a) comparing observable data with interview findings; (b) comparing what people say in public with what they say in private; (c) comparing what individuals say with what is seen all the time; (d) comparing one's circumstances and viewpoints with those of others in other social strata: (e) comparing interview findings to issues documented in linked documentation.
- Method triangulation is a type of triangulation that involves examining comparable data using several methods. There are two sorts of procedures in this triangulation: verifying the degree of confidence in research findings using several techniques and checking the degree of confidence of multiple data sources using the same method.
- Research triangulation is the process of examining the data's validity by comparing it to the findings of other researchers. Using the experience of other researchers has tremendously aided in reducing data gathering errors. This triangulation can also be accomplished by comparing the results of the first researcher's analysis with those of other researchers.
- Theory triangulation is a triangulation that may be attained via the application of various related theories. The procedure is as follows: (a) Data evaluated by one theory is then analyzed by another theory to arrive at a solid conclusion. (b) An inductive or logical comparative explanation is sought if the analysis has characterized the pattern of the connection and contains the explanation reached via the analysis. (c) Theoretical triangulation can be done inductively by adding the search for different data organization approaches that may lead to further discoveries. (d) Logically, it is accomplished by considering different logical

[23] Norman K Denzin and Yvonna S Lincoln, *The Sage Handbook of Qualitative Research* (sage, 2011).

options and then determining whether or not those possibilities are supported by the available evidence. (e) Increasing trust by reporting study findings with an explanation, as mentioned in the theory triangulation.

2 Transferability

The transfer of the study findings to other situations, or even to the same circumstances at a different period or with other individuals, is referred to as transferability. The results' relevance is determined by the degree of similarity between providing and receiving settings (earlier and later). As a result, the researcher cannot quantify the research's transferability (external validity in quantitative terms), but he or she may offer the detailed description required for other researchers interested in making a transfer to determine whether the transfer is feasible.[24] In this study, a researcher might define the given circumstances to help other researchers who wish to use his findings. The providing contexts were created and applied to the study's subjects and venues in various situations.

3 Dependability

In quantitative research, dependability is the opposite of reliability and relates to the degree of consistency of the findings. The consistency of the results refers to how to ensure that a study's research findings "would be reproduced if the inquiry were replicated with the same or comparable individuals in the same or similar situations".[25] Using the inquiry audit approach is one way to verify dependability. The purpose of the inquiry audit was to see if the research procedure was followed correctly and if the data were obtained in a timely manner. It also ensures that the data used is not fraudulent, resulting in novel conclusions. The inquiry audit is also used to evaluate the product (data, results, interpretations, and recommendations) and testify that it was backed up by data and internally consistent, allowing the bottom line to be approved. This procedure, on the other hand, confirmed the research's veracity.

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[24] Guba, Lincoln, and others, "Competing Paradigms in Qualitative Research."
[25] Ibid.

4 Confirmability

In quantitative research, confirmability refers to the results' neutrality, which is the inverse of objectivity. The degree to which the conclusions of a study are determined by the participants and conditions of the investigation, rather than the researcher's prejudices and viewpoints, is known as the neutrality of the findings. An inquiry audit trail was used to assess the current study's confirmability. Its purpose was to guarantee that the research product was backed up by relevant facts. An inquiry audit was carried out by supplying illustrative data for each discovery, adequate information for each transcription, and photographs of the subjects and locations.

E. LIBRARY RESEARCH

A. Introduction

Library research is a less common research method used by the students. It may be because of the unfamiliar procedures and methods or because it is a time-consuming type of research. The researcher has to get abundant of resources that should be read, summarized, and analyzed as well as written as a comprehensive and critical review. It is totally not convenient, yet exhausting for some people. However, one of the benefits of library research is that the time-consuming consequence will not be longer once the researcher gets all points and arrange them into a critical review. It is different from field-based research where the researcher should visit the participants, do the observation and interview which is more time-consuming. This indicates that every single type of research may have its consequences. It has some advantages and disadvantages. The current article aims to explain the definition, procedures, methods and content of library research.

According to Sugiyono (2012), library study deals with the review and analysis of theories and references which is part of academic literature.[26] The aim of library research is to collect the relevant information with the topic or statement of problems as the object of the research[27]. The information can be gained from books, journal articles, thesis, dissertation, encyclopedia and other resources. The researcher will generate and analyze the information and

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[26] Sugiyono, *Metode Penelitian Kuantitatif Kualitatif Dan R&D* (Bandung: Alfabeta, 2012).
[27] Nazir, *Metode Penelitian* (Jakarta: Ghalia Indonesia, 2003).

insights or arguments from experts related to the research topic. To sum up, the library research mainly deals with a lot of resources that will be generated as relevant information and basic theories to start the analysis of the topic being discussed. It is a bit different from the use of literature review in a field-based research as the theoretical basis to justify the method and analysis on primary data collected from the field. It is more than just function as a research framework. It is rather functioned as analytical framework to discuss the variables, but it is limited in the library-based resources. So, the data collection techniques used in library research is a searching procedure to find the appropriate resources.[28] It is expected that the finding will answer the research problems stated in the study.[29]

In analyzing data, there are two techniques that can be implemented as follows[30]:

1. Comparative analysis. It is used to compare a research object with comparative concept. This type of analysis may result in a relevant and justifiable data that comparative concepts are in accordance with the research object that is being discussed or the finding does not confirm the research object or topic being discussed.
2. Historical analysis. The researcher analyzed the past event to understand the how and the why of particular phenomena or events. The result will be used to be deciding factor or background of analysis to have a decision.

The above-mentioned analyzing techniques really depend on the research object and topic discussed in the research. Comparative analysis is relevant once the researcher has a clear variable and it needs to be confirmed with relevant theories, then the theories are used to justify the topics whether the finding confirms the same or different. On the other hand, historical analysis is relevant with research on one's perspective or biography where the research setting is one of the crucial issues.

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[28] S. Arikunto and C.S.A. Jabar, *Evaluasi Progra m Pendidikan Pedoman Teoretis Praktis Bagi Mahasiswa Dan Praktisi Pendidikan* (Jakarta: Bumi Aksara, 2009).

[29] R. Poppy Yaniawati, "Penelitian Studi Kepustakaan (Library Research)" (Seminar "Penyamaan Persepsi Penelitian Studi Kepustakaan," 2020).

[30] Mestika Zed, *Metode Penelitian Kepustakaan* (Jakarta: Yayasan Obor Indonesia, 2004).

F. CATEGORIES OF LIBRARY RESEARCH

There are several types of library research.

1. **The analysis of thought or perspectives**

Research on figure's thought aims to find and to know the idea or perspectives from the figure through certain resources that reveal their thoughts. The sources might include books, letters, massages or other documents that comprehensively reflect his/her ideas. However, if the figure does not really have a book or other kind of document that tells his life, so the researcher has to involve many people and related stakeholders to dig their perspectives and combine those perspectives into a comprehensive story. The researchers are encouraged to provide academic theories dealing with their interests to explore the figure's thoughts. It is becoming one of the considerations to check the validity and quality of the books or documents used in the research because it will really determine the validity of information gained from the resources. In the Islamic context, there are several well-known figures who have brilliant perspectives or thought on a particular matter. The researchers might find it easy to find their works revealed in their books and other types of works. The figures are Ki Hadjar Dewantara, Muhammad Abduh, Imal Ghazali, Nurcholis Madjid and many other figures that can be explored.

2. **Textual analysis**

Textual analysis is a study of texts from certain books that focus on investigating the content or authenticity of the texts. This type of qualitative study can be conducted through content analysis, discourse analysis, critical discourse analysis or other methods of analysis in qualitative study. The texts can be taken from school textbooks at all levels or other reference books used in higher education. The characteristics of textual analysis are assessing and evaluating the content and authenticity and comparing to the contemporary contexts. Another objective of this study, especially in higher education, is the idea of developing and implementing of existed theory and its relevance with today's context.

3. History analysis

The study of history always employs library research using documentation and data technique. However, the data from history study is not limited to books or texts, but it also involves artifacts. The study of history does not always investigate past events but also it could be emphasized on analysis of events through the evidence or proofs.

G. STEPS FOR DOING LIBRARY RESEARCH

Prior to the explanation of step-by-step process in library research, it is pivotal to understand the differences between secondary resources and primary resources. **Secondary sources** are taken from the research conducted by other researchers. They have conducted the research by describing, analyzing and evaluating the information from primary research. The information or finding in primary research is repackaged by the researcher to make it more accessible and understandable.[31] A few examples of secondary sources are books, journal and magazine articles, encyclopedias, dictionaries, handbooks, periodical indexes, and reviews, etc. On the other hand, primary **sources** are the representation of original thinking or original work, findings or new information as the result of the data analysis. Usually, these represent the first formal appearance of original research[32]. Primary sources include statistical data, manuscripts, surveys, speeches, biographies/autobiographies, diaries, oral histories, interviews, works or art and literature, research reports, government documents, computer programs, original documents (birth certificates, trial transcripts...) etc.

According to Zed (2008), there are four steps to conduct library research.[33] First, the researcher should prepare tools or equipment to write or to take a note such as pen, paper or laptop. Second, the researcher should arrange the bibliography work where the main references are put in the list of references that will be used in the research. The references can be derived from library collections or reputable websites. Third, the researcher should

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[31] Elmer E. Rasmuson Library, "Library Research Process," last modified 2020, accessed January 31, 2021, https://library.uaf.edu/ls101-research-process.
[32] Ibid.
[33] Mestika Zed, *Metode Penelitian Kepustakaan* (Jakarta: Yayasan Obor Indonesia, 2008).

allocate sufficient time to start the research. Having a research plan is essentially needed in library research because the researcher will read many references consisting of main and supporting references. Fourth, the researcher may start to read and to write the articles.

In addition, Mann (2020) proposed seven important steps to start a library research as follows[34]:

1. **Keyword searches**. It is suggested to have a clear keyword before searching or starting the navigation. Searching relevant keywords in catalogs, indexes, search engines, and full-text resources is beneficial both to narrow a search to the specific subject heading and to find sources not captured under a relevant subject heading. To search a database effectively, start with a Keyword search, find relevant records, and then find relevant Subject Headings. In search engines, include many keywords to narrow the search and carefully evaluate what you find.
2. **Subject searches**. Subject Headings (sometimes called Descriptors) are specific terms or phrases used consistently by online or print indexes to describe what a book or journal article is about. This is true of the library's Catalog as well as many other library databases.
3. **Look for recent, scholarly books and articles.** Within catalogs and databases, sort by the most recent date and look for books from scholarly presses and articles from scholarly journals. The more recent the source, the more up-to-date the references and citations.
4. **Citation searches in scholarly sources**. Track down references, footnotes, endnotes, citations, etc. within relevant readings. Search for specific books or journals in the library's Catalog. This technique helps you become part of the scholarly conversation on a particular topic.
5. **Searches through published bibliographies** (including sets of footnotes in relevant subject documents). Published bibliographies on particular subjects that often list sources missed through other kinds of searches. BIBLIOGRAPHY is a subject heading in the Catalog, so

[34] Thomas Mann, *Library Research Methods* (Oxford University Press, 1995), accessed January 31, 2021, https://libguides.princeton.edu/c.php?g=84018&p=664971.

a Guided Search with BIBLIOGRAPHY as a Subject and your topic as a keyword will help you find these.

6. **Searches through people sources** (whether by verbal contact, e-mail, etc.). People are often more willing to help than you might think. The people to start with are often professors with relevant knowledge or librarians.
7. **Systematic browsing, especially of full-text sources arranged in predictable subject groupings**. Libraries organize books by subject, with similar books shelved together. Browsing the stacks is a good way to find similar books; however, in large libraries, some books are not in the main stacks (e.g., they might be checked out or in ReCAP), so use the catalog as well.
8. Further detail of tips and tricks to start a library research were introduced by George (2008) in his book.[35] The following tips are fully adapted from the book, but I am trying to provide the explanation or comments after presenting the full sentences taken from the book.
9. **Read background information on your research questions in one or more specialized, as opposed to general, encyclopedias**. It means that initial information is required before you start searching on the keywords.
10. **Begin to compile several lists (in your research log) and continue this practice throughout the library research process.** The most important lists include a. Relevant terms or phrases for your research, plus synonyms for them; b. Call numbers you encounter for relevant books; c. Subject headings you encounter for relevant books and descriptive phrases you encounter in databases; d. Names of experts who have studied your topic or written about your research questions, and organizations concerned with them; e. Titles of scholarly journals and topic-focused periodicals that publish in the field(s) you are exploring. Sometimes, many researchers find it difficult to research the most relevant or appropriate sources with the research topic because they do not prepare list of keywords.

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[35] Mary W. George, *The Elements of Library Research* (New Jersey: Princeton University Press, 2008).

11. **Search your own library's online catalog** for a. Specific book sources listed at the end of the encyclopedia articles you have read; b. Additional book sources your library owns, using the subject heading links used for the specific sources; c. Still more book sources your library owns, using combinations of keywords. Online catalog is very helpful to find relevant keywords which you might need anytime.
12. **Begin systematic browsing of your library's shelves**, looking on the shelves for all the call numbers you have established in step 3.
13. **Search relevant indexes and databases** to identify specific articles on your topic in both scholarly and popular publications, including newspapers.
14. **Skim everything you locate** to determine which sources may be the most useful and to get leads to additional specific sources.
15. **Return to your library's online catalog to find call numbers for the additional books** you have identified via footnotes and bibliography entries and to determine if your library subscribes to the periodicals or newspapers for which you now have article references. Track these sources down.
16. **Repeat steps 3 through 7 as necessary** until you have in hand the variety of sources you imagined when you were brainstorming, conferring at least once with your instructor during the process.

The following table of subject area database search might help you to find appropriate database or references[36]:

Subject Area	Database Name	Description
General/Multidisciplinary	**Library Articles Search**	Gateway to discovering a wide range of the library's resources. Results include scholarly journal articles, newspaper articles, book

[36] Amanda Peters, "Research Guides: Finding Articles & Journals," last modified 2021, accessed June 10, 2021, https://guides.lib.umich.edu/c.php?g=283364&p=3145435.

		chapters, conference proceedings, and more from all disciplines.
General/Multidisciplinary	**ProQuest Research Library**	Indexes over 5,000 journals and magazines, academic and popular, with full text included for over 3,600.
General/Multidisciplinary	**JSTOR**	Provides full-text access to core scholarly journals in the arts, humanities, social sciences and sciences.
News & Current Events	**ProQuest News & Current Events**	Full text newspapers from all over the world. This database searches major newspapers like the New York Times and the Detroit Free Press.
News & Current Events	**Nexis Uni**	Provides full-text access to a wide range of news, business, legal, and reference information, including hundreds of U.S. and foreign newspapers, legal and business publications, wire services, broadcast media transcripts, and trade/news magazines.
Business	**ABI/INFORM Global**	Indexes 3,000+ business-related periodicals (with full text for 2,000+), including Wall Street Journal.
Education	**ERIC [ProQuest]**	Database from the U.S. Dept. of Education providing extensive access to educational-related literature.

Psychology	**PsycINFO**	This database contains more than one million citations and summaries of journal articles, book chapters, books, dissertations and technical reports, all in the field of psychology.
Sciences/Social Sciences	**Web of Science**	Searches multiple databases related to the sciences and social sciences.
Humanities/Social Sciences	**Project MUSE**	Full-text access to scholarly journals and e-books published by more than 120 scholarly societies and university presses. This is a great database for research in the humanities and social sciences.

Once the researcher has compiled a succinct literature or references, the organization process is needed. According to Hasan (2000), there are three steps in organizing the reference as follows:[37]

1. Understand the type of references or literature needed.

a. Based on the source of references, the type of reference can be defined as written text sources such as books, newspapers, magazines etc. and non-written sources include films, slides, manuscripts, reliefs etc.

- Based on the content of reference, it can be defined into two kinds: primary and secondary resources. Primary data means data that are obtained directly by the researchers through an interview, observation, document analysis or other techniques of data

[37] M. Iqbal Hasan, *Pokok-Pokok Materi Metodologi Penelitian Dan Aplikasinya* (Bogor: Ghalia Indonesia, 2002).

collection. Secondary data is data that are obtained from other persons who tell or provide information.

2. To investigate or to collect the library resources, tools namely bibliography cards are used. The cards provide information about the name of the figure, sources, time, institution, city or places and explanation on the variables.

3. Data display in library research can be done through direct or indirect quotation.

In order to evaluate reliable sources, there are several aspects that should be ensured. These are fully adapted Booth et.al (2003) as follows[38]:

1. **Is the source published or posted online by a reputable press?**

Most university presses are reliable, especially if you recognize the name of the university. Some commercial presses are reliable in some fields. Be skeptical of a commercial book that makes sensational claims, even if its author has a PhD after his name.

2. **Was the book or article peer-reviewed?**

Most reputable presses and journals ask experts to review a book or article before it is published; it is called "peer review." Many essay collections, however, are reviewed only by the named editor(s). Few commercial magazines use peer review. If a publication hasn't been peer-reviewed, be suspicious.

3. **Is the author a reputable scholar?**

This is hard to answer if you are new to a field. Most publications cite an author's academic credentials; you can find more with a search engine. Most established scholars are reliable, but be cautious if the topic is a contested social issue such as gun control or abortion. Even reputable scholars can have axes to grind, especially if their research is financially supported by a special interest group. Go online to check out anyone an author thanks for support, including foundations that supported her work.

[38] Wayne C. Booth, Gregory G. Colomb, and Joseph M. Williams, *The Craft of Research* (Chicago: University of Chicago Press, 2003).

4. **If the source is available only online, is it sponsored by a reputable organization?**

A Web site is only as reliable as its sponsor. You can usually trust one sponsored and maintained by a reputable organization. But if the site has not been updated recently, it may have been abandoned and is no longer endorsed by its sponsor. Some sites supported by individuals are reliable; most are not. Do a Web search for the name of the sponsor to find out more about it.

5. **Is the source current?**

You must use up-to-date sources, but what counts as current depends on the field. In computer science, a journal article can be out-of-date in months; in the social sciences, ten years pushes the limit. Publications have a longer life in the humanities: in philosophy, primary sources are current for centuries, secondary ones for decades. In general, a source that sets out a major position or theory that other researchers accept will stay current longer than those that respond to or develop it. Assume that most textbooks are not current (except, of course, this one). If you don't know how to gauge currency in your field, look at the dates of articles in the works cited of a new book or article: you can cite works as old as the older ones in that list (but perhaps not as old as the oldest). Try to find a standard edition of primary works such as novels, plays, letters, and so on (it is usually not the most recent). Be sure that you consult the most recent edition of a secondary or tertiary source (researchers often change their views, even rejecting ones they espoused in earlier editions).

6. **If the source is a book, does it have notes and a bibliography?**

If not, be suspicious, because you have no way to follow up on anything the source claims.

7. **If the source is a Web site, does it include bibliographical data?**

You cannot know how to judge the reliability of a site that does not indicate who sponsors and maintains it, who wrote what's posted there, and when it was posted or last updated.

8. If the source is a Web site, does it approach its topic judiciously?

Your readers are unlikely to trust a site that engages in heated advocacy, attacks those who disagree, makes wild claims, uses abusive language, or makes errors of spelling, punctuation, and grammar.

9. If the source is a book, has it been well-reviewed?

Many fields have indexes to published reviews that tell you how others evaluate a source.

10. Has the source been frequently cited by others?

You can roughly estimate how influential a source is by how often others cite it. To determine that, consult a citation index.

Library Research Template

This section provides information on procedures of library research for proposal and thesis format as follows:

Proposal

A. Title
B. Background of Research
C. Statement of Problem
D. Objective of Research
E. Significance of Research
F. Theoretical Background and Review of Related Literature
G. Research Method
    1. Approach and Type of Research
    2. Source of Data
    3. Data Collection Technique
    4. Data Analysis
H. Discussion Format
I. Research Schedule
J. References

Thesis

Chapter I: Introduction

A. Background of Research
B. Statement of Problem
C. Objective and Significance of Research
D. Definition of Variables
E. Theoretical Background and Review of Related Literature
F. Research Method
    A. Approach and Type of Research
    B. Source of Data
    C. Data Collection Technique
    D. Data Analysis

Chapter II: Topic Discussion 1

A. Sub Theme 1
B. Sub Theme 2
C. Etc.

Chapter III: Topic Discussion 2

A. Sub Theme 1
B. Sub Theme 2
C. Etc.

Chapter IV: Topic Discussion 3

A. Sub Theme 1
B. Sub Theme 2
C. Etc.

Chapter V: Conclusion and Suggestion

A. Conclusion
B. Suggestion

References

Recommended Books for Library Research

The following lists of references are adapted from George (2008) which is very helpful as a guideline to work on research writing.[39] The books are divided into four types: books emphasizing library research, college writing, plagiarism and guide to documentation.

Books Emphasizing Library Research

Ballenger, Bruce. The Curious Researcher: A Guide to Writing Research Papers. 5th ed. New York: Pearson Longman, 2007.

Barzun, Jacques, and Henry F. Graff. The Modern Researcher. 6th ed. Belmont, CA: Thomson Wadsworth, 2004.

Booth, Wayne C., Gregory G. Colomb, and Joseph M. Williams. The Craft of Research. 3rd ed. Chicago: University of Chicago Press, 2008.

Kuhlthau, Carol Collier. Seeking Meaning: A Process Approach to Library and Information Services. 2nd ed. Westport, CT: Libraries Unlimited, 2004.

Lenburg, Jeff. The Facts on File Guide to Research. New York: Facts on File, 2005.

Mann, Thomas. The Oxford Guide to Library Research. 3rd ed. New York: Oxford University Press, 2005. Muth, Marcia F. Research and Writing: A Portable Guide. Boston: Bedford/St. Martin's, 2006. Quaratiello, Arlene Rodda. The College Student's Research Companion. 4th ed. New York: Neal-Schuman Publishers, 2007.

Stebbins, Leslie F. Student Guide to Research in the Digital Age: How to Locate and Evaluate Information Sources. Westport, CT: Libraries Unlimited, 2006.

Taylor, Terry, Joan Arth, Amy Solomon, and Naomi Williamson. 100% Information Literacy Success. Clifton Park, NY: Thomson Delmar Learning, 2007.

[39] George, *The Elements of Library Research*.

Books Emphasizing College Writing

These books all do a good job of explaining how sources work in an academic essay. Most of them also serve as reference tools because they cover grammar, usage, bibliographic styles, and related topics. Fowler, H. Ramsey, and Jane E. Aaron. The Little, Brown Handbook. 10th ed. New York: Pearson Longman, 2007.

Hacker, Diana. The Bedford Handbook. 7th ed. Boston: Bedford/ St. Martin's, 2006.

Harris, Muriel, and Jennifer Kunka. Prentice Hall Reference Guide. 7th ed. Upper Saddle River, NJ: Prentice Hall, 2008.

Harvey, Gordon. Writing with Sources: A Guide for Students. Indianapolis: Hackett Publishing, 1998. Palmquist, Mike. The Bedford Researcher. 2nd ed. Boston: Bedford/St. Martin's, 2006.

Spatt, Brenda. Writing from Sources. 7th ed. Boston: Bedford/St. Martin's, 2007.

Weidenborner, Stephen, Domenick Caruso, and Gary Parks. Writing Research Papers: A Guide to the Process. 7th ed. Boston: Bedford/St. Martin's, 2005.

Books about Plagiarism

These two books focus on plagiarism in an attempt to help researchers understand and avoid it. Lipson, Charles. Doing Honest Work in College: How to Prepare Citations, Avoid Plagiarism, and Achieve Real Academic Success. 2nd ed. Chicago: University of Chicago Press, 2008.

Posner, Richard A. The Little Book of Plagiarism. New York: Pantheon Books, 2007.

Guides to Documentation

These books detail the most common rules for formatting notes and bibliographies in college essays. They also provide copious examples.

The Chicago Manual of Style. 15th ed. Chicago: University of Chicago Press, 2003. (There is also a digital version of this guide, but libraries must pay a fee to license it for their users.)

Council of Science Editors. Style Manual Committee. Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers. 7th ed. Reston, VA: Council of Science Editors in cooperation with the Rockefeller University Press, 2006.

Gibaldi, Joseph. MLA Handbook for Writers of Research Papers. 6th ed. New York: Modern Language Association of America, 2003.

Hacker, Diana, and Barbara Fister. Research and Documentation in the Electronic Age. 4th ed. Boston: Bedford/St. Martin's, 2006. (The Web site http://www.dianahacker.com/resdoc/ is the electronic equivalent of this book, available without restrictions.)

Publication Manual of the American Psychological Association. 5th ed. Washington, DC: American Psychological Association, 2001.

Radford, Marie L., Susan B. Barnes, and Linda R. Barr. Web Research: Selecting, Evaluating, and Citing. 2nd ed. Boston: Pearson/Allyn and Bacon, 2006.

Turabian, Kate L. A Manual for Writers of Research Papers, Theses, and Dissertations: Chicago Style for Students and Researchers. Edited by Wayne C. Booth, Gregory G. Colomb, Joseph M. Williams, and University of Chicago Press editorial staff. 7th ed. Chicago: University of Chicago Press, 2007.

Walker, Janice R., and Todd W. Taylor. The Columbia Guide to Online Style. 2nd ed. New York: Columbia University Press, 2006.

Glossary of Library Research Terms

To conduct a library research or research in general, it is pivotal to be familiar with some technical terms. The following terms are provided to give a list of terms that are frequently found in conducting a library research. The terms are taken from books written by George (2008) on the elements of library research.[40]

[40] Ibid.

abstract.
The summary of a researcher's argument, approach, and conclusions. Abstracts are typically written by the author of a scholarly article or dissertation, and appear as a paragraph at the beginning of the source. Most databases provide the abstract, whether or not they also link to the full text of the source. Researchers often judge the relevance of a source based solely on its abstract. See also statistical abstract.

academic library.
The library that serves students, faculty, and staff of a college or university. It may be housed in a single building or in several campus locations. See also archives; branch library; research library; special collection; special library.

access.
Refers to the availability of sources. Researchers want access to information and specific sources, whether or not a library owns the actual item. A library can provide access to material it does not own by borrowing it, by obtaining a photocopy from another library, or by licensing a full-text database that includes the source. Advanced researchers may need to travel to libraries or archives to use materials on site. See also document delivery; interlibrary loan.

advanced search.
One method of keyword searching in an online catalog or article database. An advanced search screen usually provides multiple boxes where the researcher can enter terms and phrases, plus a way to connect those ideas. Also called a guided search. See also Boolean logic; connectors; logic.

annotated bibliography.
A list of sources that includes a brief summary of each, which may be descriptive, critical, or both. Faculty may request that students submit an annotated bibliography during the library research process as a way to tell what sources students have discovered and how they expect to use them. Scholars sometimes publish extensive annotated bibliographies on a topic, either as long journal articles or as whole books. See also abstract; review; survey article.

APA style. The documentation format recommended by the American Psychological Association and used in many social science disciplines. See the bibliography of this book for a complete citation. See also bibliographic style.

article database.
Any large group of articles whose descriptive records or full texts can be retrieved via the accompanying search feature. An article database may be multidisciplinary or specific to a discipline and is usually licensed to libraries for a fee by the company that creates and maintains it. Often called just a database. See also article; Boolean logic; database; hits; limiting.

bibliographic description.
The basic facts about a source—such as author, title, and year of publication— are expressed in a standard format and coded so that the item can be found via an online catalog or database search.
bibliographic style.
Any standardized format for citing the sources used in a research project. See also APA style; bibliography; Chicago style; CSE style; documentation; endnotes; footnotes; in-text citation; MLA style; Turabian.

bibliography.
A finding tool that lists the sources consulted or used by a researcher. The other major types of finding tools are catalogs and indexes. Also called works cited. See also APA style; Chicago style; CSE style; MLA style; Turabian.

browse
The activity of looking at adjacent books on the same shelf or articles within the same periodical. Browsing can also be done in many online catalogs and article indexes by skimming the titles, subject terms, tables of contents, or abstracts of items that appear in search results.

citation
A succinct description of a source, sufficient for another researcher to find it. Also called a reference.

data
The information expressed in numeric form. See also statistical abstract.

database.
An electronic finding tool that may include any combination of factual information, records describing sources, or digitized sources in their entirety. A database is usually searchable by keywords, descriptors, or

other characteristics such as date or language. See also article database; index.

Endnotes.
The documentation for each point in a researcher's argument, numbered and appears together at the end of the article, chapter, or volume. See also footnotes.

finding tool.
A reference work, whether electronic or print, that identifies sources about a field or topic. Examples of finding tools include catalogs, indexes, and bibliographies. Finding tools are one of the three major categories of reference works, the others being fact tools and hybrid tools. See also tertiary source.

Format.
The physical aspect of a tool or source. See also digital format; microform; print.

in-text citation.
The documentation format that inserts a brief parenthetical note into a sentence, with the complete citation given at the end of the essay. See also authordate citation; APA style; bibliographic style; Chicago style; CSE style; MLA style; Turabian.

keyword searching.
In online catalogs or article databases, the method of entering concepts using natural language to identify relevant sources. See also Boolean logic; concept searching; connectors; subject searching; truncation; Venn diagram.

research library.
A large library serving the needs of advanced students and scholars. Most research libraries are on university campuses, but there are national and public research libraries as well. See also academic library; special library.

research log.
A step-by-step account of the process of identifying, obtaining, and evaluating sources for a specific project. Similar to a lab notebook in an experimental setting.

search strategy.
multistep plan a researcher employs to identify sources.
Source.
(a) In general, a tangible object containing information of any sort in any format. (b) Any evidence a researcher uses to substantiate an argument. See also bibliographic style; documentation; endnotes; footnotes; primary source; secondary source; tertiary source; tool.

H. EXAMPLES OF LIBRARY RESEARCH JOURNAL

1. **Analyzing a figure's thoughts**

This study is conducted by Pelu (2004).[41]

Title	PANCADARMA TAMAN SISWA: A Philosophical Reflection of Ki Hajar Dewantara's Thought on The Perspective of Religious-Humanist Education
Author/Publisher	Musa Pelu Journal of History Education and Religious Studies (1) May 2004
Topic	This study aims to examine the concept of Pancadarma Taman Siswa as the philosophical thought of Ki Hajar Dewantara. The main question provoked in this study is about to what extent the concept of Pancadarma Taman Siswa can be categorized and developed as the basis of religious-humanist education. This analysis becomes important because the construction of contemporary education seems to be obsolete, thus, it should be reconstructed by considering the innovation on the practice of education based on the solid philosophical foundation. The idea of this research is to revive an educational concept that able put symmetrically the intellectual, emotional, and spiritual intelligence with the core of the 2013 Curriculum, which intent to organize education in an

[41] Musa Pelu, "PANCADARMA TAMAN SISWA: A Philosophical Reflection of Ki Hajar Dewantara's Thought on The Perspective of Religious-Humanist Education," *Journal of History Education and Religious Studies* 1, no. 1 (2004): 11–20.

	equal manner between cognitive, affective, and psychomotor
Background	The practice of contemporary education emphasizes the cognitive aspect rather than affective or psychomotor. Education also prioritizes the result of learning and only gives little attention to the process of learning. Consequently, fraudulence occurs in the evaluation of educational outcomes. On the other side, the appearances of moral decadency and violations in the society could be sensed as evidence that the practice of education in Indonesia is far away from the cultural values, humanism, and religiosity. This situation shows the fragility of the educational philosophy of this nation that tends to prioritize the result of the learning process based on behaviorism. The fragility of a philosophical foundation can result in the progress of the young generation of Indonesia. The concept and construct of education should be reformed to overcome the educational problems by paying attention to innovations based on a solid philosophical foundation. In this context, the 2013 Curriculum should be seen as the crystallization of an idea to rebuild the educational concept that puts intellectual, emotional, and spiritual intelligence in a symmetrical position. The concept is known as religious humanist education. The religious humanist education is the philosophical foundation of education developed by the father of Indonesian education, Ki Hajar Dewantara. Ki Hajar Dewantara developed education conception namely "Pancadarma Taman Siswa" which consists of five principles: the principle of independence, the principle of God's will, culture, nationality, and humanity. The author believes that this is a noble conception of Indonesian education as well as the essence of Indonesian character education.
Method and Data Analysis	This research used library research by using the documentary method to collect the data. The data were collected from books, manuscripts, or magazines from relevant resources. The research

	subject was the thought of Ki Hajar Dewantara about Pancadarma Taman Siswa. The research object was the thought of Ki Hajar Dewantara about the concept of Pancadarma Taman Siswa philosophically could be categorized and developed from the perspective of Religious-humanist education. The research procedure was to generate descriptive data in the form of written sources after a concrete analysis of a text is carried out. The research approach was descriptive analysis and philosophical approach. The descriptive analysis approach was used because it relates to the focus of research that emphasizes the points of thought and how that thought been socialized. Therefore, the type of data that was collected was the literature data that relevant and representative with the object of research. The descriptive analysis also can be defined as searching for facts, ideas, and thoughts through analysis, interpretation, and generalization of the findings of the research. The author also used a philosophical approach. According to Karl Jasper, who was cited by Sudarto in his book, The Methodology of Philosophical Research, it can be said that philosophy is the science that investigates and determines the deepest meaning of human reality. The philosophical science questions the investigated substance or object and puts that object to be understood entirely. The research analysis was carried out by the content analysis technique. Content analysis refers to a scientific analysis of a message inside of a communication. In this research, the analysis was focused on the meaning of Ki Hajar Dewantara's thought that later developed to the concept of religioushumanist education.
Findings	Ki Hajar Dewantara's thinking reflected in Pancadarma which is a characteristic of Taman Siswa education consisting of the principle of independence (paying attention to the potential and interests of each individual), the principle of natural nature (paying attention to the sunatullah), the principle of culture (the fruit of humanity based on

	the Trikon), the principle of nationality (prioritizing unity indifference), and the principle of humanity (upholding human dignity and dignity), can be categorized as a humanist education. 2. Ki Hajar's thoughts related to religious education can be seen from the concept of his educational goals which are reflected in the educational objectives of Taman Siswa namely building students into human beings who have faith and are devoted to God Almighty, independent physically and mentally, noble in mind, intelligent and skilled, and physically and mentally healthy to become independent members of society and responsible for the welfare of the nation, the motherland, and humans in general. 3. Thought education Ki Hajar Dewantara is very concerned about education that is humanist and religious. The purpose of the Taman Siswa education program, we interpret as the ideal human being desired by this nation, that is, humans who are physically and mentally healthy; intellectually, emotionally, and spiritually smart.

2. Literature review/review of previous studies

This section provides example of library research for literature review studies where the author provides a succinct review by collection and analyzing as well as organizing the previous studies. The following example is adapted from Suputra (2021).[42]

Title	Teaching English through Online Learning (A Literature Review)
Author/Publisher	Dwi Suputra The Art of Teaching English as a Foreign Language Vol.1 No.2 2021
Topic	The aim of this study is to investigate the teaching strategy to be implemented on teaching English through online learning. The design of the present study is a literature review design. Related studies

[42] Dwi Suputra, "Teaching English Through Online Learning (A Literature Review)," *The Art of Teaching English as a Foreign Language* 1, no. 2 (May 31, 2021): 65–70.

	about strategies on teaching English through online learning were analyzed in order to be described in present study.
Background	The implementation of English language teaching is affected by the learning environment. The term of learning environment traditionally refers to classroom, however, it has been developed into term of distance learning (Altunay, 2019). Distance learning is teaching and learning process where teacher and students' interactions are facilitated with electronic, mechanical or other device (Moore & Diehl, 2019). The origin of distance learning was started 1960s at the University of Tübingen (Moore & Diehl, 2019), and it has been evolved into online learning (Siemens et al., 2015). The evolution of distance learning into online learning has affected by the advancement of Information and Communication Technology (ICT). The origin nature of learning anytime and anywhere certainly lies on online learning. The materials given could be accessed through information and communication technologies (Anderson, 2008; Garrison & Anderson, 2003; Harasim, 2000). Teachers need to implement certain strategy to deliver English online course appropriately and attractively to students. If the way to deliver the course in online learning is appropriate and attractive to students, it would beneficial to motivate students to learn (Gonzalez & St. Louis, 2018). Therefore, this study aims at identifying strategies in teaching English through online learning.
Method and Data Analysis	The present study is literature review studies. Various studies related to online learning were analyzed to identify beneficial strategies to be implemented in teaching English through online learning. The studies were collected from online publishing studies and research. The main focus on the analysis was the effectiveness of using the strategies for English language learning through

	online learning, and additional information related to important points for implementing the strategies.
Findings	Videoconferencing Videoconference strategy provides face-to-face interaction of teacher-students and students-students (Rahayu, 2020), as the same in classroom interaction. Face-to-face interaction of videoconference is beneficial for the development of students' speaking skills. The findings by Loranc-Paszylk (2015) note that videoconferencing helped students developing speaking skills since it constructed oral interaction. Students are provided a model of spoken language by teachers. It would be opportunities for students to imitate and practice to speak. It is also noted in study by Fakhruddin (2018), where the students' speaking skills were comprehended through face-to-face interaction between students and teacher. When face-to-face interaction occurred between students and teacher, the students were enthusiastic to recite every sentence they heard. They subconsciously improve their speaking skills. 5 Instant Messaging Daily activity of using smartphone for sending instant message could be seen as opportunities in education. It is beneficial to implement instant messaging strategy to develop students' writing skills in online learning environment. A study by Ahmed (2019) found that written interactions occur in instant messaging strategy. The nature of instant messaging, which is to send written interaction, was utilized to exchange each student's writing. 5 Game The use of game in English Language Learning is beneficial to make students enjoy their learning. It is possible since game makes students attracted by its unique evaluation and feedback mechanism (Ma, 2018). The evaluation and feedback mechanism of game are interactively constructed with contextualized situation and challenging activity.

	5 Based on the finding and the discussion, teachers could use videoconferencing, instant messaging, and game as strategy to conduct their online learning. Each strategy has certain purposes to be implemented. Videoconferencing is useful if the learning focuses on oral communication, instant messaging is useful if the learning focuses on written communication, and game is useful if more enjoyable learning atmosphere wants to be created. It is highly recommended for teachers to implement the strategy based on students' capability on it.

3. **Example of content analysis**

This section provides example of content analysis study especially textual analysis. The study investigates an English textbook learned at senior high school students. The following example is adapted from Ariawan (2020).[43]

Title	Cultural Aspects Representation in English Textbook and Its Implication on English Language Learning
Author/Publisher	Soni Ariawan Journal of Advanced English Studies, Vol.3 No.1 2020
Topic	present study investigates cultural aspects representation in an English textbook prescribed for senior high school in Indonesia which is officially published by Ministry of Education and Culture in 2017. The study aims to explore cultural aspects revealed in the textbook by employing Byram's checklist of cultural dimensions and Cortazzi and Jin's categories of culture as the theoretical frameworks. The data for analysis is selected from the textbook which includes conversations, reading

[43] Soni Ariawan, "CULTURAL ASPECTS REPRESENTATION IN ENGLISH TEXTBOOK AND ITS IMPLICATION ON ENGLISH LANGUAGE LEARNING," *JOURNAL OF ADVANCED ENGLISH STUDIES* 3, no. 1 (February 29, 2020): 7–15.

	texts and visual elements. The inclusion of national identity is pivotal for learners since the textbook is prescribed for senior high school students who are tremendously curious to determine their own characters.
Background	Undeniable discourse dealing with language and culture has been raised recently. It is not about answering classical question, what come first; language or culture, which one is more general etc., however, it deals with learning English as a Foreign Language (EFL) as well as learning its culture. Some linguists believe that inserting native culture in EFL learning will foster authentic and comprehensive understanding for learners. However, this argument is followed by a critic on the balance of cultural content among local or source culture, target culture and international target culture. Despite the debate, to present cultural content and language learning materials, textbook is still considered significant and claimed as the ideal medium to present language and culture in foreign language teaching classroom (Alshumaimeri, 2015)
Method and Data Analysis	The study is categorised as content analysis in which research aims to identify meaning from a certain document, text or archive (Miles, Huberman, & Saldana, 2013). A broad-based definition dealing with content analysis is present in Krippendorf's (2004) text: It defines content analysis as a technique that aims for replicable and valid inferences from texts as to the contexts of their use. The texts in this study refer to conversations, reading passages, and visual images from an English as a foreign language textbook for grade 10 of senior high school in Indonesia. The study employs Cortazzi and Jin's (1999) theory on types of culture to investigate the categories of cultures. They proposed various types of cultures: Source culture Target culture

	International target culture (IC
Findings	Cultural representation in English textbooks in Indonesia is still vary in terms of which culture should be revealed. It really depends on the authors and the orientation of the textbooks. The literature review above reveals that some textbooks include more local or source culture in various forms such as popular destinations, buildings, popular people, foods etc. but other might more frequently disseminate target culture from USA, British, Canada, Australia or New Zealand. As suggested by several researchers that cultural aspects among source culture, target culture and international target culture should be proportionally disseminated in English textbooks in Indonesia.

I. SUMMARY

Qualitative research focuses on patterns formed from data of human actions and lived experiences. Qualitative study may also fall into several types including case study, ethnography, phenomenology, grounded theory and library research. Different types of qualitative research have different aims and procedures, yet have things in common in terms of data richness and thick description.

J. EXERCISE

1. What are main characteristics of qualitative research?
2. How to ensure the validity and reliability of qualitative research?
3. What are common types of qualitative research?

4. Explain the definition of library research.

5. Textual analysis is one of the types of library research. What kind of data sources can be explored in textual analysis?

6. Explain what are the primary and secondary data in the library research context?

7. Explain the definition of these three terms:

    a. in-text citation

b. research log
c. database
d. citation
e. advanced search
f. Bibliography

SUGGESTED READINGS

Basrowi, Suwandi. "Memahami Penelitian Kualitatif." *Jakarta: Rineka Cipta* 12, no. 1 (2008): 128–215.

Cohen, L., L. Manion, and K. Morrison. *Research Methods in Education*. Taylor & Francis, 2017. https://books.google.co.id/books?id=iaQ5DwAAQBAJ.

Creswell, John W, and J David Creswell. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage publications, 2017.

Creswell, J.W. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Pearson, 2015. https://books.google.co.id/books?id=5pYEngEACAAJ.

Creswell, J.W., and J.D. Creswell. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications, 2017. https://books.google.co.id/books?id=335ZDwAAQBAJ.

Elmer E. Rasmuson Library. "Library Research Process." Last modified 2020. Accessed January 31, 2021. https://library.uaf.edu/ls101-research-process.

UNIT 3: QUANTITATIVE RESEARCH

A. INTRODUCTION

In this unit, you will be acquainted with the term quantitative research more deeply and be familiarized with several typical research designs associated with it. Understanding the assumptions and theoretical backgrounds for quantitative research is truly important before it can be put into practice. Despite numerous types of research designs within quantitative paradigm, this unit limits the discussions to three typical research methods under quantitative approach entailing descriptive quantitative research, experimental and correlational research design. Such designs are quite ubiquitous in the quantitative paradigm and the explanation is expected to be sufficient for novice researchers.

B. LEARNING OBJECTIVES

2

By the end of this unit, you should be able to:

- Identify the main assumptions for quantitative research
- Describe different methodologies for doing quantitative research
- Select the most appropriate research design under quantitative paradigm
- Determine data collection procedure for quantitative research
- Describe how data analysis is executed in quantitative research tradition
- Interpret the results of data analysis

C. QUANTITATIVE RESEARCH PARADIGM

Before discussing the paradigms underpinning quantitative research, it is worthy of attention to recall what quantitative research means first. Referring back to the previous chapter, as it is composed from the lexis 're+search', research is always carried out based on the pre-existing knowledge or previously undertaken research since somehow it needs to be studied again due to the emerging research gaps or other compelling reasons. Research can also broadly fall into either explanatory or confirmatory research. The former enacts the

idea of doing investigation on the basic of the absence of clear theoretical foundation of phenomena under study, while the latter entails testing the existing theoretical framework or generated model by collecting and analysing the data needed. Quantitative research is most often used in explanatory inquiries on association, correlation and relationships. In the context of quantitative research, research is aimed to achieve objectivity, control, and accurate measurement.[44] These techniques are deductive in nature, with the goal of rejecting or accumulating evidence in support of certain ideas and hypotheses. By definition, quantitative research has a great deal with the explanation of phenomena by using numerical data through mathematical methods.[45] Any research, be it quantitative or qualitative, begins from a phenomenon that requires explanations such as what factors contribute to students' speaking achievement or what makes students highly motivated to learn a foreign language. However, when it comes to quantitative research, the main trait is the numerical data which are gathered and analysed through statistical or mathematical methods. Nonetheless, it is rare to find naturally occurring quantitative data and to overcome this issue, one might transform qualitative data into number by means of quantitative research instruments or tests. Take for example, data on students' motivation, beliefs, satisfaction are not naturally available in numbers, thus we can design a questionnaire on these constructs and assign the students to rate their own using four-point Likert scale (strongly agree, agree, disagree, strongly disagree).

Quantitative research is ubiquitously believed to be grounded on realism or positivism as opposed to subjectivism in qualitative research. Positivists believe that science uncovers an already existent reality. 'The truth is out there,' and it is the researcher's responsibility to find it using objective research methods. This requires the researcher to be as detached from the study as feasible, as well as the adoption of procedures that maximize objectivity while minimizing

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[44] P. Leavy, *Research Design: Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches*, Research methods (Guilford Publications, 2017), https://books.google.co.id/books?id=PRyDDgAAQBAJ.

[45] Daniel Muijs, "Introduction to Quantitative Research," *Doing quantitative research in education with SPSS* (2004): 1–12.

the researcher's participation in the research.[46] However, attributing quantitative research to positivist view has nowadays been inaccurate as new perspectives such as post positivism, experiential realism and pragmatist approach have evolved and illuminated contemporary research sphere. Post positivism, for example believes that the observation about the world cannot be totally undertaken objectively as an outsider and compromises that natural science cannot account for all social research. Despite this, post positivists still believe that there is objective reality and it is the duty of researchers to approximate the reality as best as they can while taking into account the role of their subjectivity in shaping the reality. In other words, post positivists rely much on how confidence they are about their findings. In a similar vein, experiential realists divide reality into two major aspects entailing interactions between subjects (the people, the actors) and objects (the things, edges, shapes, textures). They also believe that perceptions influence the way we see and experience objects. The last new paradigm which many educators take is the pragmatist approach, posing the idea of using quantitative or qualitative methods which highly depends on the research questions. If the answer to these questions requires qualitative methods, they will opt to focus on the qualitative one, otherwise they might choose quantitative methods when the research questions desire answers that can be achieved by quantitative methods. Despite these two, there is also a possibility of using mixed-method research.

D. DECIDING TO USE QUANTITATIVE METHODS

Choosing to employ quantitative research methods requires careful examinations of the typical answers or data the research will likely collect. Here are several considerations before an appropriate decision can be made about using quantitative methods. Inform your readers why your research topic is important and timely.

1. Choose quantitative methods when quantitative answer is desired. For example, questions like how many students participated in the exam or how many English teachers support the ideas of using blended learning.

[46] Ibid.

2. Quantitative methods are appropriate when investigating numerical trend. For instance, the fall and drop of students' numbers, the growth of students' achievement in writing and the like.
3. Quantitative methods can be used to explain phenomena by expounding the predicting or related factors contributing to a phenomenon. For instance, the factors that predict students' achievement in IELTS or TOEFL exam.
4. When testing hypothesis, quantitative methods work the best. Measuring relationships between variables or investigating causal relationships are typical examples of research with hypothesis. The hypothesis is developed based on theory and is tested using quantitative methods.

Population and Samples

In this subsection, you should provide information about the description of number and the background of your research population as well as samples. You also need to highlight how you select the samples whether you use random or non-random sampling. The following are some of major sampling techniques used for quantitative research:

1. Simple random sampling
2. Stratified random sampling
3. Cluster sampling
4. Systematic sampling
5. Convenience sampling
6. Quota sampling
7. Purposive sampling

E. EXPERIMENTAL RESEARCH

Experimental research is strongly associated with quantitative paradigm and is the earliest type of quantitative research.[47] In an experiment, a concept (or a practice or a process serving as an independent variable) is tested to see if it has an effect on a dependent

[47] Leavy, *Research Design: Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches*.

variable or an outcome. This is carried out by choosing an idea to "experiment" with, assigning people to experience it (and some people to experience something else), and then seeing if those who encountered the concept (or practice, or process) performed better on some result than those who did not.[48] In other words, Researchers purposefully manipulate one or more variables (independent variables) in experimental investigations to assess the influence on another variable (dependent variable). The researcher's objective is to discover whether there is a causal link between the manipulation and the outcome. In English Language Teaching context, experimental research typically answers questions regarding the effects of certain instructional methods/strategies/techniques or media on the students' achievement, attitude, or others. For instance, an English teacher set up an experiment to see whether teaching reading using think-aloud strategy has considerable effects on reading comprehension skill. She administered a pre-test to two groups (One is assigned as the experimental group and the other one as the control group) of students then taught the students in the experimental group using the strategy in a month while keeping the control group intact or as it was. Once the planned instruction was completed, she administered a post-test to both groups to examine whether there was a difference between the students' performance in these two groups in reading. Here is the key process in doing experimental research:

Step 1. Decide if an Experiment Addresses Your Research Problem
Step 2. Form Hypotheses to Test Cause-and-Effect Relationships
Step 3. Select Study Participants
Step 4. Select an Experimental Treatment
Step 5. Choose a Type of Experimental Design
Step 6. Conduct the Experiment and collect the data
Step 7. Organize and Analyse the Data
Step 8. Develop an Experimental Research Report

[48] Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*.

As for quantitative research, there are various types of variables you should clarify in your research. In experimental research, for instance, you will likely use two types of variables: Independent and dependent variable. The former designates the manipulated variable (input) that affects another variable, while the latter entails any variable being affected by the independent one (output). However, these two types of variables are not used in other types of quantitative research. Therefore, you may opt out to use first and second variable or other nomenclatures for variable such as predictor & criterion variables or X & Y variable.

It is important to note that one of the key elements of experimental research is the control over variables. When conducting an experiment, we aim to keep the setting as controlled as possible and focus solely on the factors we want to investigate.[49] In our case, you have to ensure that both groups have the same personal abilities and test environment, and we ask both groups the identical questions. Except for the variation in forms of teaching, we control for all variables that may impact the outcome. In more details, Creswell outlines six experimental research characteristics as follows:[50]

- Random assignment

  In an experiment, random assignment refers to the process of randomly allocating people to groups or various groups. A rigorous, "real" experiment is distinguished from a sufficient but less-than-rigorous "quasi experiment" by the random assignment of people to groups (or conditions within a group).

- Control over extraneous variables

  When an experiment restricts extraneous factors that may impact the link between the new practice and the outcome, it is said to have control. Any variables in the participant selection, techniques, statistics, or design that are likely to affect the outcome and give a different explanation for our results than what we expected are referred to as extraneous factors.

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[49] Muijs, "Introduction to Quantitative Research."
[50] Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*.

- Manipulation of the treatment conditions

  After the participants have been chosen, they are allocated to one of either treatment or experimental group. In experimental treatment, the researcher physically intervenes to change the experimental unit's circumstances.

- Outcome measures

  In an experiment, the treatment condition is assessed to determine whether it influences the dependent variable or the outcome. Here is an illustration of how a control and experimental group is compared in a study addressing the impact of

- Group comparisons

  Scores for different treatments on an outcome are compared in an experiment. A researcher obtains scores for individuals or groups on the dependent variable and compares the means and variation both within and between the groups in a group comparison.

- Threats to validity

  Threats to validity refer to particular reasons why we could be mistaken when making an inference in an experiment due to covariance, causation structures, or if the causal link remains true across people, settings, treatments, and outcomes. Here are several threats to validity:

  ✓ *History*

  Time passes between the start and finish of the experiment, and events may occur between the pretest and posttest that affect the conclusion.

  ✓ *Maturation*

  Individuals grow or change during the experiment (i.e., they become more mature). These changes may impact their results between the pre-test and post-test as they get older, smarter, stronger, and more experienced.

  ✓ *Selection*

  Selection bias can introduce risks that affect the result, such as picking individuals for the experimental group who are brighter, more responsive to a treatment, or more experienced with a treatment.

✓ *Mortality*

Drawing inferences from scores may be challenging when participants drop out during the experiment for a variety of reasons (e.g., time, interest, money, friends, or parents who do not want them to participate in an experiment). On the outcome measure, researchers must pick a large sample and compare those who drop out with those who stay in the trial.

✓ *Diffusion*

When the experimental and control groups are able to interact with one another, the control group may gain knowledge about the treatment from the experimental group, jeopardizing internal validity.

✓ *Statistical regression*

When researchers put people together based on extreme scores, the post-test will almost always be better (or worse) than the pre-test, regardless of the intervention.

✓ *Testing*

Participants may grow familiar with the outcome measures and recall replies for further testing, which might compromise internal validity. To address this issue, experimental researchers take fewer measurements of the outcome and use different items on the post-test than they did during the initial testing.

✓ *Instrumentation*

The instrument may alter between the administration of a pre-test and a post-test, posing a risk to the experiment's internal validity. Standardize methods such that you use the same observational scales or equipment throughout the investigation to avoid this possible issue.

✓ *Resentful demoralization of control group*

When a control group is employed, members in this group may feel angry and discouraged because they believe they are being treated unfairly in comparison to other groups.

By and large, experimental research falls into two broad categories: between-group (two or more groups involve) and within-group (single group) designs.

1. **Between-Group (Control and experimental group)**
   - True experimental design
   - Quasi-experimental design

- Factorial design

2. Within-group (Single group)

- Time-series
- Repeated measures
- Single subject

The between-group type can be undertaken using either true or quasi experimental design. In **true experiments**, the researcher RANDOMLY assigns participants to different conditions of the experimental variable. Individuals in the experimental group receive the experimental treatment, whereas those in the control group do not. On the other hand, **quasi-experiments** include assignment, but NOT RANDOM assignment of participants to groups. This is because the experimenter cannot artificially create groups for the experiment.

Pretest-posttest control-group design

The dependent variable, O, is pretested on a group of study participants who are randomly allocated to experimental and control groups. The independent variable, X, is then delivered, followed by a post-test on the dependent variable, O, for both the experimental and control groups. The basic pretest-posttest control-group design, as shown in the Figure below, is a two-group design with one control and one experimental group. Experimental group can be designed to be more than one group with different experimental treatment.

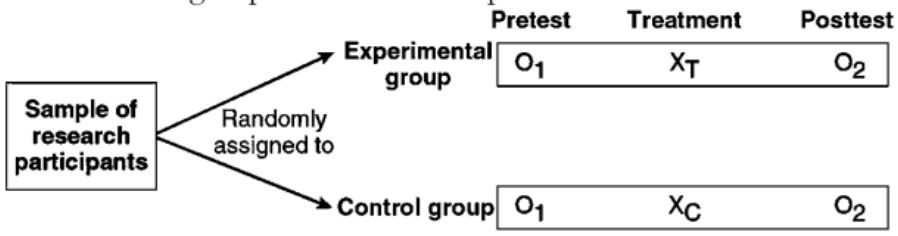


Figure 7 Pretest-posttest control-group design

Post-test-only control-group design

The post-test-only control-group design, as shown in the diagram, is an experimental design in which study participants are allocated to one of two groups: experimental or control. The experimental and control groups are assessed on the dependent variable after the independent variable has been delivered. The experimental and control groups'

posttest results are compared statistically to see if the independent variable had an effect.

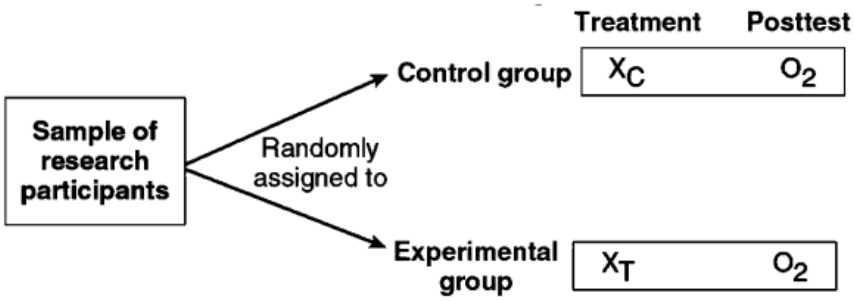


Figure 8 Posttest-only control-group design

Factorial design

A factorial design is a powerful experimental design in which two or more independent variables are examined simultaneously to identify their independent and interaction effects on the dependent variable, at least one of which is changed. You have one independent variable—method of instruction—and three levels of that independent variable—the three forms of instruction—to consider while planning this research. The pretest-posttest control-group design or the posttest-only control-group design might be employed because there is only one independent variable. The design chosen would be determined by whether or not a pretest was included.

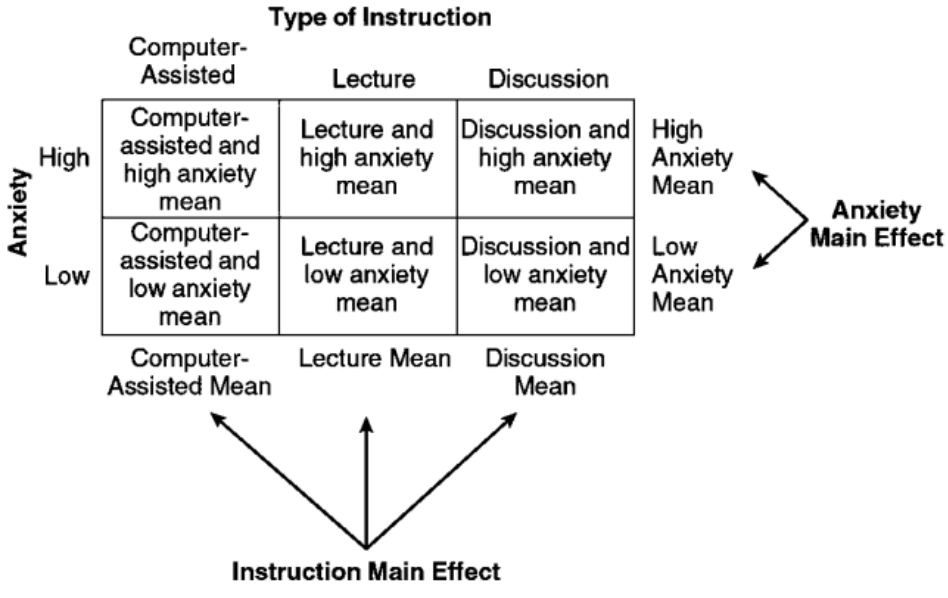


Figure 9 Factorial Design

A time series design is a useful experimental strategy when an experimental researcher has access to only one group and can study them throughout time. A time series design involves the researcher examining one group across time using several pre-test and post-test measurements or observations. There are two versions of this design:

The interrupted time series design involves examining one group for a length of time, collecting multiple pre-test measurements, giving an intervention (or interrupting activities), and then evaluating results (or post-tests) several times.

Figure 10 The interrupted time series design

The researcher alternates a treatment with a post-test measure in **equivalent time series design**. The data analysis is then to compare post-test measurements or plot them to see if there are any trends in the data over time.

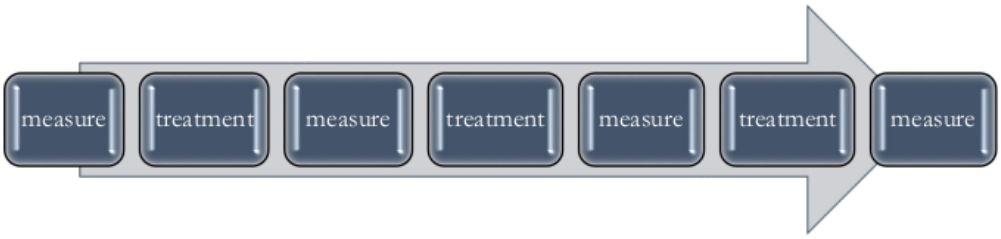
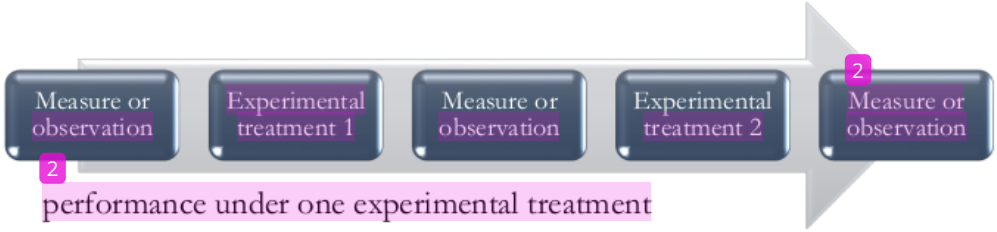


Figure 11 The equivalent time series design

On the other hand, all individuals in a single group participate in all experimental treatments in a **repeated measures design**, with each group acting as its own control. A group's performance under one experimental treatment



is compared to its performance under another experimental treatment by the researcher.

Figure 12 Repeated Measures design

Table 1 Types of Experimental Research Design[51]

	True experiment	**Quasi experiment**	**Factorial design**	**Time series**	**Repeated measures**	**Single Subject**
Random assignment?	Yes	No	May be used	No	No	No
Number of groups/ individuals compared?	Two or more	Two or more	Two or more	One group	One group	One individual studied at a time
Number of interventions used?	One or more	One or more	Two or more	One or more	Two or more	One or more
Number of times the dependent variables measured/	Once	Once	Once	After each intervention	After each intervention	Multiple points

[51] Ibid.

observed?						
Controls typically used?	Pretest, matching, blocking, covariates	Pretest, matching, blocking, covariates	Pretest, matching, blocking, covariates	Group becomes its own controls	covariates	Individuals become their own control

T-Test

The T-test is a statistical test that compares two means. It is classified as parametric statistics. The T-test is used in the following situations:

- The information is in the form of a ratio or an interval (continuous)
- There is just one dependent variable in the data.
- The population standard deviation is unknown.

T-test might fall into three types:

- ❑ Single sample T-test
- ❑ Independent samples T-test
- ❑ Paired samples T-test

Independent Samples T-Test is used to compare means between two independent (e.g experimental & control) groups under the assumption that the standard deviation of the population is unknown. The following formula is commonly used for this kind of test.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 1}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

Where

- ❑ $\bar{x}_1$= mean of group 1
- ❑ $\bar{x}_2$= mean of group 2
- ❑ S_1^2= variance of group 1
- ❑ S_2^2= variance of group 2

n1= number of people in group 1

n_2= number of people in group 2

A high school teacher is curious to see the effect of songs on students' vocabulary. He teaches one of his vocabulary classes using songs, but has his other vocabulary class taught without songs. Here are the posttest scores after the treatment.

With Songs (Experimental Group)

86 95 97 98 53 84 91 64

97 97 97 84 64 94 73

Without Songs (Control Group)

70 92 97 50 81 97 84 61

98 98 58 23 69 84 91 78

At the 0.05 level, test the claim that there is a significant difference between the vocabulary of students who are taught with songs and those who are not. Paired samples t-test, on the other hand, is used to compare means of a single group (e.g. Comparing means of pretest and posttest results administered to a group). The degree of freedom is for this kind of test is n-1.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{\sum d^2 - \frac{(\sum d)^2}{n}}{n(n-1)}}}$$

Where

$\bar{x}_1$ = mean of group 1 d = deviation (x-$\bar{x}$)

$\bar{x}_2$ = mean of group 2 n = number of people in group

F. CORRELATIONAL RESEARCH

Correlational studies are studies in which the researcher attempts to explain or predict the link or association between variables. To generate a correlation coefficient, this relationship is computed using statistical procedures (r). Positive, negative, or no connection is indicated by the correlation coefficient. Correlational research is divided into two major types as follows:

1. Purposes:

Explanatory

Explanatory research is a correlational design in which the researcher is interested in the extent to which two (or more) variables co-vary, where changes in one variable are mirrored in changes in the other. A

simple connection between two variables (e.g., sense of humor and drama performance) or more than two variables (e.g., sense of humor and drama performance) is used in explanatory designs (e.g., pressure from friends or feelings of isolation that contribute to binge drinking).

Prediction (regression)

Researchers use specific characteristics as predictors in a prediction design to try to predict outcomes. Superintendents and principals, for example, must select instructors who will be successful in their respective schools. Administrators might use correlational research to discover predictors of performance in order to choose instructors who have a strong probability of succeeding. As a result, prediction studies are beneficial since they aid in anticipating or forecasting future behavior.

2. Number of variables

Bivariate

Bivariate correlation is a statistical approach for determining whether or not there are any connections between two variables (i.e., X and Y). It depicts how X will vary in response to a change in Y. It investigates the notion of a relationship between two variables, as well as whether or not there is an association and how strong that association is. Table of common statistical correlation for bivariate correlation[52]

[52] Giuseppe Perinetti, "StaTips Part VI: Bivariate Correlation," *South European Journal of Orthodontics and Dentofacial Research* 6 (May 2019): 2–5.

Type of data of the 2 variables	Normal distribution and homoscedasticity	Relationship	Correlation coefficient
Both continuous	Required	Linear	Pearson (r)
Both continuous	Not required	Linear or not linear	Kendall (tau) or Spearman (rho)
Both or at least 1 ordinal	Not required (for the eventually present continuosus data set)	Monotomic (linear or not linear)	
One continuous and the other naturally dichotomous	Required (for the continuous variable data set)	-	Point biserial (r_{pb})
One continuous and the other dichotomous but underling a continuity between categories	Required (for the continuous variable data set)	-	Biserial (r_b)

Pearson Product Moment (r)

In research, one of the most ubiquitous ways of calculating correlation coefficient between two continuous variables is Pearson product moment (r). This test statistic aims to find out whether high score in one variable is associated with high score in the other variable.

$$r = \frac{\Sigma^{n}_{i-1} (X_i - \bar{X})(Y_i - \bar{Y})}{(n-1)S_x S_y}$$

where:

■ Xi and Yi are individual observations (e.g. the grade of a child in English (Xi) and the grade of the same child in maths (Yi));

■X– and Y are the means for variables X and Y (e.g. the mean grades in English and maths);

■ N is the number of cases; and

■ Sx and Sy are the standard deviations of the two variables (English and maths) respectively

The result of Pearson product moment provides information in terms of direction and the strength of the correlation/association. The correlation coefficient might be either positive or negative. Positive correlation indicates that high score on X means high score on Y and

Negative correlation indicating high score on X means low score on Y. The value of this coefficient also varies between 0-1(Positive or negative). The closer the coefficient value to 1, the stronger the relationship and vice versa.

Spearman's Rho

Unlike Pearson product moment, Spearman's rho calculates correlation coefficient from two ordinal variables. To use Spearman 'rho, the actual data should be transformed into rank first. Take, for example, we want to measure the correlation between students' motivation (based on data of questionnaire of five-point Likert scale) and their English proficiency (also measured using five-point Likert scale). A good example of using Spearman correlation if from the study carried out by Hasiloglu & Kunduraci.[53] Their study aims to examine the correlation between fourth graders' attitudes and behaviors toward the environment. The data for students' behavior was collected through 31-item Attitudes Toward the Environment Scale (ATES), while to measure the students' behavior towards the environment, they use video recording evaluation scales. Here are the data for this study.

Students	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
Scores received on the ATES	77	79	74	74	79	75	74	79	75	74	69	77	76	75	77
Scores received on the video recording evaluation scale	2	3	3	3	3	3	3	4	0	0	3	1	2	2	2

These data are analyzed using Spearman correlation in the SPSS and the result of the analysis is shown below.

[53] Mehmet Akif Hasiloglu and Ayse Kunduraci, "A Research Study on Identifying the Correlation between Fourth Graders' Attitudes and Behaviors toward the Environment.," *International Education Studies* 11, no. 6 (2018): 60–65.

			Attitude	Behavior
Spearman's rho	Attitude	Correlation Coefficient	1.000	.075
		Sig. (2-tailed).		.791
		N	15	15
	behavior	Correlation Coefficient	.075	1.000
		Sig. (2-tailed)	.791	
		N	15	15

This table shows that Sig.(2-tailed)=0.791.. This result is greater than 0.05, suggesting that there is no significant association between students' attitude scale scores and their observed environmental awareness behaviors. The Spearman's rho (r) value was discovered to be 0.075. "Between 0 and 0.5, suggesting a weak or no association," according to this number.

G. SURVEY STUDY

A survey design examines a sample of a population to offer a quantitative description of trends, attitudes, and views, or to test for correlations among variables in that group.[54] Survey study has several characteristics as outlined by Cohen et al[55]. It represents a large target population and creates numerical data; offers descriptive, inferential, and explanatory information; collects data in a single shot, making it cost-effective and efficient; manipulates important elements and variables to generate frequencies (for example, the numbers indicating a specific opinion or test score). collects standardized data (i.e., all participants use the same equipment and questions); determines correlations (for example, to see if there is a link between gender and test results); collects data from multiple-choice, closed questions, exam scores, or observation schedules; provides material that is uncluttered by unique contextual variables; supports or refutes assumptions about the target population; develop accurate instruments via piloting and revision; generalizes about and examines patterns of response in the focal targets; collects data that can be statistically analysed; utilizes

[54] John W Creswell and J David Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (Sage publications, 2017).

[55] L. Cohen, L. Manion, and K. Morrison, *Research Methods in Education* (Taylor & Francis, 2017), https://books.google.co.id/books?id=iaQ5DwAAQBAJ.

large-scale data acquired from a broad population to allow generalizations about certain factors or characteristics.

Survey research has to date fallen into two major categories: Cross-sectional and longitudinal. The former represents that at one moment in time, the researcher collects data. This approach offers the benefit of monitoring existing attitudes or behaviors while also providing information in a short period of time, such as the time necessary to deliver the survey and collect the data.[56] On the other hand, a longitudinal survey study investigates changes of trends or groups or individuals over time.

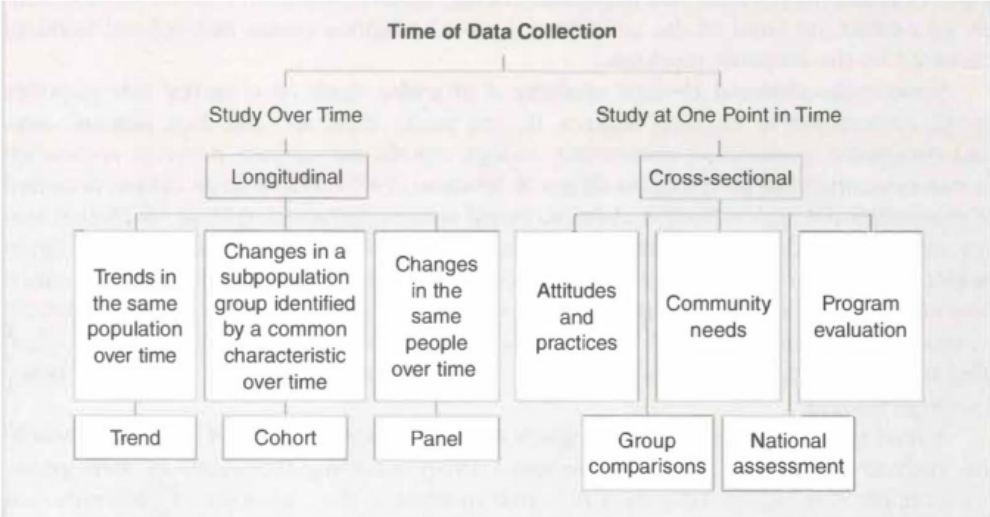


Figure 13 Longitudinal vs Cross Sectional Survey[57]

Despite the fact that there are many distinct types of surveys, survey researchers generally gather data using two fundamental methods: questionnaires and interviews. A questionnaire is a form that participants in a study fill out and return to the researcher as part of a survey design. The participant selects responses to questions and provides basic demographic and personal information. An interview survey, on the other hand, is a form on which the researcher notes the

[56] Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*.
[57] Ibid.

responses provided by the study participant. The researcher uses an interview guide to pose a question, listens for replies or observes behaviour, then notes responses on the survey.

H. SUMMARY

This part is strongly pertinent to the approach and type of research. It is a further description of the research type you choose. The examples of research design is as follows.

Correlation	Bivariate Correlation Regression Multiple Correlation Multiple Regression Canonical Regression Discriminant Analysis Factor Analysis Path Analysis
Quasi experimental	Non-equivalent Control Group Design: • One-Group Posttest-Only Design • Posttest-Only Design with Non-equivalent Comparison Groups Design • One-Group Pretest-Posttest Design • Two-Group Pretest-Posttest Design Using an Untreated Control Group Time Series Design
True experimental research	Posttest Only Control Group Design Pretest-posttest control group design Solomon four-group design

Pre experimental research	One shot case study Research design One Group Pretest-Posttest design Static Group Comparison
Descriptive research	Survey research design

When the describing the research design, you are often strongly encouraged to display a chart or visual illustration to help your readers figure out how your research will turn out.

I. EXERCISE

Reflect upon your learning and answer the following questions.

1. What are the main different paradigms between qualitative and quantitative study?
2. Experimental research is known to have strict control over variables. What does an experimental research study commonly control?
3. What are the threats to experimental research validity?
4. What is experimental research? Explain
5. What are the kinds of experimental research designs?
6. What is correlational research?
7. What are the kinds of correlational research designs?
8. Define survey research and its characteristics.

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UNIT 5: ACTION RESEARCH

A. INTRODUCTION

Several research methods are developed on the basis of real problems in educational settings or problems related to the need for improved teaching and learning practice. Action research is basically originated from the work of social scientists who carry out an action to overcome social problems in the context of education, action research is intended to improve teaching practice and is deeply characterized by teachers' personal reflections upon their teaching practices. Action research may use a variety of techniques in data collection including qualitative and quantitative methods.

B. LEARNING OBJECTIVES

By the end of this unit, you should be able to:

- define action research
- identify steps in doing action research
- identify several models for educational action research
- plan action research for a given topic
- evaluate action research

C. ACTION RESEARCH IN EDUCATION

Action research tries to solve a problem by addressing a specific, practical issue.[58] As a result, action research designs are systematic techniques used by teachers (or other professionals in an educational context) to collect information about and improve the ways their particular educational setting, their teaching, and their student learning. Action research is aimed at changing things and leads to improvement. It is a process in which educators examine their own practice systematically and carefully using the techniques of research. Classroom action research begins with a question or questions about classroom experiences, issues, or challenges. It is a reflective process that

[58] Ibid.

helps teachers to explore and examine aspects of teaching and learning and to take action to change and improve.

It helps you to:

1. broaden your knowledge of teaching and learning
2. improve your teaching abilities and expertise
3. experiment with new ways and ideas
4. cultivate contemplative practice
5. help students learn more.

The four phases of classroom action research are broken down into a cycle. According to Kemmis and Taggart, research begins with action planning. The strategy is then put into effect in the classroom, and the action is monitored. The analysis of the data collected during the activity, as reflected in the reflections. Action research may fall into two types: practical and participatory action research. In practical action research, teachers look for ways to improve their students' learning and their own professional performance by doing research in their own classrooms. Action research is conducted by groups of teachers, students, counselors, and administrators to address common challenges.[59] On the other hand, rather than focusing on individual instructors handling immediate classroom difficulties or schools addressing internal concerns, PAR (Participatory Action Research) emphasizes research that contributes to societal emancipation or change. This kind of action research is usually aimed at community service. In addition to these, action research is also characterized by the following:

- A practical focus
- The educator-researcher's own practices
- Collaboration
- A dynamic process

- A plan of action
- Sharing research

[59] Ibid.

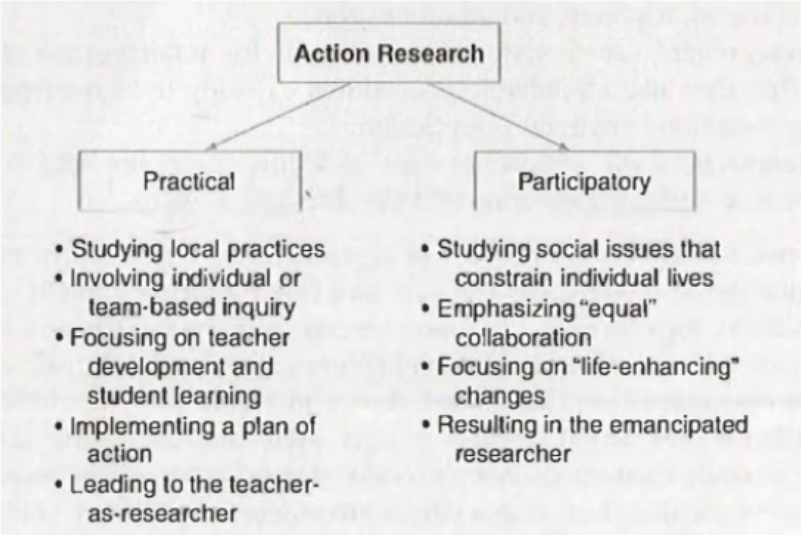

Figure 14 Types of Action Research[60]

D. KEY STAGES IN ACTION RESEARCH

1. Identify problems to study

   The core foundation of action research is problems encountered in the community or school that need solutions.

2. Locate resources to address the problems

   Resources can refer to references or advice from informed colleagues about how to tackle the identified problems. Helps from collagues who have experiences in conducting action research can also be a good resource.

3. Identify the needed information

   This stage is characterized by data collection through a variety of data collection techniques.

4. Implement the data collection

   This stage can be carried out through

   - experiencing: Participant observation, field notes
   - enquiring/eliciting: Interview, questionnaire, standardized test
   - examining: archive, journals, artifacts, audio/video record.

[60] Ibid.

5. Analyze the data

Data analysis can be done through descriptive statistics and data interpretation. When necessary, comparison between group data can be carried out and linking between variables.

6. Plan an action

Plan for action may take the form of alternative approaches to address the problems and can be stated in an informal or formal statement in the form of an outline.

7. Implement the plan and reflect

The implementation of the action plan is intended to see whether there is a difference or whether it has an impact.

E. MODELS OF ACTION RESEARCH REPORT

Background of Research

The researcher must be able to articulate the rationale for doing the research in this part. The backdrop may be written in two ways: using the problem approach or without using the problem method. Not all research is conducted with the goal of solving a problem. Problems might also take the shape of open-ended research questions that need to be answered. In the background section, the researcher must explain his or her stance based on past studies' analyses that are relevant to the research to be conducted. This is to demonstrate the current state of his study. The researcher must additionally describe the research's originality in the context.

The researcher explains the facts regarding the phenomena or topic being examined in this part. Facts give preliminary knowledge in the form of assumptions about the issues. During the early research stage, facts are extracted from the occurrences that occur. The researcher then discovered a more particular issue that had happened at the research location. As a result, this first description gives an overview of the gap that exists in the area between the ideal (desired) and real (undesirable) circumstances, as well as the consequences of these gaps. Various options or methods to fill the gaps are given, followed by the identification of supporting factors and supporting factors. Gaps in the study might be related to past research or theoretical notions that support the problem's conclusions, therefore this part demonstrates the disparities between the

research done and the research that has been done. In the end, though, the researcher argued for the relevance of the subject under investigation. In brief, the research backdrop includes a description of the topic to be examined, as well as problem resolution based on the problem's emphasis and relation to past study.

Subject of Action

Following a description of the topic's history, the researcher discusses the study subject's constraints in relation to the problem, research activity, and research setting. The researcher defines the study emphasis in this part, which is provided as a solution or alternative issue addressed in the form of a statement.

The Statement of Problem

The problem is stated concisely, succinctly, clearly, and in the form of an interrogative phrase. The core features of a study are interpreted as research questions. The research problem is meant to draw attention to the issues raised in the context and topic of activity. In Classroom Action, the research problem is formulated. At the very least, research should include two aspects: (1) the action process and (2) the result of the action process as a problem solution. Consider the following scenarios:

1. How are students' 21st century skills (Critical thinking, Collaboration, Communication, and Creativity) improved through a collaborative learning environment?
2. What are the results of implementing a collaborative learning environment on the improvement of students' 21st century skills ?

The objective of Research

The research aim identifies particular goals that are connected to the study. It can refer to a new fact, an occurrence, a process, or phenomena, as well as the testing of new scientific methods, concepts, and theories targeted at solving and comprehending scientific and non-scientific issues, as well as finding answers to problems that arise. The researcher outlines the goals of applying the methodology, strategy, or method of learning, as well as the media of learning, to address the English learning problem in this part, and the formulation should be consistent with the problem formulation. The definition of the development goal in this

situation is aimed at obtaining the predicted ideal circumstances as mentioned in the research backdrop.

Specification of Research

The researcher outlines the notion of the action model used in conducting the study in this part. The notion of action gives the researcher guidelines to follow. Researchers can utilize a variety of action models, such as:

1. Kemmis & McTaggart's Model [61];

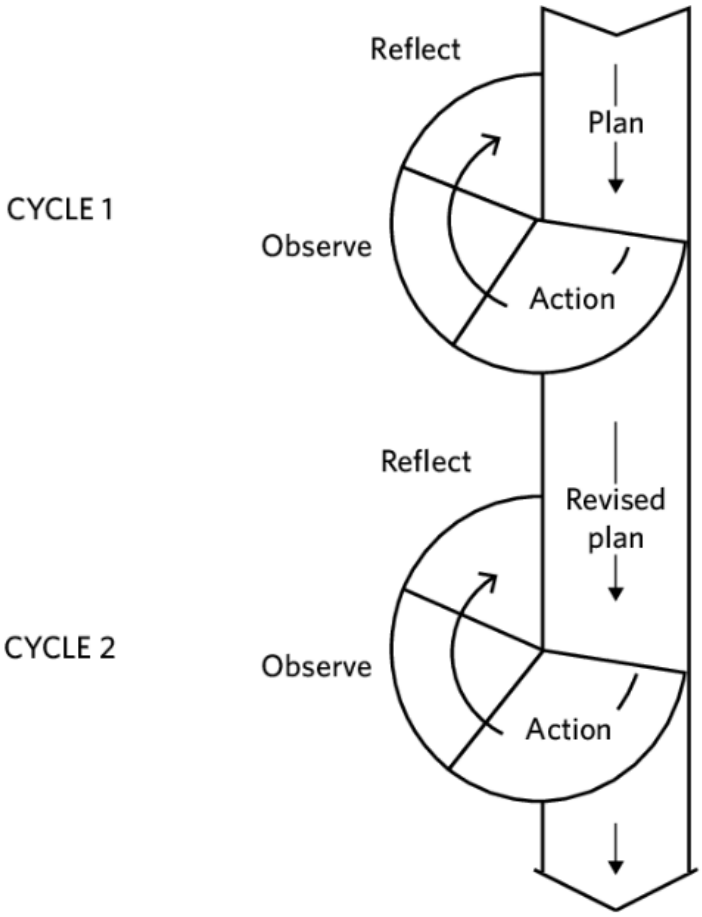

Figure 15 Kemmis & McTaggart Model

2. Model O'Leary[62]

[61] Stephen Kemmis, Robin McTaggart, and Rhonda Nixon, "The Action Research Planner: Doing Critical Participatory Action Research" (Springer, 2014).
[62] Z O'Leary, "Action Research," *The Social Science Jargon-Buster* (2007).

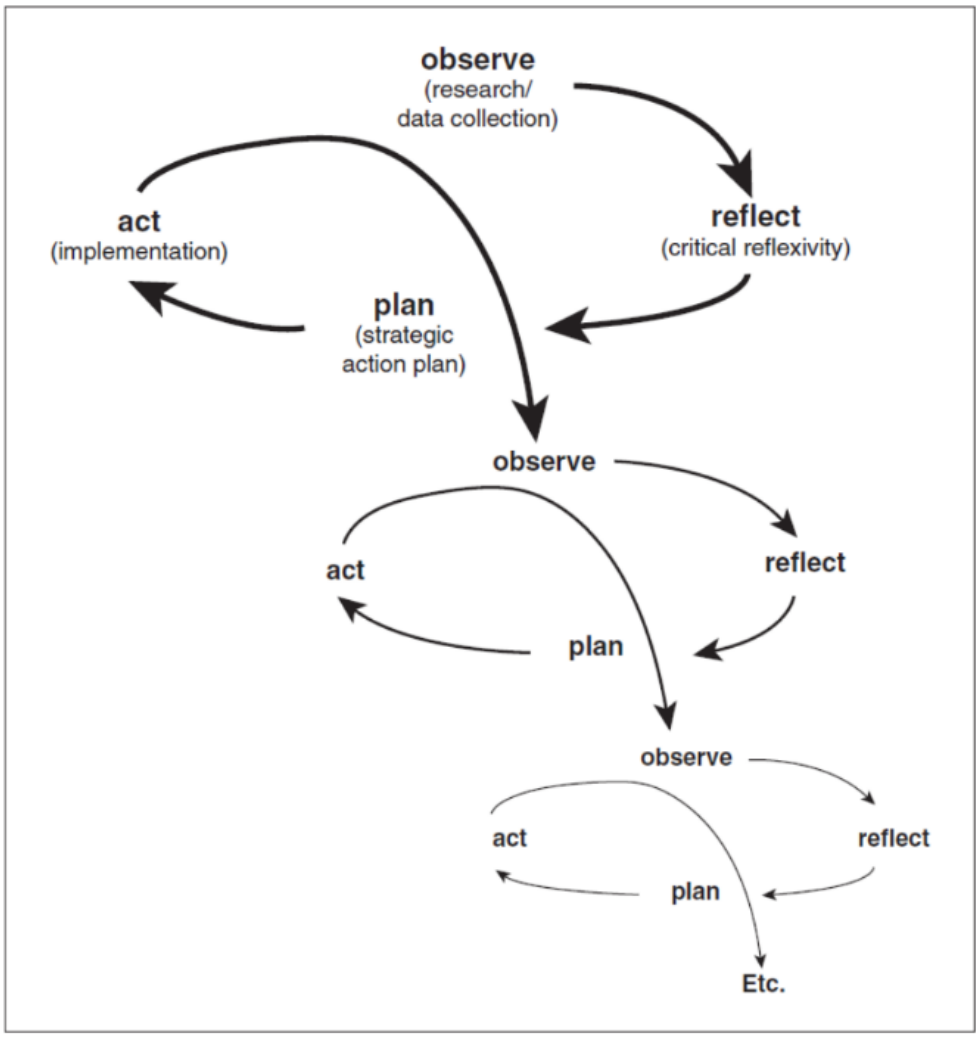

Figure 16 O'Leary's Model

3. Model Elliot[63]

[63] John Elliot, *Action Research for Educational Change* (McGraw-Hill Education (UK), 1991).

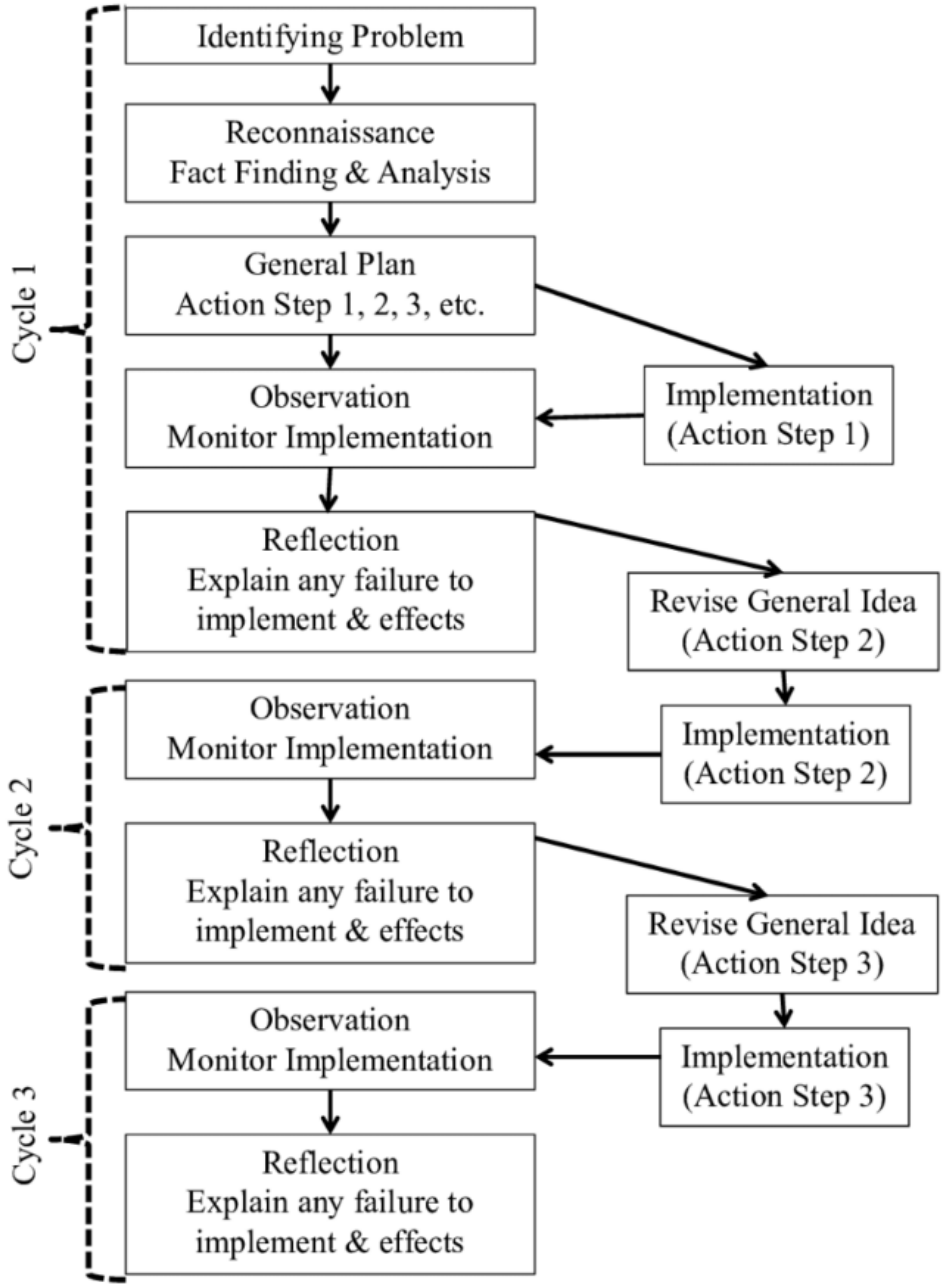

Figure 17 Elliot's Model

4. Model Kurt and Lewin

Figure 18 Kurt & Lewin's Model

5. Stinger's Model

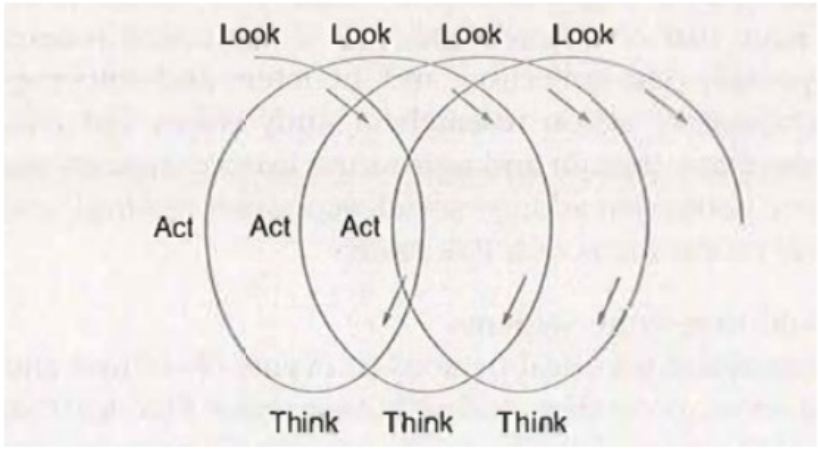

Figure 19 Stinger's Model

Review of Related Literature

1. Review of Previous Research

In this part, the researcher carefully elucidates the findings of past research, which may include new ideas, hypotheses, concepts, or methods to the present study. The research findings offered are original works that include the researcher's name, the research topic,

the date the research was conducted, the study's location, the research technique, the findings, and so on. The researcher can describe how the earlier study and the present research are similar and different. The research then draws conclusions from all of the prior studies that have been used. In addition, the researcher discusses the present research that will be undertaken in the context of various prior studies on comparable topics. As a result, the development initiatives that will be undertaken have a solid empirical foundation.

2. **Theoretical Bases**

In this phase, the researcher develops a complete framework of references for concepts, principles, or theories that will be utilized to solve issues or build the desired output. The framework is based on a review of many theoretical and empirical components of the problem at hand, as well as the efforts that will be made to address it. The descriptions in this chapter should serve as a theoretical foundation for why this problem has to be solved and why the learning approach was chosen. Theoretical studies are concerned with the development of an idea, theory, or model that is relevant to the topic.

Research Method

1. **Setting of Research**

The researcher mentions the research location and time in this section. The researcher can also describe the stages of the research process, from basic research (issue identification) to data collection (activity), data analysis, and research report writing.

2. **Object of Research**

The researcher outlines the issue or difficulty in the research or the scope of the research subject in this part. In social research, the object of the problem might be an individual or a group of individuals who are involved with the topic problem.

3. **Design of Research**

In this section, the researcher describes the general design of the research process by stating the technique of classroom action

research used, for example, the exploratory mixed method. As a result, the design used is determined by the study's goal and challenge.

4. **Planning**

The action planning step begins when the researcher collects the problem data and facts. This stage is used to plan the actions that will be taken. This activity seeks to make each cycle's actions more clear. Following the acquisition of data or facts regarding the situation, researchers and colleagues collaborate to identify what to do next. The first step is to develop a scenario for the action that will be taken. Action scenarios are intimately related to the classroom learning process. As a result, the syllabus or lesson plan was created by the researcher. At this point, the research efforts are the product of an agreement reached after conversations with collaborators. Basically, these action activities do not obstruct the execution of learning and teaching. Preparing a Semester Learning Activity Plan entails determining the course learning outcomes, also known as Course Learning Outcomes (CLO), indicators, learning experiences, learning strategies, learning processes, learning resources, learning process evaluation systems, and developing instrument validation. 2) Creating observation sheets, field note guides, and achievement criteria for the aim. 3) Creating a plan for putting the plan into action. The action research timetable is synchronized with the learning schedule.

5. **Taking Action**

The researcher performs the action in this section. The number of activities can be two, three, four, and so on until the research goals are met. If the research challenge does not yield substantial research results, the action is implemented again in the following cycle based on the prior action's assessment stage. In addition, the researcher outlines the learning process for each cycle in this section.

6. **Observing**

The researcher takes action in the classroom or throughout the learning process in this part. At the same time, as partners for this action study, colleagues make observations on the observation sheet during each learning session in the classroom, on the content delivered, and on the activities of instructors and students while learning occurs.

7. **Reflecting**

   Action research activities are continued in this part with reflection activities to assess the outcomes of learning activities and observations made by researchers and collaborators. During the action process, reflection activities are carried out to identify weaknesses or barriers. Furthermore, this activity might uncover new issues that develop during the action process, allowing researchers to modify the actions for cycle II. If the anticipated learning outcomes were not attained in cycle I, the researcher will resume action activities in cycle II by designing and enhancing additional actions.

8. **Instrument of Research**

   The researcher creates a research instrument design based on the study data requirements in this part. Teacher and student activity observation sheets, assessments to measure learning outcomes, questionnaires to learn about student learning experiences, and action interview grids are some of the instruments used in classroom action research.

9. **Data Analysis and Reflection**

   The researcher outlines the research data validation in this part entailing the concepts like credibility, transferability, dependability, and confirmability to evaluate the amount of data reliability. Meanwhile, qualitative data analysis employed an inductive method in which the researcher initiates particular observation activities, captures patterns in each data set, formulates the data by hypothesizing, and draws conclusions. Organization, description, and interpretation are the three steps of data analysis. In the organizing step, which entails creating a narrative using data gathered from interview transcripts, observation sheets, and documents. The second step consists of a description of the features of each data set that has been reduced and coded. The researcher related the data to the research question at this point. The interpretation of data that has been condensed and structured is the final stage. The researcher begins to scrutinize every action, behavior, and other observation at this point, and then connects it to the study topic. To supplement qualitative data in each cycle, quantitative data analysis is offered in the form of descriptive

statistics. The goal of this quantitative data is to assess the effectiveness of the learning strategies employed.

References

In this part, the researcher organizes and specifies all of the materials used in creating the research proposal or thesis, including books, journals, theses, dissertations, papers, newspapers, regulations, and others. This section also demands a bibliography in which all the cited references are listed in an alphabetical order using predetermined referencing styles (APA, Turabian, MLA and the like).

F. SUMMARY

Action Research is carried out to address the problems in the teaching and learning environment and is aimed to improve teacher's practices. Action research may also use a variety of methods of data collection. Basically, we need to pose an alternative approach to address the problems and to evaluate the research a checklist of action research quality based on criteria or key elements can be used.

G. EXERCISE

1. What does action research refer to?
2. What are the key stages in doing action research?
3. What are the models that are commonly used in educational action research?
4. How is action research evaluated?

H. SUGGESTED READINGS

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UNIT 6: RESEARCH AND DEVELOPMENT –(R&D)

A. INTRODUCTION

Research and Development (R&D) is a type of research aiming to produce a complete product that can be used effectively in an educational program. The products of R&D can be syllabuses, instructional materials/media, assessment instruments, practicum modules, student workbooks, textbooks, audiovisual materials, training manuals, equipment, and many others.

B. LEARNING OBJECTIVES

2

By the end of this unit, you should be able to:

- define research and development as a research method
- identify the aims of doing R&D
- identify several steps for R&D research
- plan action research for a given topic
- evaluate action research

C. BACKGROUND OF CONDUCTING R&D

In this section, the researcher elaborates the facts about phenomena or problems to be researched. The facts provide information that the existing instructional devices/model has not been effective in obtaining the goals based on the result of preliminary research. Therefore, elaboration in this section begins with the identification of the gaps between ideal conditions (wanted condition) and real conditions (unwanted condition) existing in the field and the impacts caused by the gaps. Based on the gaps that have been described, then the researcher proposes various alternatives or solutions to overcome the gaps followed by identifying supporting and non-supporting factors. In short, the background of the research contains a description of the problems to be studied, causes of the problems, and solutions to the problems especially using the product developed.

The Statement of Problem

In this section, the researcher explicitly formulates the research problem using an interrogative sentence (i.e. using a short, concise, clear sentence).

The research problem is intended to underline the problems that have been revealed in the background. Formulation of the research problem in R&D should at least contains at least two aspects, namely (1) the problem to be solved and (2) the kind of product that will be developed or produced to solve the problem. Look at the following examples:

- What communicative English teaching materials are suitable to be developed to improve the students' English communication skills in UIN Mataram?
- What animation-based English instructional media is appropriate to increase the students' motivation and achievement at SMA / MA X or Y?

The objective of the Development

In this section, the researcher states the aims of developing the product and the formulation should be in line with that of the formulation of the problem. In this case, the formulation of the objective of the development is directed at achieving the expected ideal conditions as described in the background of the research. Consider the following examples:

- The objective of this study is to develop communicative English teaching materials to improve the students' English communication skills in UIN Mataram.
- The objective of this study is to develop animation-based English instructional media to increase the students' motivation and achievement at SMA / MA X or Y.

Specification of Product

In this section, the researcher provides an overview of the characteristics of the product to be developed. The characteristics here refer to the specific identity or certain qualities possessed by the product developed which make it different from other products. The products can be syllabuses, instructional materials/media, assessment instruments, practicum modules, student workbooks, textbooks, audiovisual materials, training manuals, equipment, and others that can be used to solve the instructional problems.

Urgency of Development

In this section, the researcher explains the arguments about why it is necessary to make changes from real conditions (unwanted conditions) to ideal conditions (wanted conditions). Specifically, why it is important to develop the product concerning solving the existing problems should be described. Thus, the relationship between the importance of problem-solving and the wider context of the problem is hoped to be revealed.

Assumption and Limitation of Product

In this section, the researcher state assumptions on which the product is decided to be developed and justification for the selection of the model and the procedure of development. The assumptions should refer to valid theories, expert views, or empirical data relevant to the problems to be solved using the developed product. As we know that an assumption is a statement that can be empirically tested based on the findings, observations, and the result of previous experiments. Besides empirical data, the researcher also describes the limitations or weaknesses of the product developed or produced to solve the existing problems, especially regarding the context of bigger problems. Supporting conditions needed to be prepared in implementing the product developed also needs to be explained as a consequence of the limitations of the product.

D. REVIEW OF RELATED LITERATURE

1. Review of Previous Research

In this section, the researcher elaborates systematically the result of previous research which contains new theories, propositions, concepts, or approaches on the current research carried out. The results of the research presented are original works that completely mention the name of the researcher, the research topic, when the research was carried out, the location of the study, the research method, the findings, and so on. Also, the researcher states the position of current research that will be conducted among several previous studies within related subjects. This is intended to provide an overview of the relationship between the development efforts and other efforts that have been taken by other researchers to approach

the same or relatively similar problems. Thus, the development efforts that will be carried out have a strong empirical basis.

2. Theoretical Bases

In this section, the researcher elaborates comprehensively a framework of references regarding concepts, principles, or theories used as a basis for solving the problems encountered or developing the expected product. The framework is prepared based on a study of various theoretical and empirical aspects related to the problem being solved and the efforts to be taken to solve it. The descriptions in this chapter are expected to become a theoretical basis for why this problem needs to be solved and why the method of product development is selected. Theoretical studies of the models and procedures to be used in developing the product also need to be presented especially to justify for the products to be developed.

3. Conceptual Framework

In this section, the researcher explains the logical construction of the topic or problem being studied. Specifically, the researcher clarifies his thoughts or thinking based on theoretical studies and relevant previous researches about the product to be developed. This has the purpose of providing a picture and direction to the researcher in determining assumptions and formulating problems to be studied.

E. METHOD OF THE DEVELOPMENT

1. Research Design

In this section, the researcher state the type of research chosen to describe the overall plan of the research process. In practice, when research is carried out to produce a product, of course, the most appropriate design to use is the Research & Development (R&D). So, the choice of design depends on the objective and problem of the study.

2. Model of Development

In this section, the researcher describes briefly the structure of the model used as the basis for developing the expected product. The model of development can be taken from the one created by experts, or it can be designed by the researcher himself. It can be in the forms of procedural, conceptual, and theoretical models. The procedural model describes the steps to be followed to produce a product. Conceptual model details the parts and relation among the parts of the product developed. The theoretical model shows the connection of changes among events. If the model selected is an adaptation of the existing model or the one taken from a model designed by experts, the selection needs to be supported by reasons, adjusted components, and the strengths and weaknesses of the model. Otherwise, if the model selected is designed by the researcher himself, complete information about each component and the relationship among the components of the model needs to be presented. It should be noted that the model should be described as operational as possible as the basis for product development.

3. Procedure of Development

In this section, the researcher elaborates the steps to be followed in developing or producing the expected product. The steps taken in developing the product depends on the references used. The followings are some examples of the procedures of development that may be followed.

Example 1.

The steps may include; Preliminary Study, Model Development, Model Evaluation, or Testing.

Example 2.

The steps may involve; needs analysis, analyzing findings, planning instructional materials, developing instructional materials, expert judgment, revising instructional materials, trying-out instructional materials and revising instructional materials.

Example 3.

The steps may cover; Preliminary Study, Planning of Development Model Expert Validation, Revision, and Model Implementation (Product Trial)

Example 4.

The steps may consist of; Need Analysis, Description of the Purpose, Selection and Development of Material, Production of Proto-Material (Draft of the Material), Production of Pedagogical Material (Original form of the material), Expert Validation, Field Testing, Evaluation and Revision, and Final Product.

4. Expert Validation, Revision, and Try out of the Product

1. Expert Validation

In this section, the researcher explains the process and the results of the expert's theory of the product to be developed. The results of the experts' review can be in the form of results of assessments or evaluations, comments, and suggestions given by experts regarding the validity of the products produced. Based on the results of the assessment, comments, and suggestions from experts, then the product developed is revised. Experts or experts involved are experts in the field of product content being developed and experts in product design and other experts as needed. At this stage, validation is an assessment by the experts based on rational thinking, not facts in the field.

2. Revision

In this section, the researcher elaborates the process and forms of revision carried out on the product developed based on the results of assessments, comments, and suggestions from experts. Revision is the next process to be done after the product being developed has been evaluated by experts.

3. Try out of the Product

In this section, the researcher states several points related to product testing including design of the try-out, subject of the try-out, types of the data, instruments of data collection, and techniques of data analysis.

It should be noted that try out of the product is intended to assess the attractiveness, efficiency, practicability, and effectiveness of the product developed.

a. Design of the Try-Out

Regarding the design of the try-out, the researcher explains the stages of the try-out process which include individual try-out, small group try-out, and field try-out. In implementing this process, the researcher may stop at the individual try-out stage or continue and stop at the small group try- out stage, or at the field try out stage depending on the urgency and the data needed through the try-out. Furthermore, the design of the try-out can use the one commonly used in quantitative research, namely descriptive or experimental design.

b. The Subject of the Try-out

Concerning the subject of the try-out, the researcher need describe and identify clearly and completely the characteristics of the subjects, including the way how the subject is selected. The subject of product testing is the users of the product developed. The subject involved in the try-out process is limited only to those having a connection with the product developed. The technique of selecting the subject should also be described in detail.

c. Kinds of Data

In relation to the kinds of data, the researcher outlines the kinds of data to be collected following the information needed on the product developed. Elaboration on the types of data collected should be related to the design and selection of the subject of the try-out.

d. Instruments of Data Collection

Regarding the instruments of data collection, the researcher explains the kind of instruments used to collect the data as stated in the previous section. If the researcher uses the existing instruments, it is necessary to describe the characteristics of the

instrument, especially its validity and reliability. Meanwhile, If the researcher uses self-developed instruments, the procedure of developing the instruments also need to be explained.

e. Techniques of Data Analysis

In connection with the techniques of data analysis, the researcher explains the technique and procedure used in analyzing the data of the try out with reasons. If the technique used is well known, there is no need to describe it in greater detail. However, if this technique used is not widely known, it needs to be described in more detail.

f. Validity and Reliability

In this section, the researcher presents the results of construct and content validity testing of the instruments reviewed by experts or panels. The theoretical analysis of a concept starts from a conceptual definition, operational definition, dimensions and indicators, and items of the instrument. Besides, the researcher tells about the experts who evaluate the instruments, analysis procedures, and the quantitative results of the evaluation. Furthermore, the researcher explains review procedures, the quantitative results of validation by the experts, and empirical validity testing. The last thing is to calculate the reliability coefficient of the instruments using the available measurement techniques.

F. RESULT OF DEVELOPMENT

A. Data Display

In this section, the researcher presents the results of the study to answer the research questions, exactly the results of development through the development procedure applied and the development model followed. The data presented are the ones collected or obtained through research instruments to gather the information needed in the research. Next, the data presented are in the form of descriptive data which include the results of a preliminary study or the results of needs analysis, the results of product development, the results of expert validation, the results of product revision, and the results of product trial and the final results or

improvement of the products developed. Results are presented in the form of tables and figures with an explanation.

B. Discussion

In this section, the researcher discusses the research findings as described in the previous section. The discussion is presented by connecting the results of current research with the findings of previous research; whether the results of the previous study support or contradict the results of the present study. Discussing the research findings is the interpretation and verification of the findings by relating them to the existing concepts or theories. Supporting and unsupporting factors both in the process of developing and implementing the product as well as the strengths and weaknesses of the product developed need to be described in this section.

A. Conclusion

In this section, the researcher presents the summary of the development results including a final review of the products developed. The review is conducted objectively and thoroughly and it should be linked with the literature review which later leads to the opportunity to use the product in an attempt to solve the existing problems. The strengths and weaknesses of the product should be described completely with a comprehensive review of the relationship between the product and the problem being solved. The space for the emergence of other problems from the utilization of the product developed also should be identified and it should also be completed with a description of how to anticipate those new problems.

B. Suggestion and Implication

In this section, the researcher presents suggestions related to the product developed, namely the suggestion for the utilization of the product developed, the suggestion for the dissemination of the product developed to a wider target, and the suggestion for further development of the product developed. Each suggestion should be based on the results of the review and evaluation of the product as discussed in the previous section. The presentation of the suggestion should use clear statements and the suggestion proposed should be explicitly different from the other. The

suggestion proposed should also be supported by arguments. Lastly, the researcher describes the implication of the research by presenting the logical consequences of the product developed for the improvement of the quality of education.

G. SUMMARY

Research and Development research aims to design and develop a model, a program, or products through R&D stages. The development of the product is consulted to experts for validation. The product can be in the form of an instructional model, syllabus, teaching material, and books.

H. EXERCISE

1. What are the purposes of doing R&D research?
2. What are the main stages in conducting R&D research?
3. What is the function of the tryout in this type of research?
4. Why is it important to have expert validation for the developed product?

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Gall, Meredith Damien, Walter R. Borg, and Joyce P. Gall. *Educational Research: An Introduction*. Longman Publishing, 1996

UNIT 8: USEFUL TOOLS FOR RESEARCH

A. INTRODUCTION

In this unit, you will go through a series of training on the use of several popular research tools that will be highly useful for your research. The first application that will be our concern is reference manager and the two most ubiquitous reference manager applications will be discussed including Mendeley and Zotero. This application will enable you to input and import references from external sources and also enable you to arrange and make citations according to the required styles which are built into the application. Once this software is discussed, the lesson will continue to paraphrase manager Quill Bot, which will allow you to paraphrase up to 700 words for the free version, so that you may avoid plagiarisms. And this unit finally concludes with grammar and spelling checking software Grammarly. This software is proven useful for checking simple grammar and spelling errors.

B. LEARNING OBJECTIVES

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By the end of this unit, you should be able to:

- Identify the main features of reference manager application, paraphrase engine and grammar checking software.
- Use reference manager to organize references
- Use Quillbot to paraphrase text
- Use Grammarly to check and edit text
- Use SPSS for basic descriptive and inferential statistics.

C. REFERENCE MANAGER

A reference manager serves as a utility to organize citations and references in a scientific publication such as thesis o journal articles. Using a reference manager is truly convenient when it comes to practicality and neat citation styles. So far, applications that are typically used as reference manager can be either paid or free and, in this book, two free references managers, i.e Mendeley and Zotero are discussed.

1. Citation and References

Citation is a specific source that you mention in the body of your paper (parenthetical or footnote). Parenthetical citation is marked by the provision of a relevant source of information whenever a paraphrase or quotation is used. This is usually done by putting the surname of the author and the year of publication just before the period or full stop in a sentence. Footnote citation, on the other hand, appears at the bottom of the page where the citation appears. The referenced work is indicated in the text with a numeral, which is repeated at the bottom of the page in front of the footnote. The author, title, and publishing information are listed in that order in a footnote. Here are examples of these two different formats of citation.

Assessment received particular attention in the latest 2013 curriculum where the utilization of alternative methods of assessments such as observations and portfolios were regulated (Widodo, 2016).
→PHARENTHETICAL

Assessment received particular attention in the latest 2013 curriculum where the utilization of alternative methods of assessments such as observations and portfolios were regulated.[1]

[1] Handoyo Puji Widodo, "Language Policy in Practice: Reframing the English Language Curriculum in the Indonesian Secondary Education Sector," *Language Policy* (n.d.): 127–151. **→ FOOTNOTE**

References: List of cited sources in alphabetical order. The information needed for readers to identify and obtain each work mentioned in the text is provided in the references. Readers can easily distinguish both the sorts of works you consulted and the essential reference components (who, when, what, and where) with consistency in reference formatting, allowing them to focus on the substance of your reference list. Readers won't have to waste time figuring out how you structured the material if you offer each reference in a consistent manner.

Adler, P. A., & Adler, P. (1994). Observational techniques. In N. K. Denzim & Y. S. Lincoln (Eds.), Handbook of Qualitative Research. SAGE publications.

Airasian, P. W. (2005). Classroom assessment: Concepts and applications (5th ed.). McGraw-Hill.

Bale, J. (2011). Tongue-tied: Imperialism and second language education in the United States. Critical Education, 2(8), 87-96. https://doi.org/10.14288/ce.v2i8.182322.

Ball, S. (2012). Global education inc New policy networks and the neoliberal imaginary.http://www.tandfebooks.com.ezp01.library.qut.edu.au/isbn/9780203803301

Styles	Citation	References
APA	The development of intercultural competence is an ongoing process (Deardorff, 2011)	Deardorff, D. K. (2011). Assessing intercultural competence. *New Directions for Institutional Research*, *2011*(149), 65–79. https://doi.org/10.1002/ir.381
MLA	The development of intercultural competence is an ongoing process (Deardorff)	Deardorff, Darla K. "Assessing Intercultural Competence." *New Directions for Institutional Research*, vol. 2011, no. 149, 2011, pp. 65–79, doi:10.1002/ir.381.
Chicago/ Turabian	The development of intercultural competence is an ongoing process[1] [1]Darla K. Deardorff, "Assessing Intercultural Competence," *New Directions for Institutional Research* 2011, no. 149	Deardorff, Darla K. "Assessing Intercultural Competence." *New Directions for Institutional Research* 2011, no. 149 (2011): 65–79. https://doi.org/10.1002/ir.381.

	(2011): 65–79, https://doi.org/10.1002/ir.381.	
IEEE	The development of intercultural competence is an ongoing process [1]	[1] D. K. Deardorff, "Assessing intercultural competence," *New Dir. Institutional Res.*, vol. 2011, no. 149, pp. 65–79, 2011, doi: 10.1002/ir.381.

D. MENDELEY

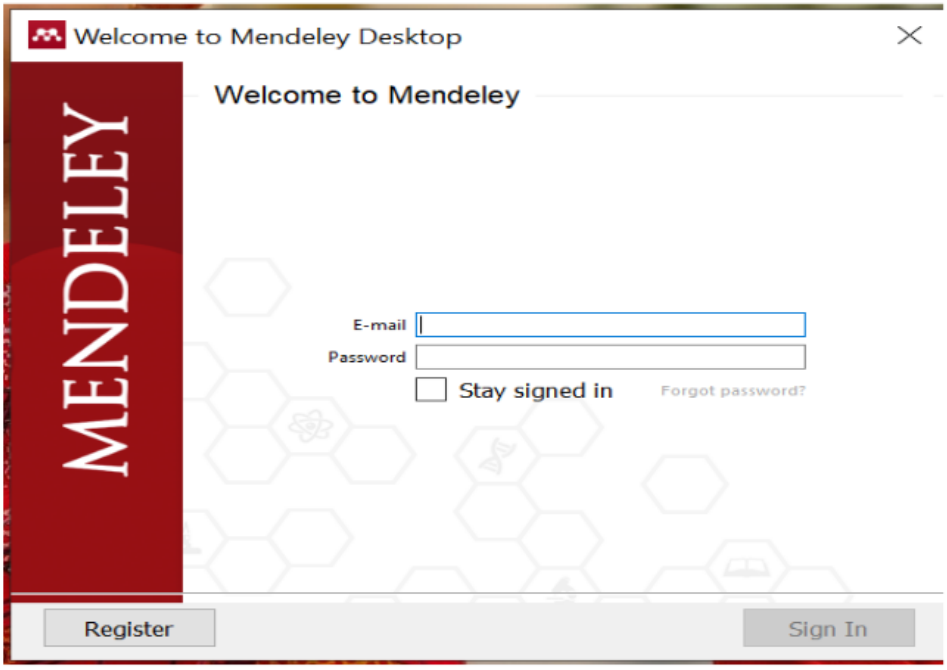
Mendeley is a reference manager created by Elsevier to help researchers organize their references. This application is open source/free to use and the following is the recommended Mendeley Pack (App installer)

1. **Mendeley Desktop** (PC or Notebook software compatible with Windows, Linux or Mac, 32 bit, downloadable on https://www.mendeley.com/download-desktop-new/)
2. **Web Importer** (Chrome Extension)
3. **Microsoft Word Plugin** (Macro)

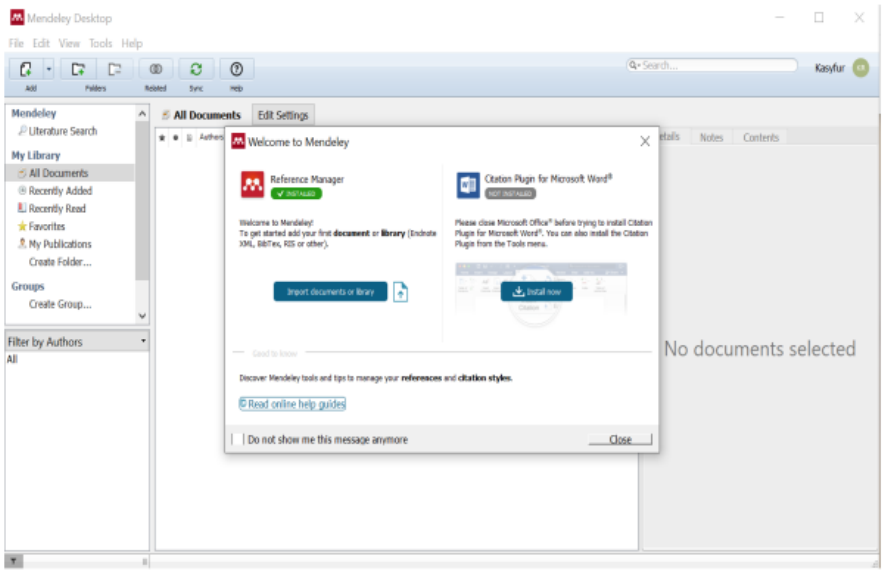
Note: You can Install 2 & 3 via Mendeley Desktop

Before Mendeley can be used properly, a Mendeley account should be made beforehand by entering your email address and setting a password for your account. You can do this easily through the

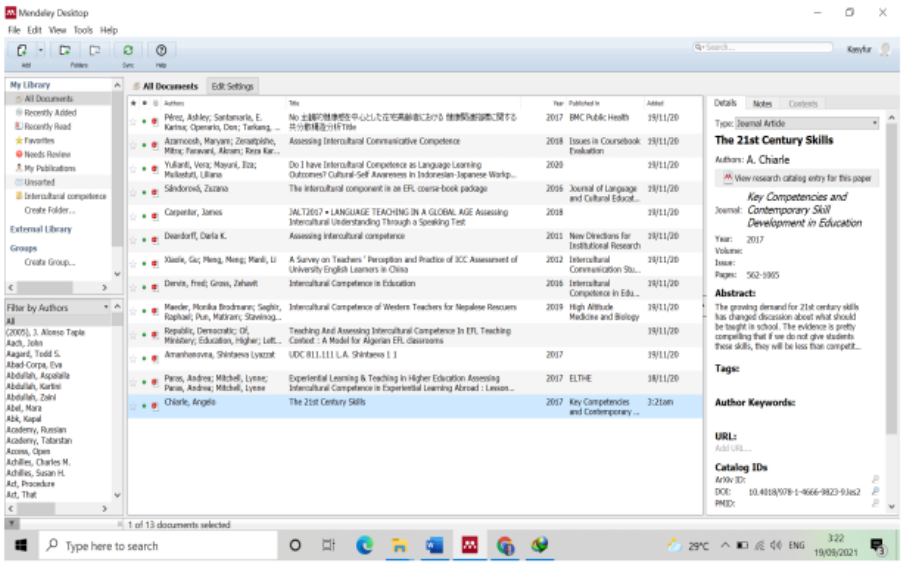
Mendeley desktop application. Once it is opened, a dialogue box requiring you to sign in or register will appear.



Once you signed in, a welcome message will pop up, offering the import for documents or library as well as the installation for Microsoft word plugin. Choose install now to enable Mendeley plugin for MS word to make your work more convenient. This operation can also be executed through 'Tools' tab on Mendeley where you can also install the web importer extension for Google Chrome web browser. The web importer will help you retrieve the metadata or information on reference you're accessing while surfing on the net through Chrome.

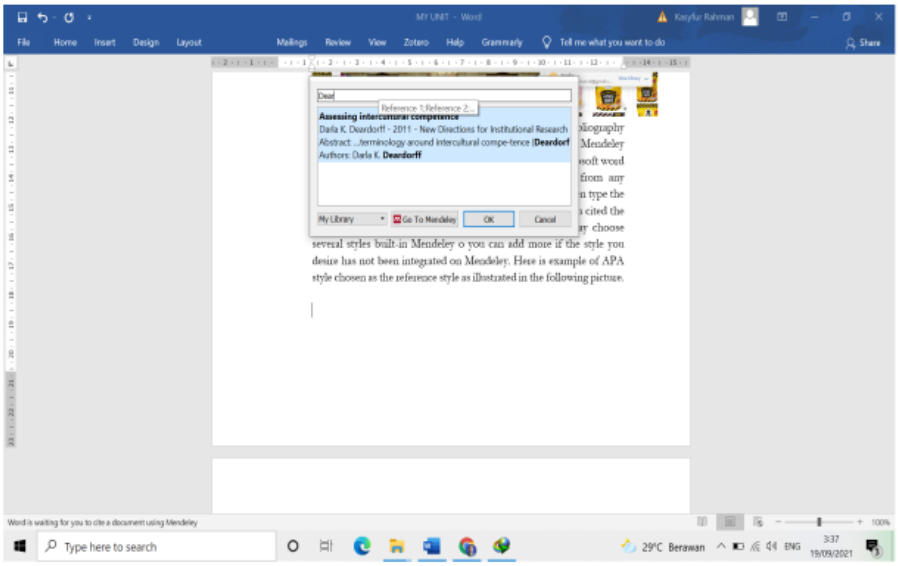


Here is the user interface for Mendeley desktop. To run the full functionality of Mendeley application on Ms Word, make sure the desktop application is both opened and active along with the Ms word application. One of the most convenient tools in Mendeley is that you can copy or drag PDF documents of journal articles into Mendeley desktop application and it will automatically retrieve information about the articles from the internet, but you have to make sure that you stay connected to the internet.

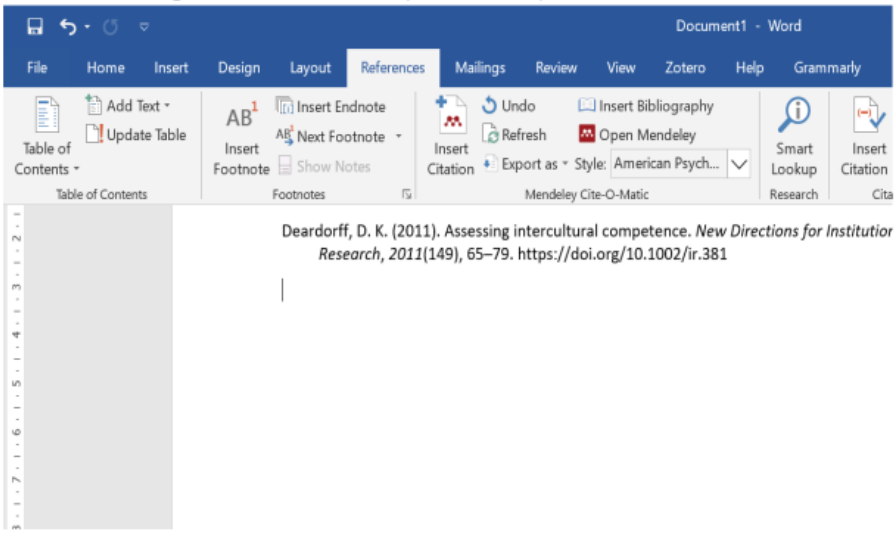


When browsing on articles or other references on your browser you can make use of the web importer to easily retrieve information about the site you'd like to make as a reference. Here is an example of a news article on jakartapost.com that will be used as a reference. First, open the article then click the Mendeley icon on the top right of the chrome browser. Once done, Mendeley will capture the available information on the article and you can tick the information you need and click add to store the information on your Mendeley desktop application.

Apart from all these, when inserting citation or making bibliography while working on your document it is convenient to use Mendeley Word plugin. Once installed, Mendeley will appear on Microsoft word in the References tab. Whenever you cite information from any references you can simply click the insert citation feature then type the name of the author or the title of reference from which you cited the information. Do not forget to set the style first. You may choose several styles built-in Mendeley o you can add more if the style you desire has not been integrated on Mendeley. Here is example of APA style chosen as the reference style as illustrated in the following picture.



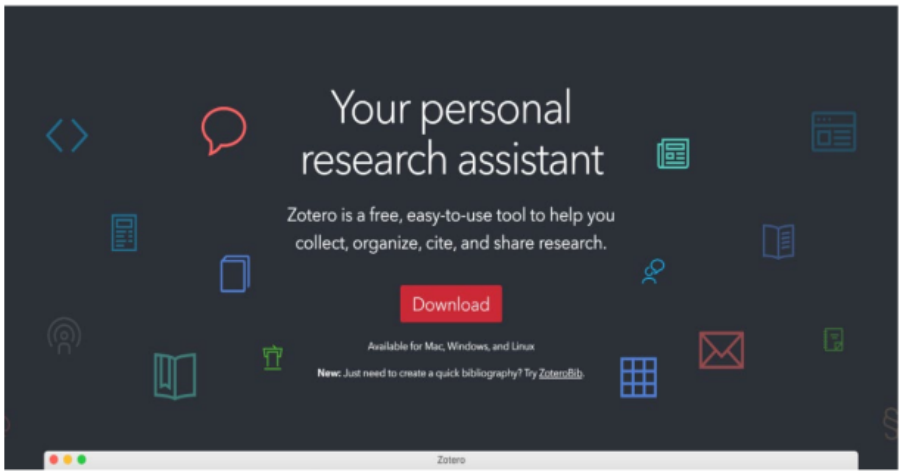
Once you already found the reference you want to use, you can simply click OK and the citation will appear. This also works when you want to make a list of references or bibliography. You just need to click insert bibliography and all the references you have cited will be listed in alphabetical order by Mendeley.



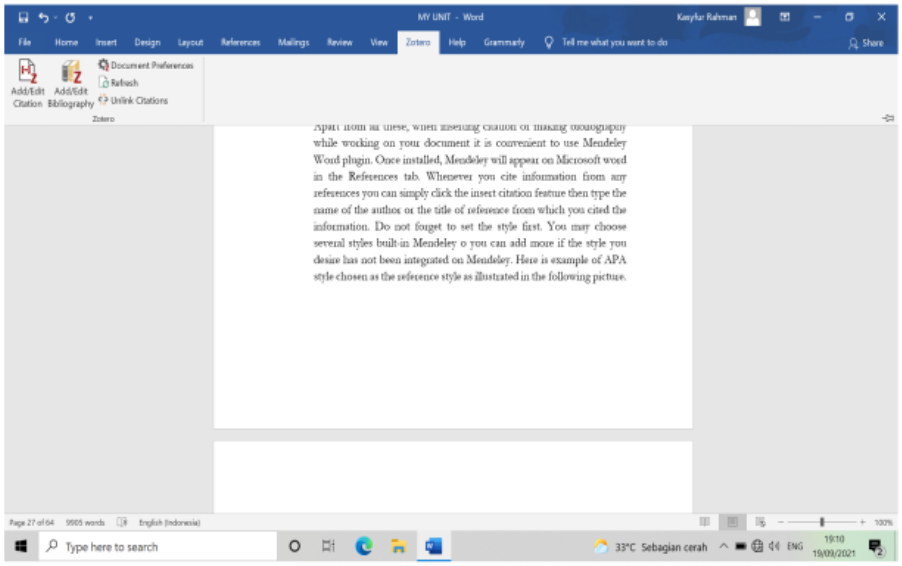
E. ZOTERO

Much similar to Mendeley, Zotero is a robust reference manager and it was among the first reference manager program released to the public as an open source software. In order to run

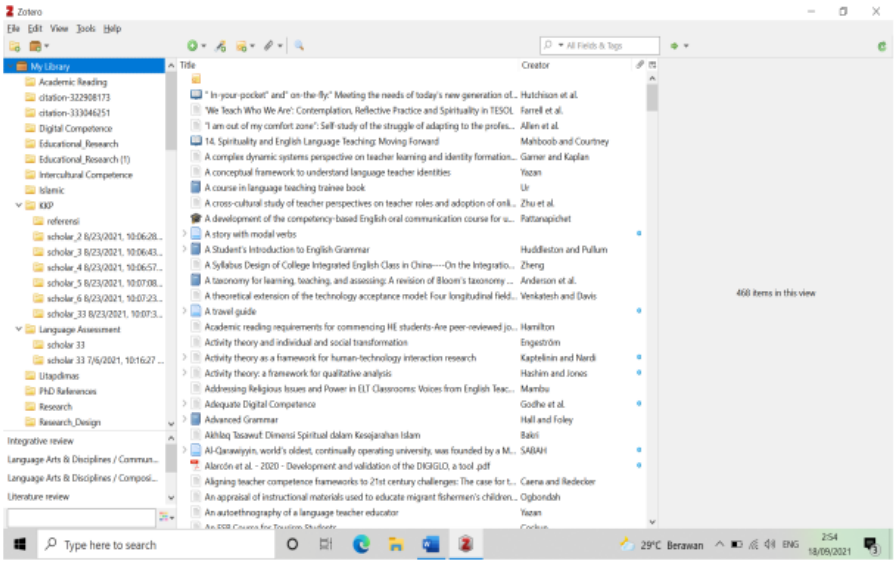
Zotero, threem elements is suggested to be installed in advance, including the Zotero desktop application, Zotero extension for Microsoft word and Zotero connector for Chrome browser.



Once installed, a typical layout of its user interface will look like the following which resembles that of the Mendeley application. However, unlike Mendeley which is integrated into Microsoft word's reference tab, Zotero has its own tab in Ms word as can be seen in the following illustrations. Apart from all these, its functionality is almost identical to Mendeley's.

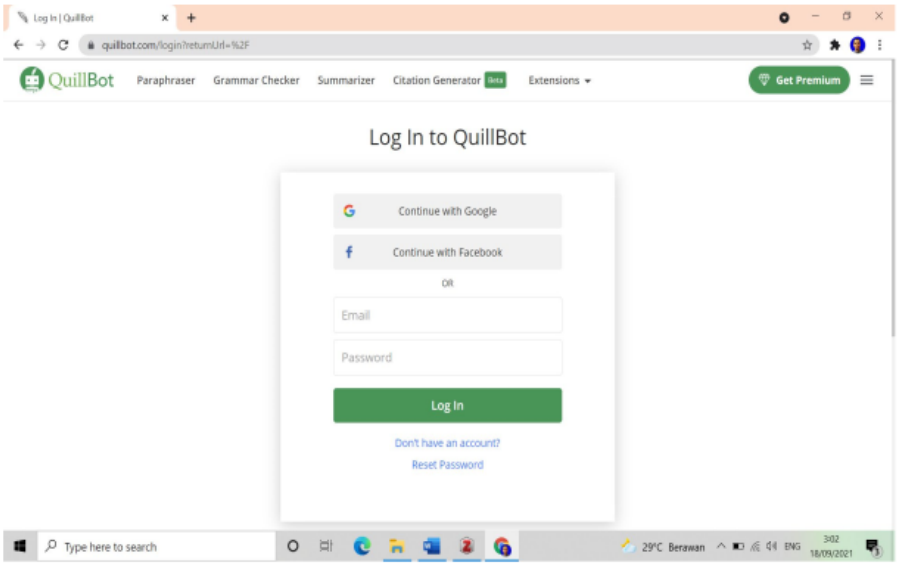


Here is an illustration for Zorero deskrop application for windows.

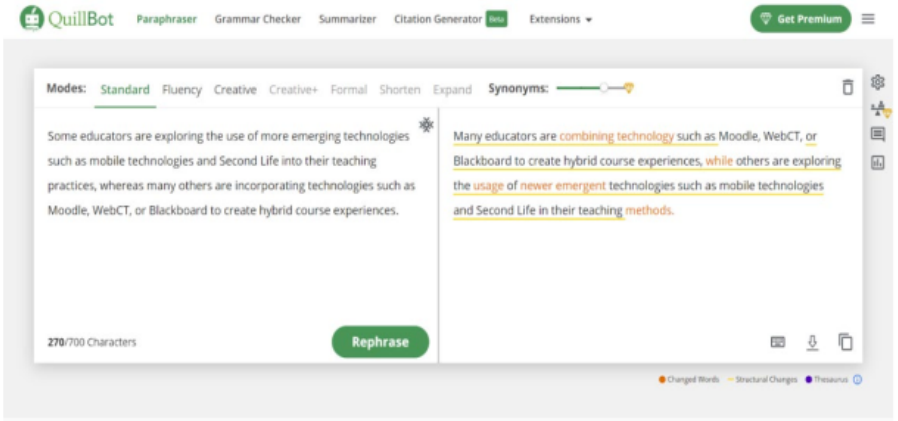


F. QUILLBOT

QuillBot is one of the available applications that can help us paraphrase text more effectively and efficiently, and it is available in both free and premium subscription. The free version is limited to certain functionality, while the premium one offers more functionality and more in-depth paraphrasing. In order to run quillbot, one may visit its official website on quillbot.com and a welcoming screen will pop out just like the following. You will first be required to create an account for your Quillbot and it is more convenient to use your existing Google or Facebook account to save time. Once the account has been created, you will receive up to 700 characters to paraphrase compared to only up to 400 characters if you do not have Quillbot account. QuillBot also offers a variety of modes that will determine the tone of the paraphrased texts ranging from standard, fluent up to formal paraphrase. To create a paraphrase with more lexical and structural deviations from the original text, you can drag the synonym option to the right.



As can be seen below, quillbot interface mainly consists of two boxes one on the left, which let you copy and paste the text you wish to paraphrase and one on the right displays the paraphrased texts. Simply copy the source text and paste it on the left then click paraphrase button, the Quillbot will automatically paraphrase the text. However, if you think the paraphrased text does not really what you want, you can reverse the altered words on the right box manually. QUillbot can actually be integrated into Ms word as an extension, but you will need to access windows store and login using your Microsoft account first. Here is an example of source text and paraphrased text.



SPSS

G. SPSS (Statistical Package for Social Science)

What is SPSS?

SPSS which stands for Statistic Package for Social sciences is proprietary software of IBM company. It can run on Mac or windows-based computer. it was available until version 25 in the x86 and x64 architecture. The user interface of this program is quite similar to that of Microsoft excel. However, it has more features that will enable you to input and process research data at ease. You should be carefully aware that SPSS is not free software and you have to purchase it after your trial session is expired.

To run this program, you have to install it on your computer. the following are the system requirements for SPSS 24. Make sure your computer meets the minimum requirement.

Minimum Operating System:
Windows 7 (32-bit and 64-bit versions) or Windows 8 (32-bit and 64-bit versions)
or later

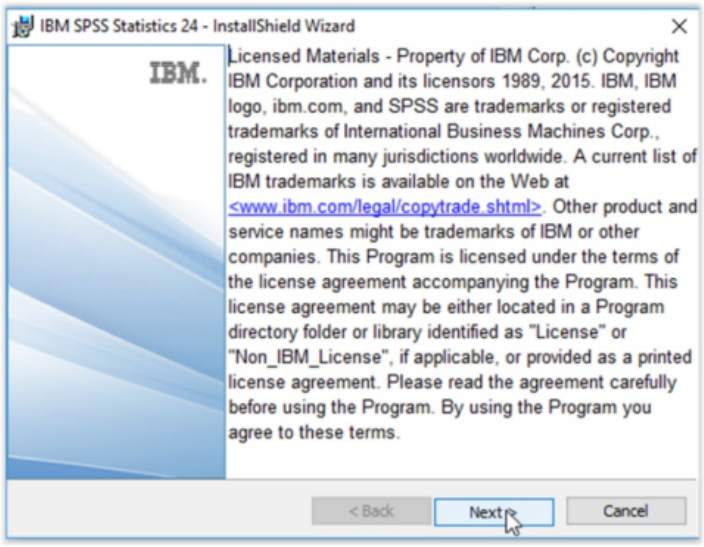
Minimum Hardware:
Intel® or AMD processor running at 1GHz or higher
Memory: 1GB RAM or more recommended
Minimum free drive space: 900MB DVD drive XGA (1024x768) or a higher-resolution monitor

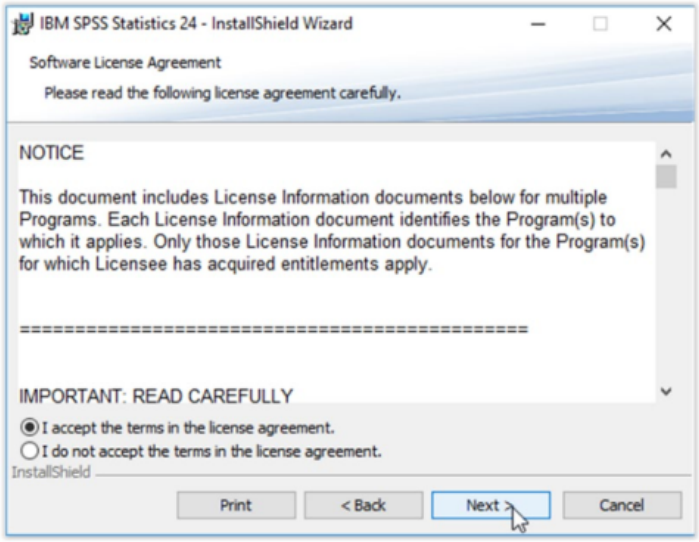
For connecting with IBM SPSS Statistics Server, a network adapter running the TCP/IP network protocol

SPSS Installation

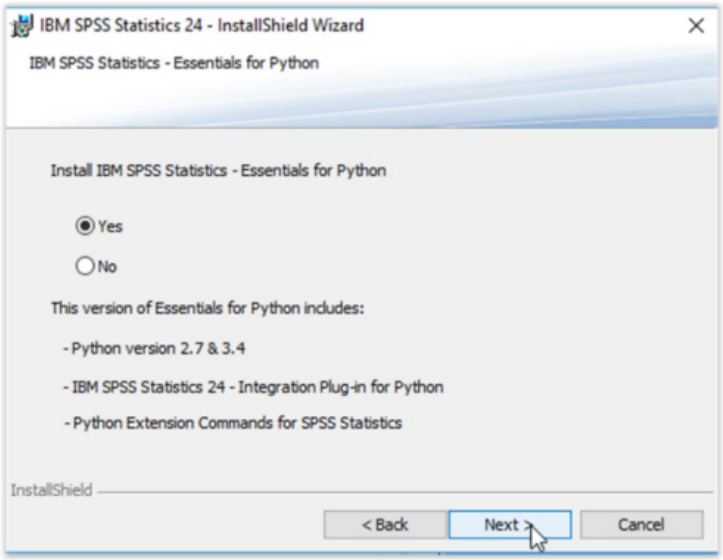
The first step in SPSS installation is to download the installation files for your computer. it may be in the form of .msi or self-executable files (.exe). double click that file and wait for the file to extract.

Once the installation file has been extracted, the first interface that you will see is End-User agreement. Make sure you accept the license term agreement.

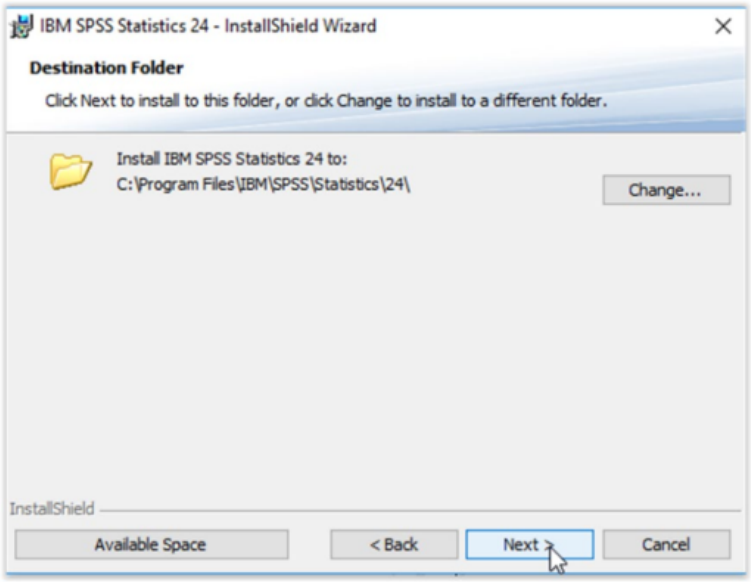


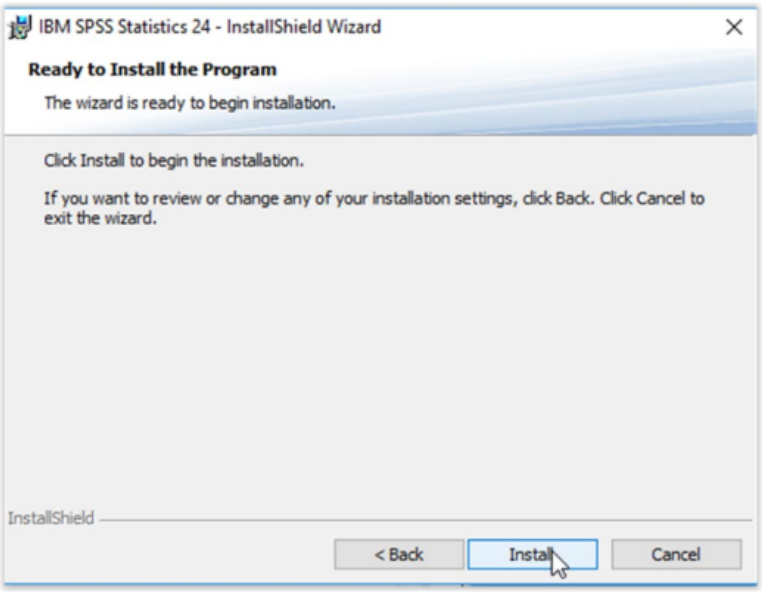


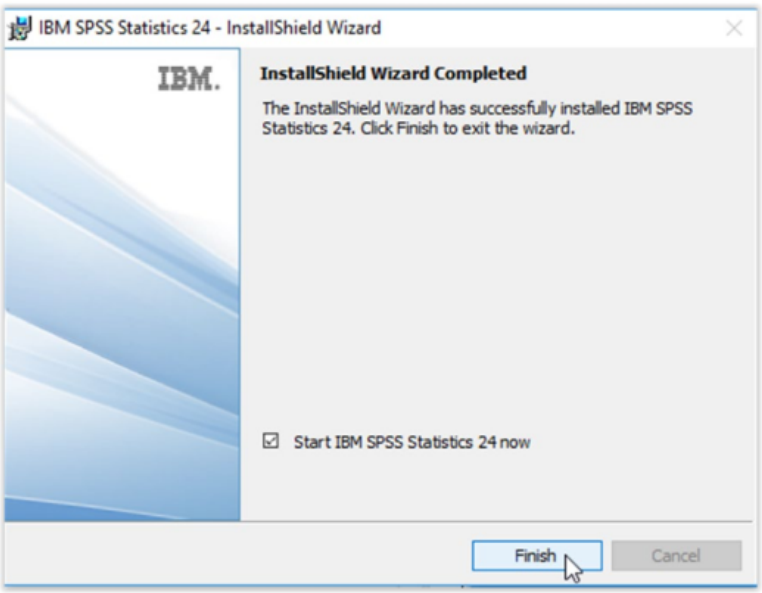
The next dialog box is about the offer to install the programming language PHYTON. Choose no if you think you do not need this.



The next step is to click next until the installation process is finished.







If the installation process is finished, you can open the app and a friendly and excel-looking interface will appear.

Measures of Central Tendency

Any data analysis particularly in quantitative research requires descriptive statistics and one of the most popular measures displayed is the summary of data. Measure of central tendencies: one value that best represents

an entire group of scores. It includes mean, median, and mode. Mean is the sum of all values in a group divided by the number of values in that group, Median is the midpoint in a set of scores and Mode is the value that occurs most frequently. These values are called **measures of central tendency** because they tell us where the data are centred.

Here is an example of using SPSS 24 to measure central tendency.

The following data are scores of 30 students in speaking examination. Find out the mean, media and mode of these data.

77 78 72 80 75 70 62 80 86 66

77 82 75 58 72 75 62 70 84 77

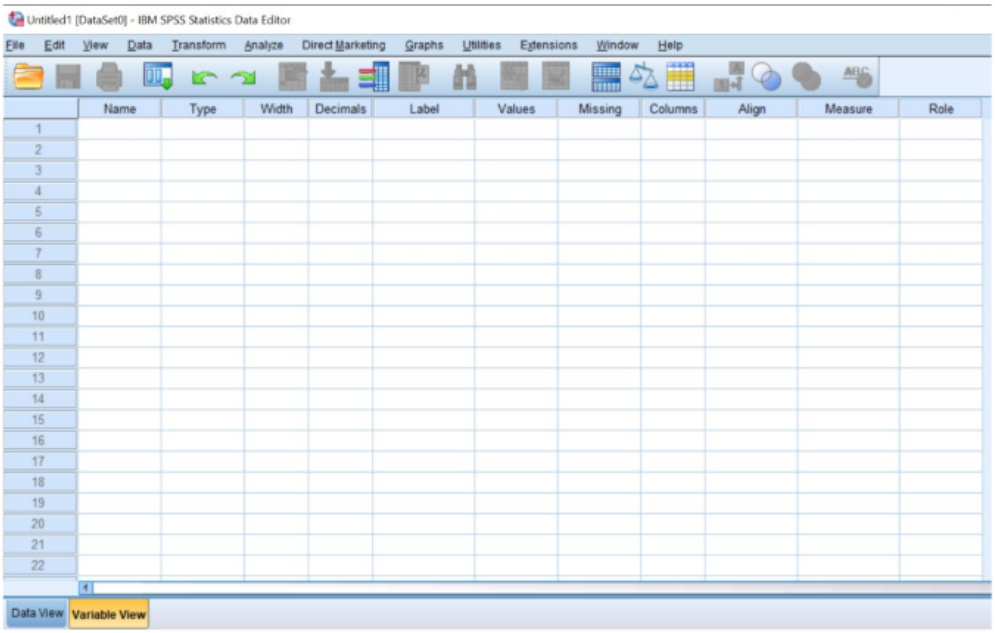
58 68 82 64 86 78 75 64 78 82

Procedure

First of all, every time SPSS is used to perform data processing the first step is always defining the variable and determining its characteristics. The user interface of SPSS displays two tabs which can be switched at the lower bottom buttons. These tabs are DATA VIEW and VARIABLE VIEW. The variable view tells you what variable your data represents. Here is the illustration.

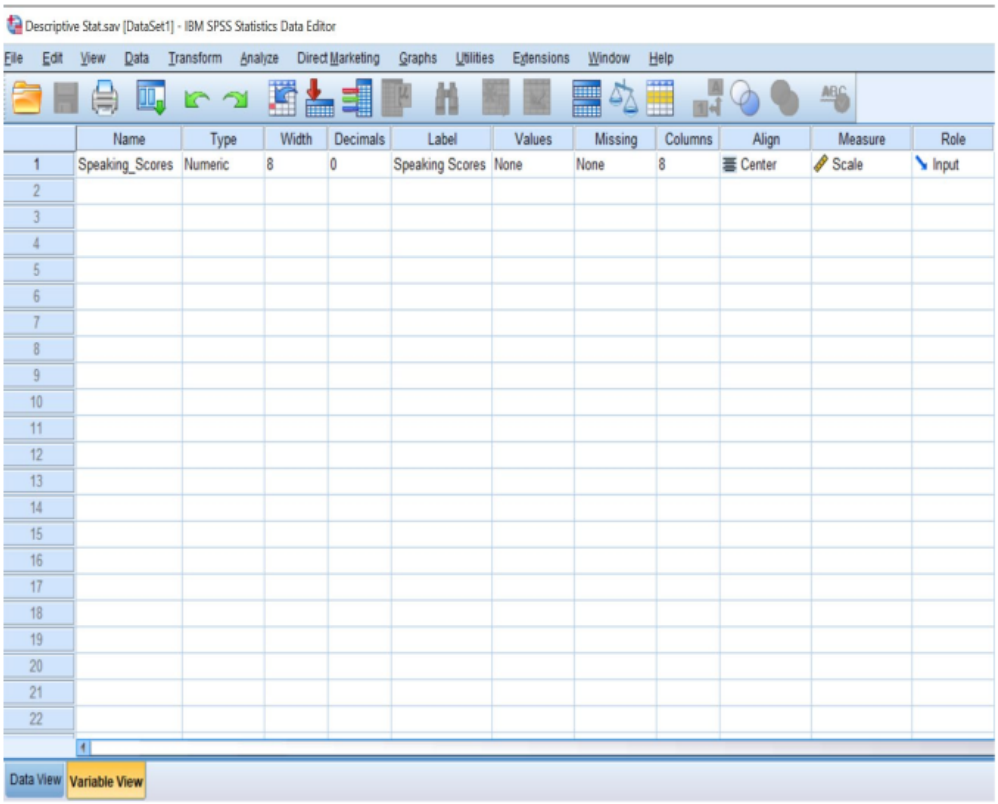
As illustarted above, when entering your variables into SPSS, you will notice several parameters such as name, type, width, decimal etc. Now, let's input your variable.

1. From the exercise data, we know that variable of the data is

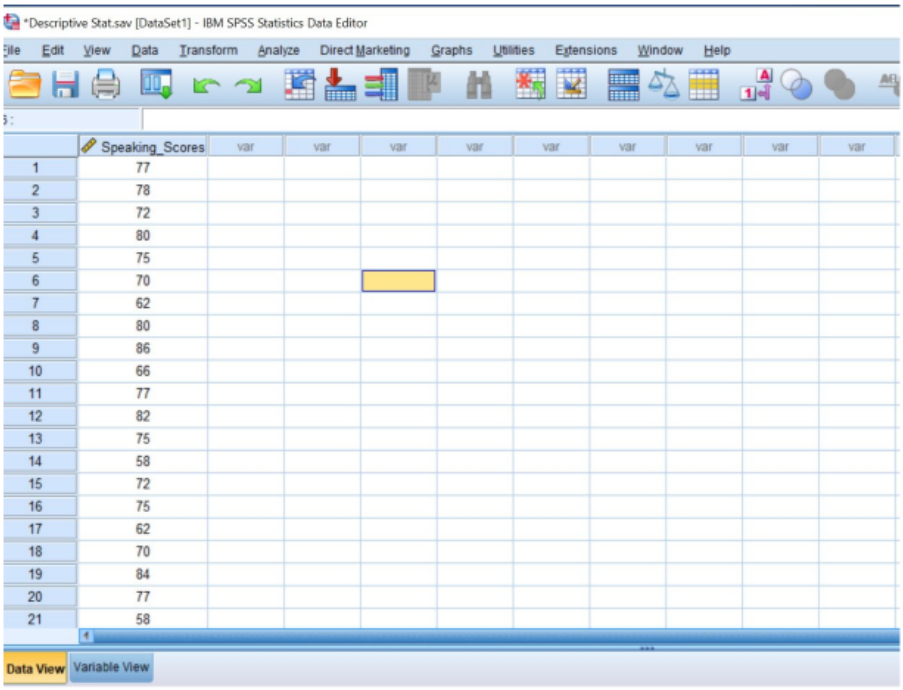


   SPEAKING SCORES therefore in the name you may type Speaking_Scores. However, you should be aware that this parameter will not accept some characters such as space since it is considered illegal. You may not also use arithmetic symbols (+, -) and full stops or dots (.)
2. In the type parameter, you will have some options on which type of data is yours. By default, SPSS will automatically choose NUMERIC as your data type. Numeric type is used when your data contain numbers. If your data are using symbols of alphabetical characters such as MALE or FEMALE or other nominal type data, you should click the three dots in this parameter to choose other types and select STRING. String is used for data that uses characters.
3. WIDTH column displays how many characters or digits can be displayed. If you have long digits and characters in your data you may change this property otherwise let it be by default.

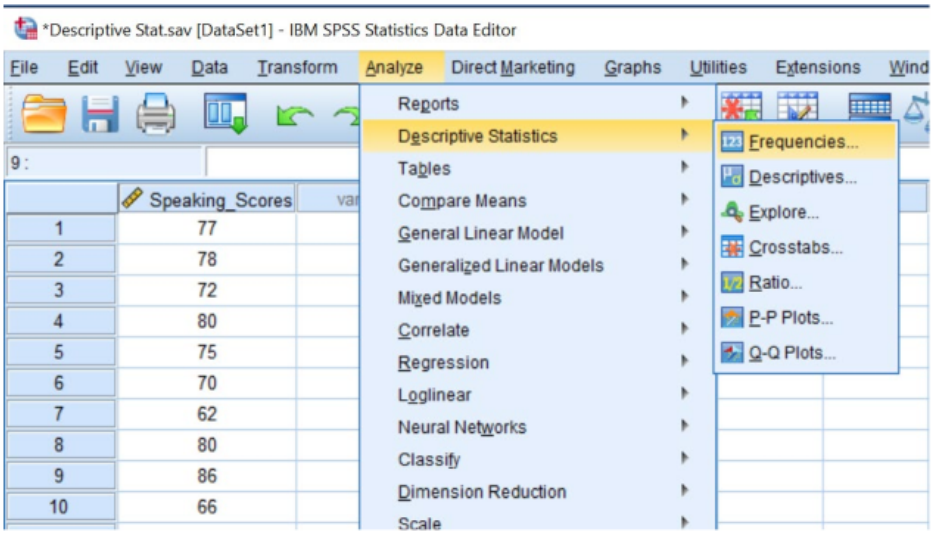
4. DECIMAL property tells you whether your data contain decimals or not, You should look at the number of decimals in your data. If you do not use decimals set it to zero.
5. LABEL property describes the details of the variable name. For instance, if you use an abbreviation or acronym in your variable name you can type what it stands for here. Optionally, you may skip this property or you may copy the name of your variable and put it here.
6. VALUES is a parameter that tells about categories in your data. For instance, if you use GENDER as your variable, you may have two categories (1=Male, 2=Female). In our case with the Speaking scores, we do not use categories, thus set VALUES to NONE.
7. MISSING is the data that will not be processed in the analysis. It offers three options including NONE, DISCRETE MISSING VALUES and RANGE PLUS ONE OPTIONAL DISCRETE MISSING VALUE. In our case, skip this and set it by default.
8. COLUMNS display the width of the column used to display your individual data. Set this to be similar to the width or skip it.
9. ALIGN is an option that enables you to choose the alignment of your data. It is similar to that of Microsoft Word in which you can align your text to LEFT, CENTER, or RIGHT.
10. MEASURE is the option of the scale of your data. It only consists of three options: nominal, scale, and ordinal. A nominal scale is an option for numbers that are used to label, classify or categorize data such as code numbers for gender, schools, nationality etc. the scale option is used for most of interval and ratio data while the ordinal scale is used for data in order or ranks where there is less or more than a concept.



Once the variable properties are set, now switch to the data view to input each individual datum in the speaking scores data. The illustration is as follows. As can be seen in the illustration below, the data is entered in a vertical fashion under the Speaking_Scores variable. Enter all the data from our case.

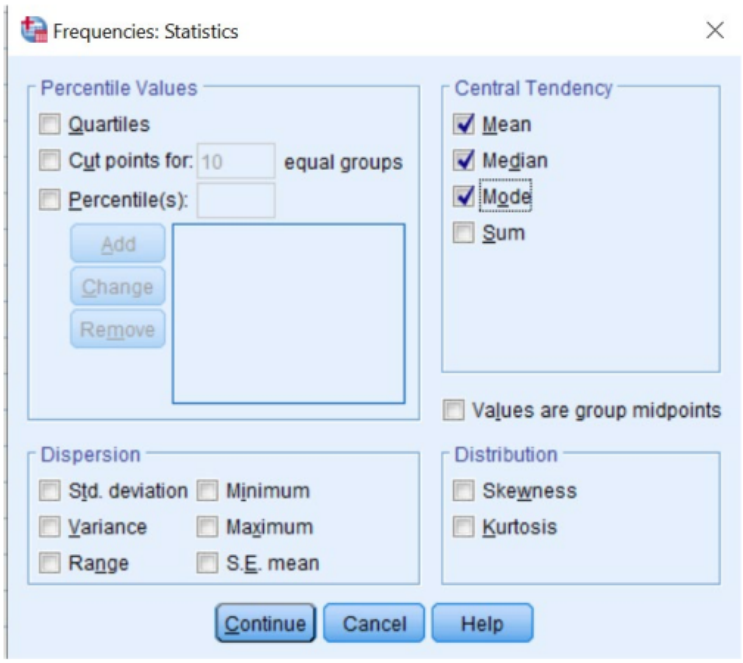


When the data are all entered now it is the time to perform analysis on descriptive statistics on the three measures of central tendency. To find out the three measures in one shot we can choose the option ANALYZE→DESCRIPTIVE STATISTICS→ FREQUENCIES.



Once this step is executed, a dialog box will appear asking you to choose which variable you would like to analyze.

Choose Speaking _Scores variable by clicking the variable name and the arrow and then click the statistics button. Note that you may uncheck DISPLAY FREQUENCY TABLES. An extra dialog box will appear.



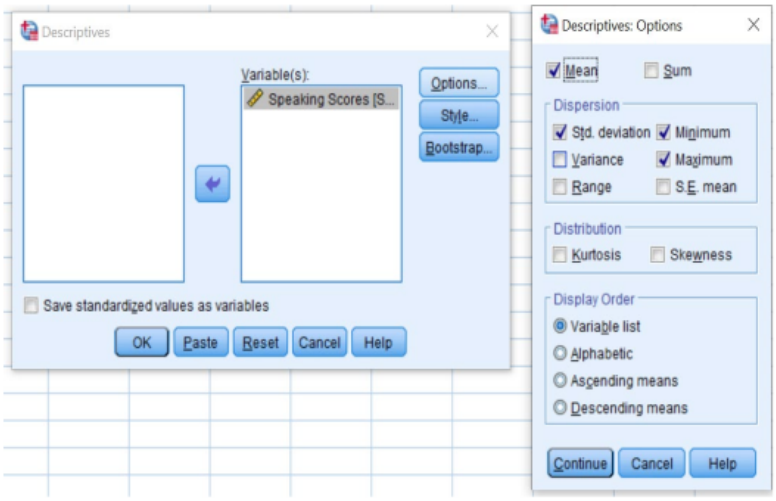
Check or tick the three measures we want to analyze (Mean, Median, Mode) then click continue and OK. The output will afterward appear.

Statistics

Speaking Scores

N	Valid	30
	Missing	0
Mean		73.77
Median		75.00
Mode		75

Alternatively, you may opt to use another option the ANALYZE option. You use the following procedure: ANALYZE→DESCRIPTIVE STATISTICS→DESCRIPTIVES to find the MEAN and other measures such as minimum and maximum scores.



Building Graph in SPSS

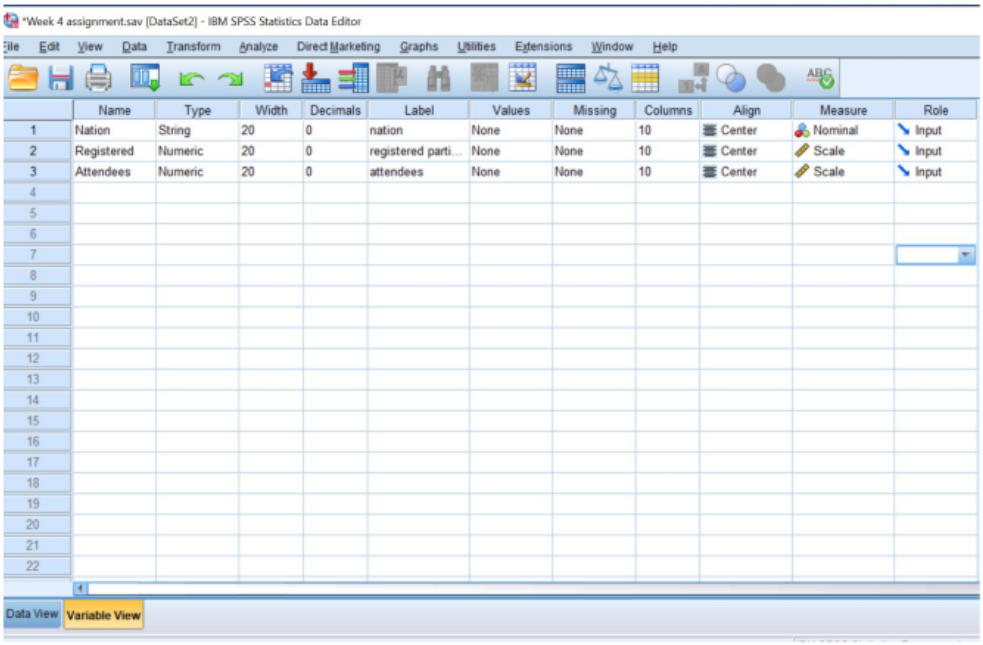
Often, data presented in a graph is eye candy for some readers as not only does it displays attractive shapes but also the summary of data which can help faster reader's understanding of your data. When working with SPSS to display graphs, you will have a lot of options including whether to use bar graphs, pie charts, line charts or histograms. Now, we will practice building a graph based on the following data.

The following are data of participants in an international workshop categorized based on their nations and numbers. Display them in bar charts.

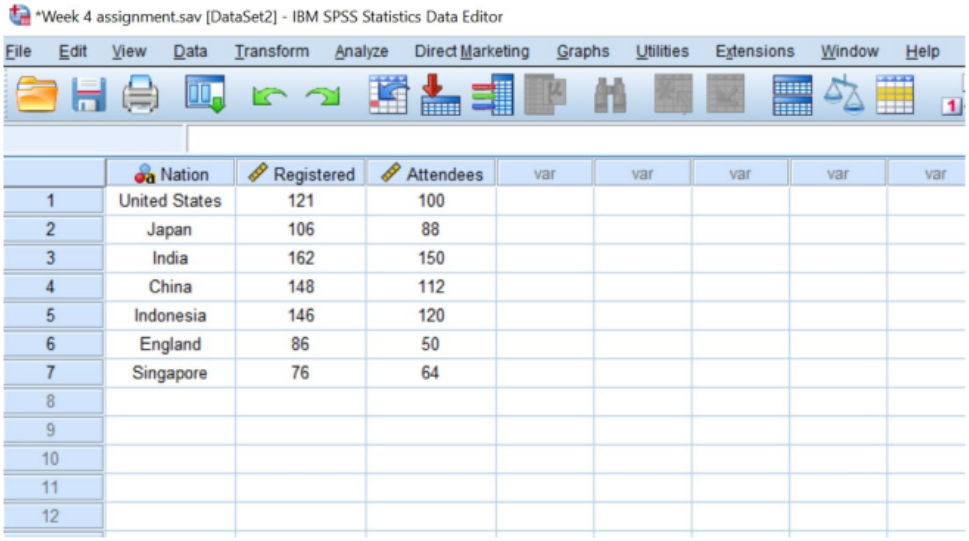
Nation	Registered	Attendees
United States	121	100
Japan	106	88
India	162	150
China	148	112
Indonesia	146	120
England	86	50
Singapore	76	64

As can be seen in the table, there are three variables in the data (Nation, Registered, and attendees), and all but Nation is numeric data. To create the graph for these data, first, we need to enter the variable and data into SPSS. Use a similar procedure of entering data as described in the previous section. Once the data are entered, the display of your data will look like the following.

Variable View

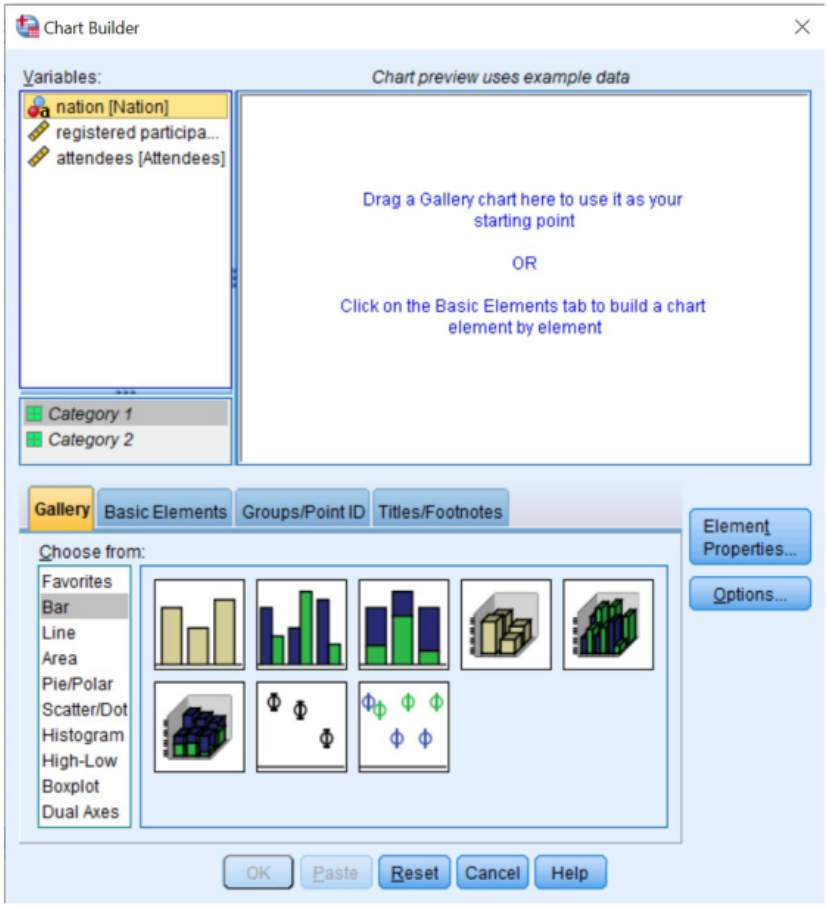


Data View

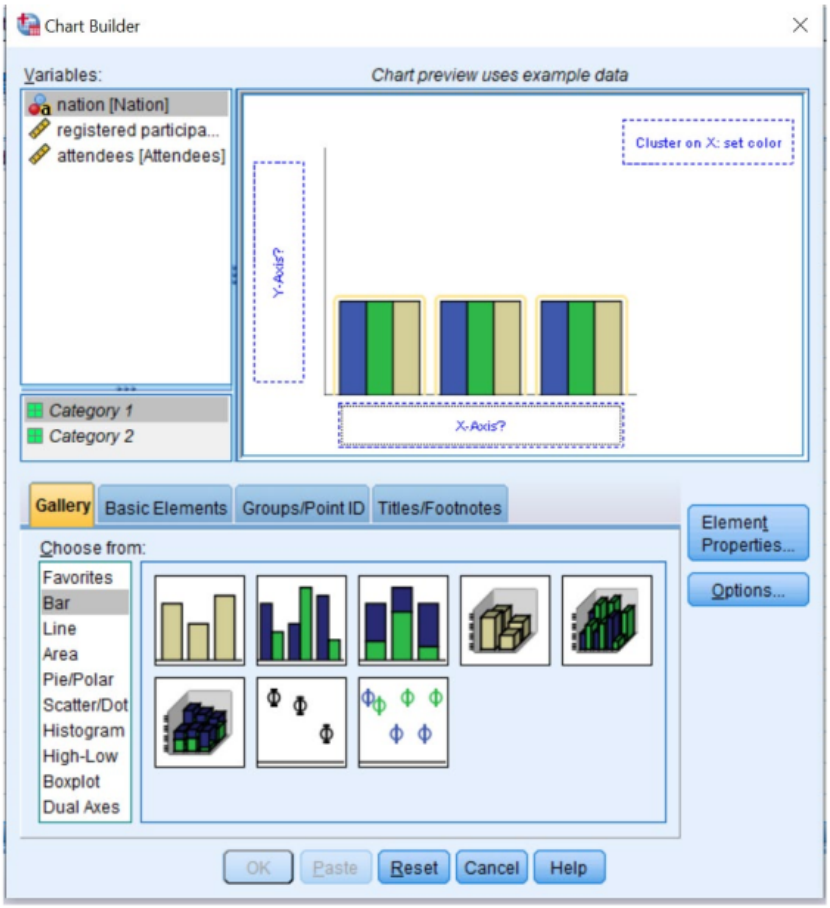


To create the graph, follow the procedure below.

1. Make sure all the data are already entered into SPSS and no data are left out.
2. Select option GRAPH→CHART BUILDER and a dialog box will appear as can be seen in the following illustration.

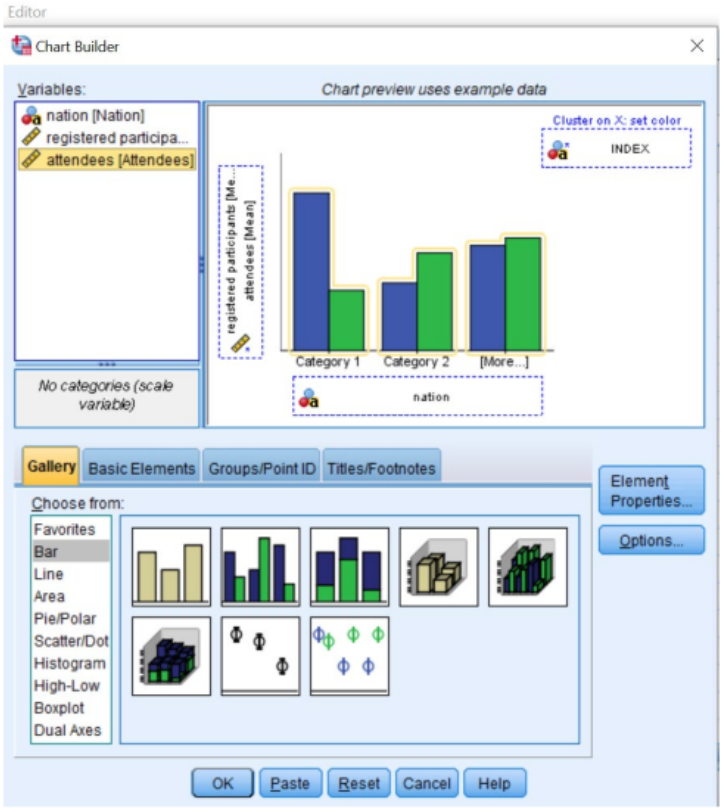


The dialog box above offers you plenty of options for graph building. For the basics, let's choose BAR. To do so, DOUBLE CLICK one of the available graphs in the gallery or drag it into the chart preview.

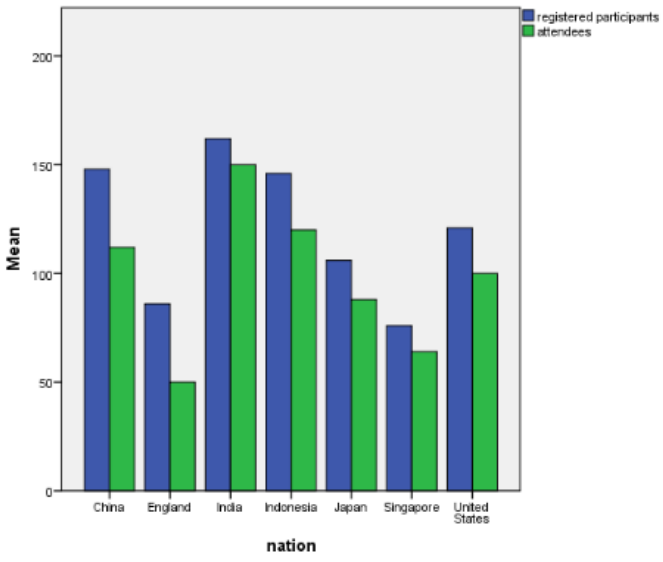


Since our data have three variables, we need to use the clustered bar in which variable NATION will be placed on the X-Axis while the remaining two are on the Y-Axis.

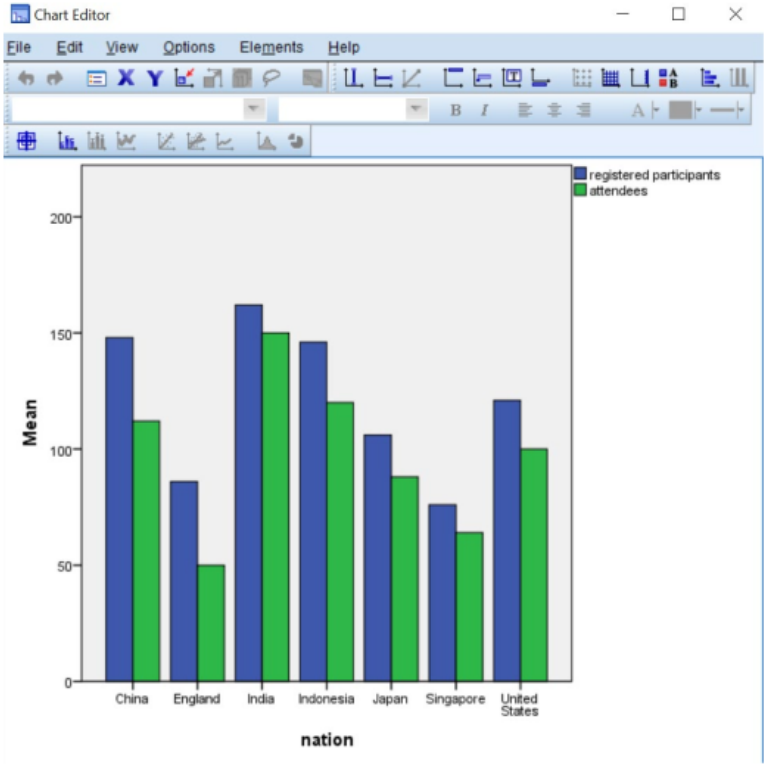
Drag Nation to X-Axis and the other variables to Y-axis. Note that when you put two variables on y-Axis you need to do this one by one. After the first variable is already dragged, drag the second variable into + symbol in the Y-axis.



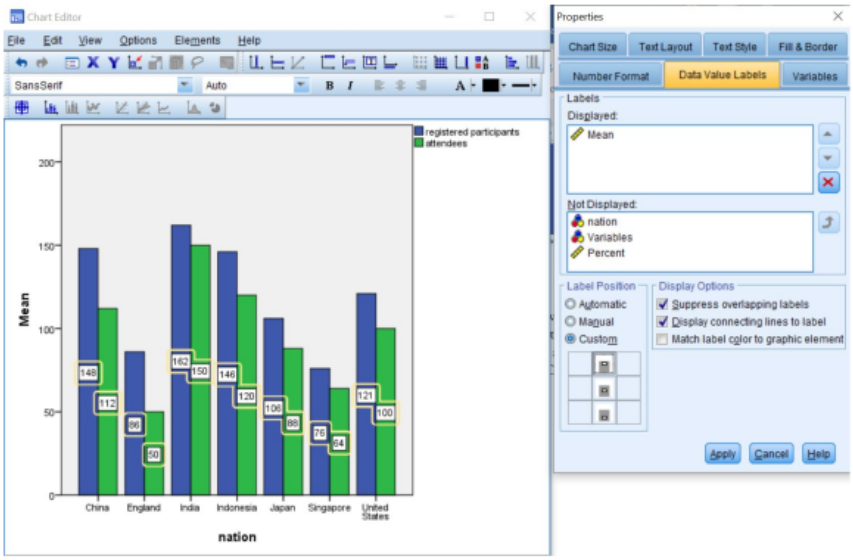
The last step of this procedure is to click OK and the output graph will look like the following.



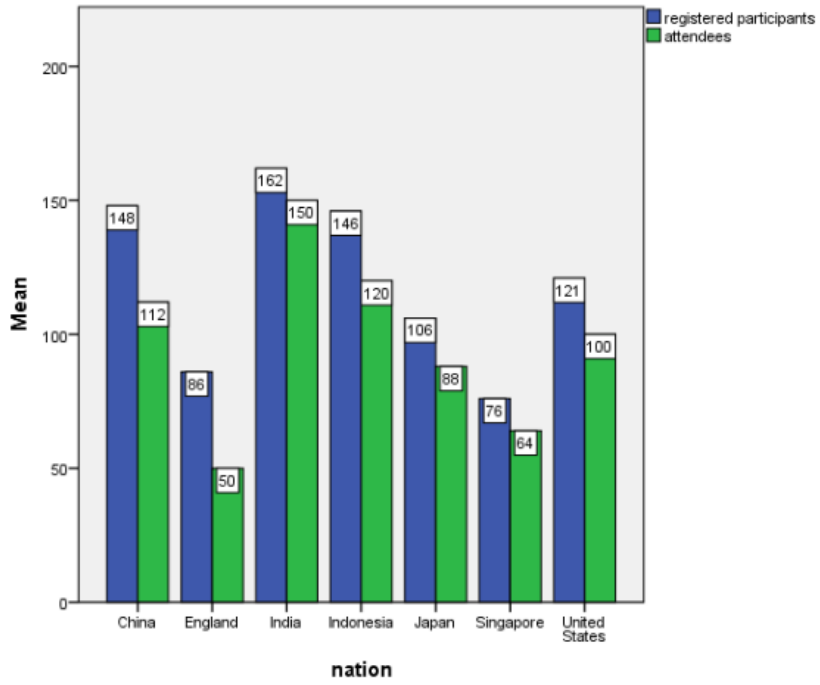
As you can see, the graph describes the registered and attended based on their nationalities. However, this graph does not show the exact number for each variable. To display the number of attendees and registered participants you can edit in the graph editor in the output document. To do so, double-click the graph, and the following workspace will appear.



In the workspace, we can edit multiple items including the variable names, the font used, and so forth. To display the number of attendees and registered participants, click ELEMENTS→SHOW DATA LABELS. A dialog box will then appear. On the label position option, choose custom and now you can place the number on the center, below, or above the center. Choose the above center and click APPLY let's see how it works.



Now, our graph display the number of registered participants and attendees.



To create another chart similar, the procedure can be carried out except for the chart selection in the gallery.

Inferential Statistics

Hypothesis Testing for Correlational Study

Now we're going to carry out an analysis based on the exercise but first, we need to get down to the theory. Whether you do correlation or experimental research, what you need to pay attention to is that you're going to test a hypothesis. Therefore, we need to describe the major steps in testing a hypothesis.

The first step is to state a hypothesis for the correlation or experimental research. There are a lot of alternatives you can use, for example:

- There is a correlation between TOEFL IBT and IELTS scores
- There is a positive correlation between TOEFL IBT and IELTS scores
- Success in IELTS can be associated with success in TOEFL IBT
- Students who have high TOEFL IBT scores will likely have high IELTS scores
- There is a linear relationship between TOEFL IBT and IELTS scores

The next step is to determine the level of significance. Normally, we have two options when determining the level of significance: 0.05 and 0.01. 0.05 or 5% means that if we multiply our study one hundred times, we're confident to say that the results will be the same for 95 out of 100 studies. Only five have the probability of different results. Since we're on social science, it is suggested that you use 0.05 level of significance.

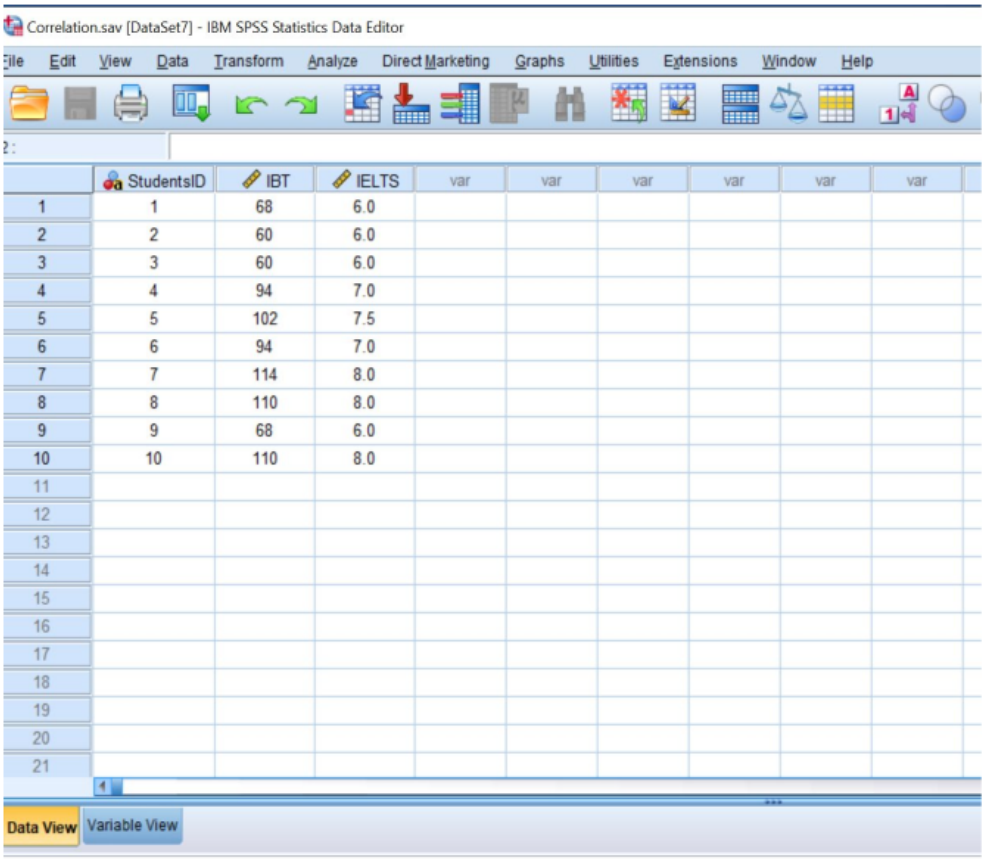
The next step is to determine the suitable test statistic. Since we're now dealing with correlation studies, we should proceed to use certain test statistics. The most commonly used test statistic for correlation is Pearson Product Moment which belongs to parametric statistics (Statistics you used when your data are interval or ratio). However, there are several Test Statistics that can be used depending on the data types and characteristics. For instance, if you have ordinal data, you are suggested to use Spearman rank correlation or when you have dichotomous nominal data such as gender, you have to opt to use Point-biserial Correlation (rpb). In our case, we assume that the data is

normal and the data are both in the form of an interval scale. Therefore, we choose Pearson product-moment.

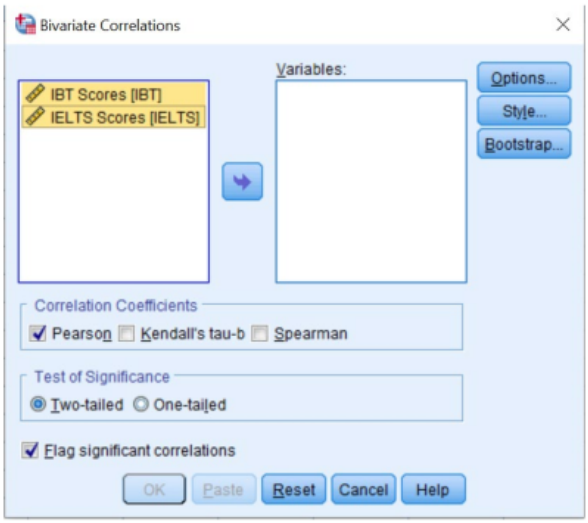
Let's try to use the SPSS. Now, please input the data in the following exercise into SPSS.

No.	TOEFL IBT	IELTS
1	68	6.0
2	60	6.0
3	60	6.0
4	94	7.0
5	102	7.5
6	94	7.0
7	114	8.0
8	110	8.0
9	68	6.0
10	110	8.0

Once all the data from the table above are entered into SPSS, the data view of your workspace will look like the following. If you have problems entering the data, follow a similar procedure to the previous section of this tutorial.



To perform correlational analysis using Pearson product-moment, click Analyze, then choose Correlate, then Bivariate. A dialog box will then appear.



- Choose the two variables to correlate and click the arrow. In the Coefficient option, choose/tick Pearson, and in the test of significance use Two-tailed. Two-tailed hypothesis testing is used with a non-directional hypothesis such as 'There is a correlation between TOEFL IBT and IELTS scores' otherwise, one-tailed hypothesis testing is used with a directional hypothesis such as 'There is a positive correlation between TOEFL IBT and IELTS scores.
- Do not forget to tick 'flag significant correlations' as it will tell you whether the correlation is statistically significant or not.
- The last step is to click OK and the output will appear.

Correlations

		IBT Scores	IELTS Scores
IBT Scores	Pearson Correlation	1	.984**
	Sig. (2-tailed)		.000
	N	10	10
IELTS Scores	Pearson Correlation	.984**	1
	Sig. (2-tailed)	.000	
	N	10	10

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

In the output, SPSS tells you that the correlation is significant. However, you should carefully interpret this coefficient because statistically 'significant' does not mean a strong or weak correlation. Significant means not zero, therefore there is a correlation in the analysis. If you want to know how strong the correlation is, look at the correlation coefficient 0.984 in our case. It falls within a very strong category. To sum up, SPSS will automatically help you analyze and interpret the data, yet you need to make sure to input the correct data. If the correlation is significant, then you can state that the Ha is accepted and Ho is rejected or vice versa. To determine the magnitude of the

correlation, compare the correlation coefficient in the SPSS output with Evans' (1996) category of correlation.

Hypothesis Testing for Experimental Study

Paired-Samples T-test

This section is on t-test which is usually used for experimental research to test whether there is a significant difference between means. There are at least three different types of experimental research: pre-experimental, quasi-experimental, and true experimental. In many of TBI students' theses, I noticed that they mostly used pre-experimental research with one group pretest-posttest design and quasi-experimental with non-equivalent control group pretest-posttest design.

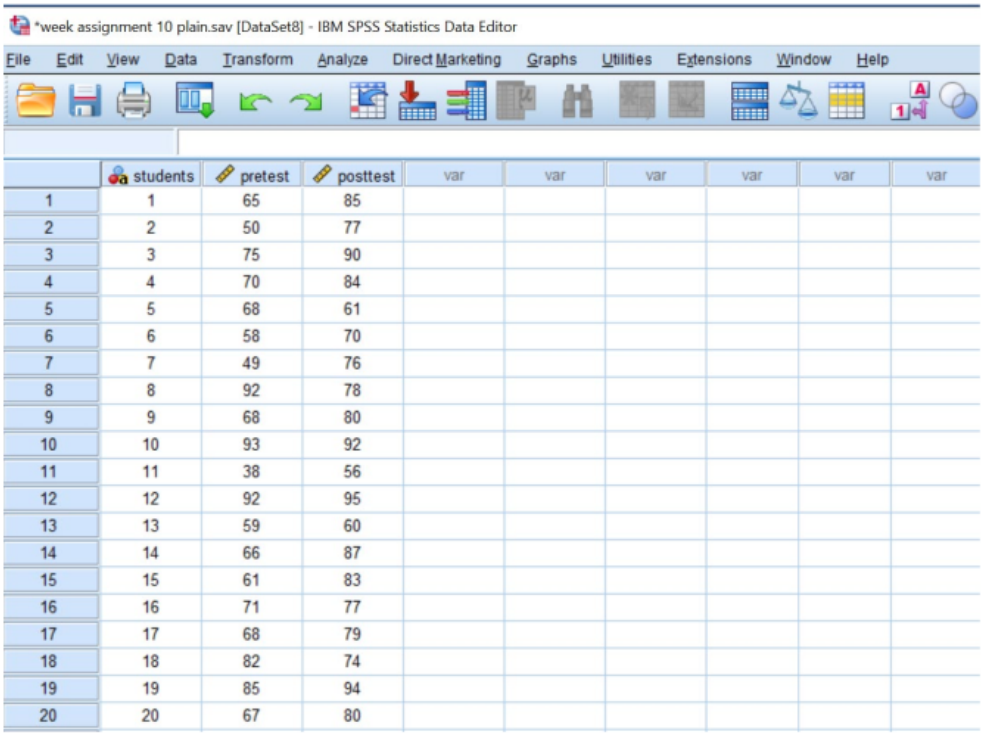
Let's start with one group pretest-posttest design. For this kind of design, you are suggested to use a paired-sample t-test. paired sample t-test is used to compare means of single group pretest and posttest.

Suppose you're required to measure the effect of STAD cooperative learning model on students' extensive reading ability and you have the following data.

Students	Pretest	Posttest
1	65	85
2	50	77
3	75	90
4	70	84
5	68	61
6	58	70
7	49	76
8	92	78
9	68	80
10	93	92
11	38	56
12	92	95
13	59	60
14	66	87

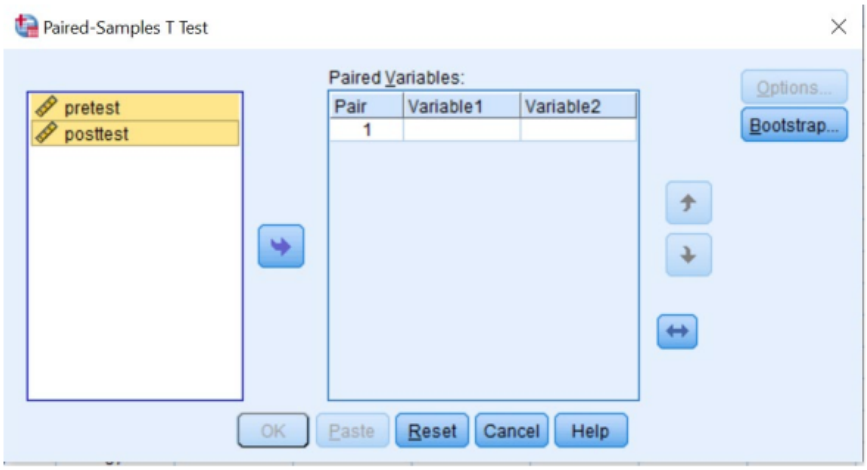
15	61	83
16	71	77
17	68	79
18	82	74
19	85	94
20	67	80

However, you need to state the hypothesis first. For example, Students' who are taught using STAD will have better achievement in extensive reading than those who are not.



	students	pretest	posttest	var	var	var	var	var	var
1	1	65	85						
2	2	50	77						
3	3	75	90						
4	4	70	84						
5	5	68	61						
6	6	58	70						
7	7	49	76						
8	8	92	78						
9	9	68	80						
10	10	93	92						
11	11	38	56						
12	12	92	95						
13	13	59	60						
14	14	66	87						
15	15	61	83						
16	16	71	77						
17	17	68	79						
18	18	82	74						
19	19	85	94						
20	20	67	80						

Once you entered the data the next step is to select ANALYZE→COMPARE MEANS→PAIRED-SAMPLES T-TEST then a dialog box will appear.



Make sure to choose the variables to compare. In our case choose pretest and posttest then click the arrow. Afterward, click OK. Now, Let's see the output.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	68.85	20	14.759	3.300
	posttest	78.90	20	10.886	2.434

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	pretest - posttest	-10.050	11.523	2.577	-15.443	-4.657	-3.900	19	.001

From your analysis, I can conclude that the mean score of the posttest (78.90) is higher than that of the pretest (68.85). However, is the difference between 78.90 vs 68.85 significant? Let's check the sig. in the right part of the

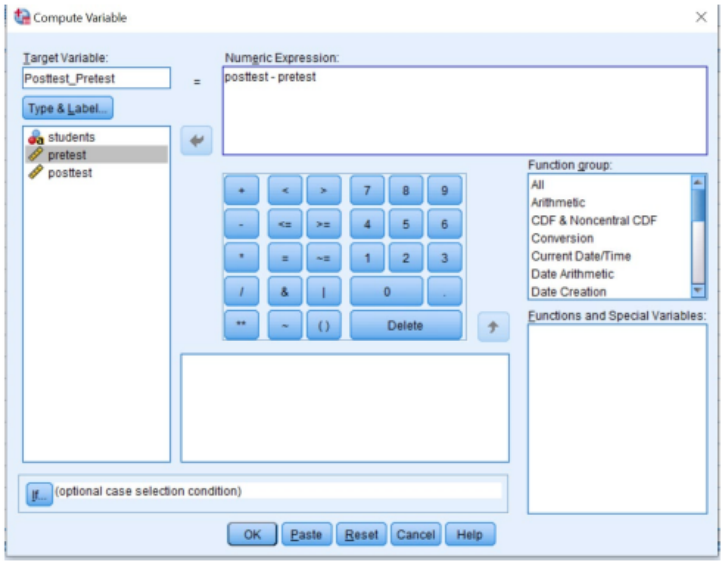
table. The sig. (0.001) is < level of significance (0.01 or 0.05), therefore we can claim that the mean of posttest scores is significantly higher/better than that of the pretest. In other words, from a statistic viewpoint, STAD is an effective method in teaching reading as it statistically improves the students' reading comprehension.

Size Effect

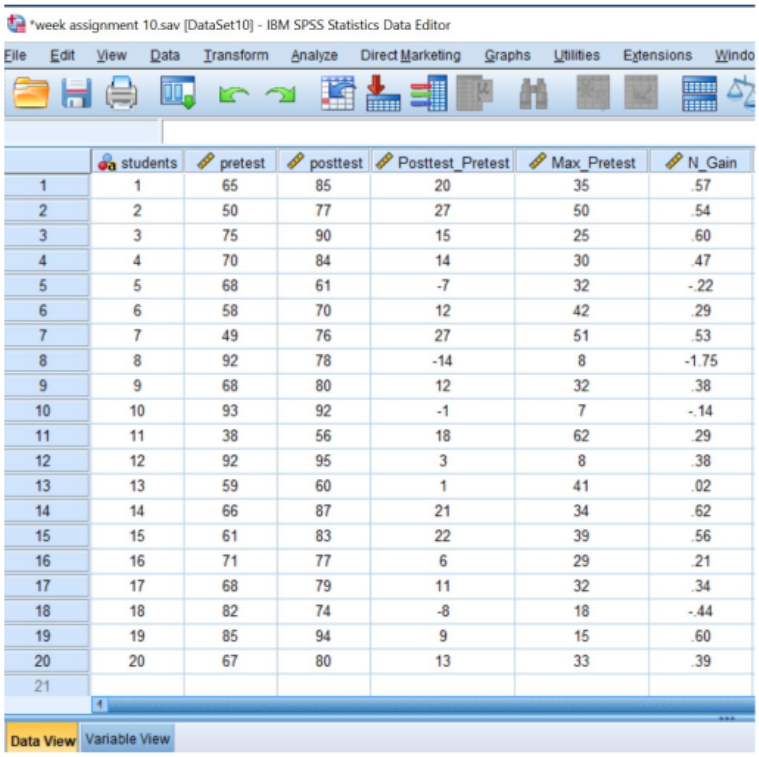
We found out that the difference between mean scores of pretest and posttest was significant, but we did not know how strong the effect of the instruction (STAD) was. We need to determine the magnitude of the effect or effect size. In general, there are two common ways of measuring such effect strength. We can use either Cohen effect size or N-Gain (Normalized-Gain) Analysis. Here, we'll focus on N-Gain analysis. The following is the formula of N-Gain analysis.

$$\text{Normalized Gain } (g) = \frac{\textit{Posttest Score} - \textit{Pretest Score}}{\textit{Maximum Score} - \textit{Pretest Score}}$$

To calculate N-gain in SPSS we need to create three extra variables I addition to the existing ones. These variables are Posttest_Pretest, Max_Pretest, and N_Gain. To create these new variables, we can use TRANSFORM→COMPUTE VARIABLE. Create a new variable Posttest_Pretest on the Target Variable then move the posttest variable to the right, add a minus (-), and after that move the Pretest variable to the right. Do a similar procedure for creating Max_Pretest and N-Gain variable. Note that in creating Max-Pretest variable, in the numeric expressions, you have to use 100-pretest while in creating N_Gain variable you use Posttest_Pretest/Max_Pretest.



Here are the looks of all new variables.



	students	pretest	posttest	Posttest_Pretest	Max_Pretest	N_Gain
1	1	65	85	20	35	.57
2	2	50	77	27	50	.54
3	3	75	90	15	25	.60
4	4	70	84	14	30	.47
5	5	68	61	-7	32	-.22
6	6	58	70	12	42	.29
7	7	49	76	27	51	.53
8	8	92	78	-14	8	-1.75
9	9	68	80	12	32	.38
10	10	93	92	-1	7	-.14
11	11	38	56	18	62	.29
12	12	92	95	3	8	.38
13	13	59	60	1	41	.02
14	14	66	87	21	34	.62
15	15	61	83	22	39	.56
16	16	71	77	6	29	.21
17	17	68	79	11	32	.34
18	18	82	74	-8	18	-.44
19	19	85	94	9	15	.60
20	20	67	80	13	33	.39
21						

The final step in N-Gain analysis is to find out the mean of the N-Gain. Using the same procedure of finding the mean as we did in the

previous topic, find the mean of the N-Gain. The output from SPSS is as follows:

Report

N_Gain

Mean	N	Std. Deviation
.2114	20	.54936

As can be seen, the mean of the N-Gain is 0,211 and to interpret this we need to use a reference.

Value $\langle g \rangle$	Classification
$\langle g \rangle \geq 0{,}7$	High
$0{,}7 < \langle g \rangle \leq 0{,}3$	Medium
$\langle g \rangle < 0{,}3$	Low

(Hake, 1998)

Referring to the category above, our N0Gain mean falls within the low category. Therefore, the magnitude of the effect of STAD on extensive reading ability is low or weak.

Independent Samples t-test

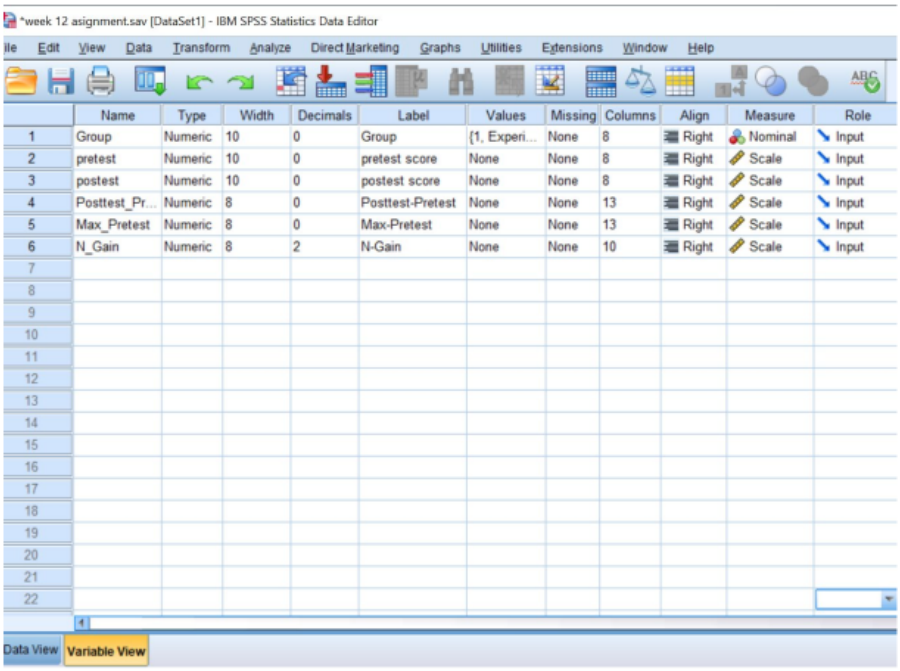
The analysis for the **Independent Samples t-test** will look like what we did in **Paired-Samples t-test.** Let's try to contextualize it first. Suppose that you are researching the effect of digital storytelling on students' writing skills. In this case, you decide to have one group of students who are taught using digital storytelling (experimental) and another group that is not (control). You also administered a pretest as well as a posttest to the two groups and the results are as follows.

Students	Experimental Group		Control Group	
	Pretest	Posttest	Pretest	Posttest
1	76	96	76	92
2	72	88	74	92
3	72	100	68	84

4	68	88	68	80
5	68	92	66	84
6	68	96	66	88
7	64	88	64	80
8	64	96	62	80
9	64	80	62	80
10	64	88	62	84
11	64	96	62	88
12	64	100	60	84
13	60	100	60	84
14	60	100	58	76
15	60	76	58	80
16	60	88	58	88
17	60	88	58	80
18	56	84	54	84
19	56	68	54	60
20	56	60	54	72
21	56	96	54	84
22	52	92	52	76
23	52	84	52	72
24	52	76	52	80
25	48	100	50	88
26	48	88	50	76
27	48	96	48	64
28	44	100	46	80
29	32	88	42	60
30	28	84	34	56
31	10	76	34	48

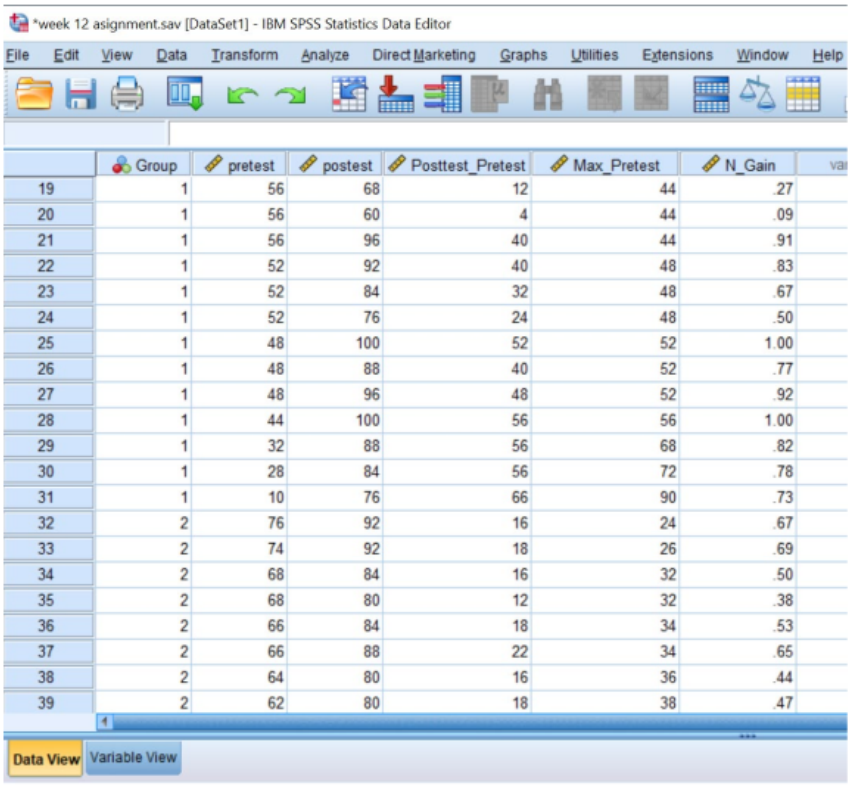
You may hypothesize that students who are taught using digital storytelling will perform better in writing than those who are not or digital storytelling affects students' writing skills.

To analyze the data above, first, you need to enter all the data into SPSS by defining the variables first.



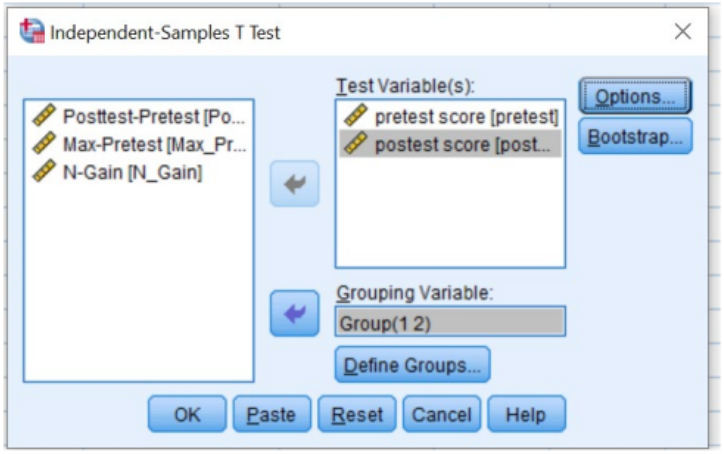
As illustrated above, the basic variable that we need to create is threefold: Group variable, Pretest, and Posttest variable. The group variable serves to distinguish the experimental from the control group. Since this variable is categorical, the scale used is nominal. You should also define the values for the group variable. Use 1 for the Experimental and 2 for the control group. Similarly, for the N-Gain Analysis, create variables similar to what we did in paired-sample t-test.

When entering the data, you should also be aware that the data in the table above is entered differently from those in SPSS. In SPSS, the data of pretest and post-test of each group is in one column and is arranged vertically. Look at the illustration below.



	Group	pretest	postest	Posttest_Pretest	Max_Pretest	N_Gain
19	1	56	68	12	44	.27
20	1	56	60	4	44	.09
21	1	56	96	40	44	.91
22	1	52	92	40	48	.83
23	1	52	84	32	48	.67
24	1	52	76	24	48	.50
25	1	48	100	52	52	1.00
26	1	48	88	40	52	.77
27	1	48	96	48	52	.92
28	1	44	100	56	56	1.00
29	1	32	88	56	68	.82
30	1	28	84	56	72	.78
31	1	10	76	66	90	.73
32	2	76	92	16	24	.67
33	2	74	92	18	26	.69
34	2	68	84	16	32	.50
35	2	68	80	12	32	.38
36	2	66	84	18	34	.53
37	2	66	88	22	34	.65
38	2	64	80	16	36	.44
39	2	62	80	18	38	.47

To perform **Independent Samples t-test,** click ANALYZE→COMPARE MEANS→INDEPENDENT-SAMPLES T-TEST then a dialog box will appear.



Make sure to move the pretest score and posttest score variable to the Test Variable(s) and Group to group variable. Once this is done, click OK.

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
pretest score	Experimental Group	31	56.32	13.741	2.468
	Control Group	31	56.71	9.860	1.771
posttest score	Experimental Group	31	88.77	9.982	1.793
	Control Group	31	78.19	10.625	1.908

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
pretest score	Equal variances assumed	1.064	.307	-.127	60	.899
	Equal variances not assumed			-.127	54.418	.899
posttest score	Equal variances assumed	.033	.857	4.041	60	.000
	Equal variances not assumed			4.041	59.768	.000

As you can see from the output, the mean of the pretest from the experimental group is 56.32, while that of the control group is 56.71. These values look similar. In terms of posttest, the mean of the experimental group is way higher than the control group (88.77 vs 78.19). However, we need to see the t-test to see whether these means are significantly different. Remember the decision rules first,

When sig. > Alpha (0.05 or 0.01), there is no significant difference between means.

When sig. < Alpha (0.05 or 0.01), there is a significant difference between means.

Therefore, the mean scores between the experimental and control group in the pretest are not significantly different (sig. 0.899>0.05). In contrast, the mean scores between the experimental and control group in the posttest are significantly different (sig. 0.000<0.05).

We already did the independent samples t-test and proceeded to the N Gain analysis. From the data we obtaining the N-Gain means for the experimental group is 0.740 (High category) while for the control group is 0.511(Average category). Do you know what this implies? The treatment for the experimental group is much effective in comparison with that for the control group. Your conclusion when doing experimental research should sound like this, and your research is done. Therefore, the hypothesis that states students who are taught using digital storytelling will perform better in writing is accepted.

H. SUMMARY

Tools and apps for research are nowadays imperative to use to support the research process and to make the process more efficient. Each of these tools needs mastery and constant training by the users. We also need to use the tools by caution as technology is not totally reliable. The user's role is also important. For instance, when using grammarly for grammar and spelling checking, often it misleads and suggests unncessary revision. To overcome this basic understanding of grammar is needed in advance. When using Quillbot for paraphrase, not all paraphrased text by quillbot is appropriate.

There are times when the replaced words are inappropriate hence it needs manual editing. This also applies to all applications and tools. In many cases, the metadata in reference manager sometimes is incomplete and we need to add more information manually.

I. EXERCISE

1. What are the functions of these tools:
   a. Grammarly
   b. Quillbot
   c. Zotero
   d. Mendeley
   e. SPSS
2. What are the procedures of using the applications listed above?
3. What are the problems posed when using the applications and how to overcome it.
4. How to input and analyze data in SPSS for experimental and correlational research study?

J. SUGGESTED READINGS

Cohen, L., L. Manion, and K. Morrison. *Research Methods in Education*. Taylor & Francis, 2017. https://books.google.co.id/books?id=iaQ5DwAAQBAJ.

Creswell, John W, and J David Creswell. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage publications, 2017.

Creswell, J.W. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Pearson, 2015. https://books.google.co.id/books?id=5pYEngEACAAJ.

Creswell, J.W., and J.D. Creswell. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications, 2017. https://books.google.co.id/books?id=335ZDwAAQBAJ.

Muijs, Daniel. "Introduction to Quantitative Research." *Doing quantitative research in education with SPSS* (2004): 1–12.

Te Grotenhuis, Manfred, and Anneke Matthijssen. *Basic SPSS Tutorial*. Sage Publications, 2015.

Field, Andy. *Discovering Statistics Using IBM SPSS Statistics.* sage, 2013.

UNIT 10: WRITING YOUR RESEARCH REPORT

A. INTRODUCTION

Writing the research report is as important as the research process itself and it can be a daunting task. Different higher education institution seems to likely have different formats from their students, ut at least they have things in common that is the generic structure. In this section, you will learn how to craft a research report in the form of a thesis beginning from cover to the appendices section. Although the format used in this section cannot apply to all different institutions, you can still learn how to structure your thesis in a well manner.

B. LEARNING OBJECTIVES

By the end of this unit, you should be able to:

- Write different parts of a thesis appropriately
- Precisely write required information for different parts of thesis

C. THESIS FORMAT

Basically, the content of your thesis should be similar to your proposal particularly in Introduction and literature review section. The main differences between your thesis and thesis proposals are as follows:

1. Write your thesis in chapters, while for your thesis proposal you do not have to.
2. In your thesis, do not use the research schedule
3. From your research method until the conclusion, use mainly past tense since your data collection was carried out.
4. To complete your thesis, you should extend all the contents of your proposal to Research Results and Findings as well as the Conclusion and suggestions.
5. When necessary, provide appendices for your thesis.
   In the context of UIN Mataram, your thesis should be typed using Times New Roman 12 pt with two line space. However, when making direct quotation or lengthy titles of figures, one space

should be used. In addition to these, the title for each chapter should be typed in capitals, while the subchapter is typed with Capitalized each content word's first letter except for function word. The margin for your thesis should follow the following guideline.

Top margin	4 cm
Bottom margin	3 cm
Left margin	4 cm
Right margin	3 cm

Titles for tables should be positioned on top of the table with centered alignment, while titles of figures or pictures are put under the figures with centered alignment too.

D. THE STRUCTURE OF A THESIS

CHAPTER I: INTRODUCTION

A. Background of Research
B. Statement of the Problem and Research Limitation
C. Purposes and Significance of the Research
D. Definition of Key Terms

CHAPTER II: REVIEW OF RELATED LITERATURE

A. Review of Previous Research
B. Theoretical Bases
C. Research Hypotheses

CHAPTER III: RESEARCH METHOD

A. Approach and Type of Research
B. Population and Samples
C. Setting and Time of Research
D. Variables of Research
E. Design of Research
F. Instruments of Research
G. Procedure of Data Collection
H. Technique of Data Analysis

CHAPTER IV: RESEARCH RESULTS AND DISCUSSION

A. Research Results
B. Discussion

CHAPTER V: CONCLUSIONS AND SUGGESTIONS

A. Conclusions
B. Suggestions

Descriptions of the Structure

Background of Research

This section serves to acquaint your readers with your study. In this section, you are required to:

1. Contextualize your research and provide necessary background information to clarify the context.
2. Inform your readers why your research topic is important and timely
3. Build a case for the statement of the problem to follow
4. Highlight the main theoretical constructs that you will describe in your literature review.

Statement of the Problem and Research Limitation

Statement of problem defines what you investigated in your research as it clarifies, outlines, limits and brings into existence the expression of the problem you want to investigate. Statement of problem serves to provide direction of your study and unify all the efforts you undertook to carry out the study. Usually, the problem emerges as a result of one of the following circumstances:

1. No or little existence of study on a particular topic
2. Some research was conducted yet with inadequate samples or situations to be considered reliable.
3. Lots of research on the topic but the findings are inconsistent or contradictory.
4. Two theories explaining the same phenomenon but recommend different outcomes.

In addition, once you defined your problems, you are obliged to state your research questions that help narrow the focus of your study. In this respect, you should determine what types of research questions (descriptive, relationship or difference) you want to use based on the problems. Here are some examples of research questions:

a. What are the students' perceptions of the ESS course book and its online component?
b. Are students' listening comprehension ability and their oral English ability correlated?
c. Is there a difference between English Language Teaching pre-service teachers who have only traditional writing instruction, and those who have online discussion, and online feedback in terms of their English Language writing performance?

The final part of this section is the research limitation. It is not under the researcher's control, yet the circumstances affect how the research is conducted. You should carefully distinguish between limitation and delimitation.

Purpose and Significance of the Research

The purpose of the study helps to solve the stated problem. Therefore, this section is designed to provide a brief overview of how you plan to solve the problem defined in the statement of the problem section. On the other hand, significance of the study highlights your arguments that your study makes a significant contribution to the field. You also need to convince your readers that your research topic is worthy of investigation. To help you think about what the significance of the study looks like, you need to consider the following questions:

1. Why is my research valuable?
2. Will it revise, extend or create new knowledge?
3. Does it have theoretical and practical application?

Definition of Key Terms

In this section you should define the key terms that are central in your research in alphabetical order. You need to provide the definitions for the following elements:

1. Variables in the research questions or hypotheses
2. Attributes of a population
3. Theories or models upon which your research is based

Review of Related Literature and Research Hypothesis

In review of related literature, you should provide the basic rationale from which your statement of problem, research question, hypothesis and research design will emerge. Your literature review should also reflect the following aspects:

1. Historical background for your research topic
2. The current status of your research topic or state of the art
3. The support for your research purposes
4. Gap identification in the literature
5. Awareness of the variables relevant to the topic
6. Understanding of previous research cited
7. Identification of leading scholars on the field
8. Proposal of useful theoretical constructs for your study
9. Understanding of the application of certain methodological procedures
10. Comparison between studies that will help you later analyze and interpret the data.

In writing literature review, you may organize it into a funnel structure which means more general information is discussed first and the most closely related information to your research is discussed last. Your literature may have several sections with headings and subsections. You can prioritize which literature you will include in your review based on the following categories: material which is mostly related to your study should be discussed in details, some materials that should be briefly discussed, and some tangential material which may or may not be included. When

writing literature review you should also avoid plagiarism and attribute the sources from which you cited.

In the last part of this section, you should clearly state the hypotheses for your study. Research hypothesis predicts an expected result of your study. It should also be in line with your research questions. Avoid the use of the word SIGNIFICANT or SIGNIFICANCE in your research questions or hypotheses as the terms usually refer to test of statistical significance. Normally, you need to state Null (Ho) and alternate hypothesis (Ha) based on the research questions that guide your study. Here are some examples of research hypothesis:

a. Ha: Students' listening comprehension ability and their oral English ability are correlated
   Ho: Students' listening comprehension ability and their oral English ability are not correlated
b. Ha: There is a difference between English Language Teaching pre-service teachers who have only traditional writing instruction, and those who have online discussion, and online feedbacks in terms of their English Language writing performance.
   Ho: There is a difference between English Language Teaching pre-service teachers who have only traditional writing instruction, and those who have online discussion, and online feedbacks in terms of their English Language writing performance

Research Method

1. **Approach and Type of Research**

   In this subsection, you are required to define whether you use Quantitative, Qualitative, or mixed-method approach. You should also provide sufficient background information to justify your decision. The next stage is to state what type of research your research is. In quantitative research, you will likely to use one of the following types:

5. Descriptive Research
6. Correlational Research
7. Causal-Comparative Research (Ex Post Facto)
8. Experimental Research (pre experimental, quasi experimental, true experimental)

2. Population and Samples

In this subsection, you should provide information about the description of number and the background of your research population as well as samples. You also need to highlight how you select the samples whether you use random or non-random sampling. The following are some of major sampling techniques used for quantitative research:

8. Simple random sampling
9. Stratified random sampling
10. Cluster sampling
11. Systematic sampling
12. Convenience sampling
13. Quota sampling
14. Purposive sampling

3. Setting and Time of Research

This subsection requires you to provide specific information about where and when your research is going to be carried out.

4. Variables of Research

This subsection should represent the information on the variables you use in your quantitative research. As of quantitative research, there are various types of variables you should clarify in your research. In experimental research, for instance, you will likely use two types of variable: Independent and dependent variable. The former designates the manipulated variable (input) that affects another variable, while the latter entails any variable being affected by the independent one (output). However, these two types of variable are not used in other types of quantitative research. Therefore, you may opt out to use first and second variable or other

nomenclatures for variable such as predictor & criterion variables or X & Y variable.

5. Design of Research

This part is strongly pertinent to the approach and type of research. It is a further description of the research type you choose. The examples of research design is as follows.

Correlation	Bivariate Correlation Regression Multiple Correlation Multiple Regression Canonical Regression Discriminant Analysis Factor Analysis Path Analysis
Quasi experimental	Non-equivalent Control Group Design: • One-Group Posttest-Only Design • Posttest-Only Design with Non-equivalent Comparison Groups Design • One-Group Pretest-Posttest Design • Two-Group Pretest-Posttest Design Using an Untreated Control Group Time Series Design
True experimental research	Posttest Only Control Group Design Pretest-posttest control group design Solomon four-group design

Pre experimental research	One shot case study Research design One Group Pretest-Posttest design Static Group Comparison
Descriptive research	Survey research design

When the describing the research design, you are often strongly encouraged to display a chart or visual illustration to help your readers figure out how your research will turn out.

6. Instrument of Research

This is the section under which you should describe the instruments you will use to collect the data. Make sure to include the following information:

1. Name of the instrument (also mention the author and references when the instrument is adapted from somewhere; when possible, include the acronym)
2. Purpose of instrument (what it measures)
3. Number of items
4. Subtest/subscales and their definitions
5. Response format (Likert scale, Multiple choice, yes/no)
6. Scoring procedure of the instrument
7. Validity
8. Reliability

Validity

Validity means the degree to which an instrument measures what it is supposed to measure. There are mainly three types of validity:

a. Content validity
   Content validity means the extent to which an instrument measures an intended content area. Content validity is determined by expert judgement.
b. Criterion validity
   Criterion validity falls into two types: concurrent and predictive validity. The former refers to the degree to which scores of a

test correlate with scores of another test when the two tests are administered at about the same time. On the other hand, predictive validity means the degree to which a test can predict how well an individual will do in future situation.

c. Construct validity

Construct validity refers how well an instrument measures what it is supposed to measure with regard to the theoretical constructs. For instance, motivation may have several constructs (concepts) such as activation, persistence and intensity. One of the most ubiquitous way of measuring construct validity is through factor analysis.

Reliability

Reliability refers to the extent to which an instrument consistently measures whatever it is measuring. There are several types of reliability that you should consider in your research.

Types of reliability	Techniques
Test-Retest Reliability	Correlation
Equivalent-Forms Reliability	Correlation
Internal Consistency Reliability	Kuder-Richardson Cronbach's Alpha Split-Half Reliability
Interrater Reliability	Correlation or percentage of agreement between raters

7. Procedure of Data Collection

In this part you should clearly state the physical things you did to obtain data from your samples or participants particularly by mentioning the steps taken before, during and after data collection. Before the data collection you may think of developing materials/test, acquiring questionnaire, obtaining participants' consent or pilot study. During the data collection you should be clear about what the participants will be asked to do, what

treatments will be used, what precise instructions will be given to the participants, the order of instruments administered, the time lapse of these activities and how the data will be collected. After the data collection, describe how you will debrief the participants.

In the case of developing a questionnaire, it is important to consider the following:

- Research Questions (these tell you what to include and what to not)
- Characteristics of respondents (look at your respondents' age, education, and social background)
- Types of questions (closed, open-ended, and/or contingency questions)

In addition, you should also follow the suggestions below:

1. Keep the vocabulary simple
2. Keep the question short
3. Avoid double-barreled questions
4. Avoid hypothetical questions
5. Don't overtax the respondent's memory
6. Avoid double negatives
7. Avoid overlapping response categories
8. Beware of 'leading' questions
9. Keep the options in good sequence

What to do after writing your questionnaire?

- ✓ Pilot the questionnaire
- ✓ Consult your questionnaire draft to your consultants
- ✓ Revise the questionnaire

8. Technique of Data Analysis

This section should describe what statistics you will use in your research to analyze the data. This description should be linked to how you will address your research questions or hypotheses. When describing the statistics, you must include the name and description of the statistical techniques, the dependent and independent variables, the level of significance and the research questions or hypotheses being addressed.

Schedule of Research

This section should describe the timeline of your research from the stage of proposal writing up to the making of research report. It is suggested that you use visual chart or table to highlight the main activities during your research. This table should consist of the activities and the weeks and months you plan to execute them.

Research Results

The results section should contain the presentation of your data without any reference to the literature, interpretation, value judgment. In this section you should also focus on the data for your research objectives. Usually in quantitative research, you should start with descriptive statistics. For example, you may display tables or charts about students' achievement or demographics. The table may consist of some ubiquitous elements such as mean, standard deviation, frequency, degree of freedom, and the like. After the presentation of descriptive statistics, you should proceed to the next part, i.e testing your hypothesis.

In testing the hypothesis, you should address it one by one. To help you better structure your hypothesis testing, you can follow the following guidelines.

a. Restate your research hypothesis as it is in the previous chapter
b. Refer to the table or figures that is relevant to your hypothesis
c. Highlight the description of the data in the table or figure
d. State the outcome of the analysis for the first hypothesis along with the statistical procedure you use.
e. State the tendency of the hypothesis
f. State the next hypothesis and repeat the five procedure above.

It is important to note that before doing these steps, it is often necessary to provide description of the assumption of statistical procedure

such as normal distribution of the data (normality) and homogeneity. You should describe the normality and homogeneity prior to the statement of your research hypothesis in this section.

Discussion

In the discussion section, you should provide interpretation, judgement as well as comparisons between your findings and the previous research and theories. You can start with a summary that consists of your problems and objectives of your study, theoretical framework, research questions or hypotheses, methodology and results. Here are some useful steps you need to observe when discussing the results.

1. Briefly state the research questions or hypotheses and the variables and present the results that relate to them. Explain the results by examining the extent to which your data answered the research questions. Do they support or fail the hypotheses or do they show relationships between variables?
2. Indicate how the results of your research support, contradict or extend the knowledge base on your discipline. Integrate your results with other empirical studies as well as discuss the relationship between your results and the theories. Find out the similarities or differences then explain why.
3. If your research turned out to be unexpected, provide explanation why this happens. You may explain in terms of sampling, instrumentation or research design.

Conclusions and Suggestions

Conclusions

This section contains the summative statement of your research. It addresses whether your results have answered the research questions and whether the hypotheses are sustained or not sustained.

Suggestions

In this section you should address the implication for practice from your research as well as recommendation for further research.

References

This is the last section in your thesis proposal. You should follow the guideline issued by your institution and in this case UIN Mataram requires you to write your references using Turabian/Chicago styles.

E. CREATING THE COVER AND TITLE PAGE

Both Cover and title page have similar layout except for additional information for the latter. In these pages, you should include the title of your research, the logo of your institution (in color), by, your name and ID number, your study program and your institutions. All should be written in capitals Except that name, Subtitle and by should be written by capitalizing the first letter of each word. For the title page, you should add a statement of your thesis submission as requirement for the attainment of your degree. Here are samples of cover and title page in English.

(Sample Cover Page)

THE IMPLEMENTATION OF AUTHENTIC ASSESSMENT BY EFL TEACHERS: A CASE OF SMAN 1 MATARAM

by
Musliana
NIM 170107126

STUDY PROGRAM OF ENGLISH LANGUAGE EDUCATION
FACULTY OF EDUCATION AND TEACHER LEARNING
STATE ISLAMIC UNIVERSITY OF MATARAM
MATARAM
2021

(Sample Title Page)

THE IMPLEMENTATION OF AUTHENTIC ASSESSMENT BY EFL TEACHERS: A CASE OF SMAN 1 MATARAM

Thesis
Submitted to State Islamic University of Mataram
in partial fulfilment for the degree of
Sarjana Pendidikan

by
Musliana
NIM 170107126

STUDY PROGRAM OF ENGLISH LANGUAGE EDUCATION
FACULTY OF EDUCATION AND TEACHER LEARNING
STATE ISLAMIC UNIVERSITY OF MATARAM
MATARAM
2021

F. WRITING STATEMENT OF ORIGINALITY

This statement is needed to ensure your audience that the research you have undertaken is your own works and you have cited other works in accordance with research ethics. Here are some examples of declaration or statement of originality.

Statement of originality

This is to certify that to the best of my knowledge; the content of this thesis is my own work. This thesis has not been submitted for any degree or other purposes. I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

Originality Statement

'I hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, or substantial proportions of material which have been accepted for the award of any other degree or diploma at …….. or any other educational institution, except where due acknowledgement is made in the thesis. Any contribution made to the research by others, with whom I have worked at …….. or elsewhere, is explicitly acknowledged in the thesis. I also declare that the intellectual content of this thesis is the product of my own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistic expression is acknowledged.'

Signed …….....

Date …….....

Statement of originality

The undersigned below:

Name: ……..

NIM: ……...

Study Program: ……

Faculty: ……..

This is to certify that this thesis entitled "The Implementation of Authentic Assessment by EFL Teachers: A Case of SMAN 1 Mataram" is my own work except for the cited works. If I am found to plagiarize others' works, I will accept the sanction issued by the institution.

Mataram, December 21, 2021
Author

Musliana

Musliana

G. APPROVAL FROM ADVISORY BOARD

An approval from the advisory board represents shared agreement among the members of the board that you already underwent an thesis examination in which your thesis was defended scientifically and when necessary, made significant revision to your thesis. Therefore, all members of the board give their consent. Here is a sample approval from the advisory board.

APPROVAL

This thesis submitted by Musliana, NIM: 170107126 and entitled "The Implementation of Authentic Assessment by EFL Teachers: A Case of SMAN 1 Mataram" has been successfully defended in front of the advisory board under English Language Study program, Faculty of Education and Techer Training, State Islamic University of Mataram on December 21, 2021.

Advisory Board

Dr. Syarifudin, M.Pd. _____
(Chairperson/First Supervisor)

Dr. Ribahan, M.Pd. _____
(Secretary/Second Supervisor)

Kasyfur Rahman, M.Pd. _____
(First Examiner)

Soni Ariawan, M.Ed. _____
(Second Examiner)

H. WRITING THE ACKNOWLEDGEMENT

Acknowledgement section serves to express gratitude to those contributing to the writing of your thesis. In writing the acknowledgment should pay close attention to the tone; it should be formal but friendly, thank the most important people including the supervisors, colleagues, fellow students and if available, the respondents of your research. You should also close the acknowledgement with personal word of thanks. The following are among the most commonly used expression in an acknowledgement.

- I would like to thank…
- I am profoundly grateful to…
- My research would have been impossible without the aid and support of…
- My sincere thanks to…
- … gave me invaluable help with…

To write even a better acknowledgement you may consider the following generic structure from Hyland[64]

1. Reflective Move: A personal reflection on the author's research experience.
2. Thanking Move: Mapping credits to individual and institutions
   a. Presenting Participants: Introducing those to be thanked
   b. Thanking for academic assistance: Thanks for intellectual support, ideas and feedbacks.
   c. Thanking for Resources: Thanks for data access and clerical, technical and financial support.

[64] Ken Hyland, "Graduates' Gratitude: The Generic Structure of Dissertation Acknowledgements," *English for Specific purposes* 23, no. 3 (2004): 303–324.

d. Thanking for Moral Support: Thanks for encouragement, friendship, sympathy and patience

3. Announcing Move: Public statement of responsibility and inspiration
   a. Accepting Responsibility: An assertion of authorial responsibility for flaws or errors.
   b. Dedicating the thesis: A formal dedication of the thesis to an individual (s)

Here is a sample of thesis acknowledgement:

ACKNOWLEDGEMENT

First and foremost, I would like to thank Allah SWT for his countless blessings. With His will and mercy, months of solid work finally come to a successful end. Secondly, I also would like to express my earnest appreciation for those who made it possible for me to complete this thesis. My principal and associate supervisor, Dr. Syarifudin and Kasyfur Rahman, M.Pd. for the detailed guidance, constant encouragement and substantial support, and I am extremely fortunate to work with them, from the beginning to end. This study whould have became impossible without the inspiration and support I have received from the school where my research was carried out. I hugely thank them for their sincere cooperation and support for my research. I would also like to thank all the lecturers and staffs of the English Language Education study program, UIN Mataram, Mataram who sincerely supported me from the beginning to the end, without which I would not have been able to complete this work. My deepest thanks go to my beloved parents, brothers and sister who have sent their love, support and prayers during my study.

I. SUMMARY

When writing the research report, it is necessary to pay careful attention to the institutional policies and predetermined templates although the labels used might be different, the description will highly likely be the same. You should also align your report draft to match both the institutional templates and the generic structures unveiled in scientific studies.

J. EXERCISE

1. What is the function of statement of originality?
2. How to write a good acknowledgement?
3. What are the typical parts of a research proposal?
4. What are the typical parts of a thesis or research report?
5. Examine whether the following items are good statements questions for a questionnaire.

   Example:

   In the last two months how many hours of homework did you do on an average day?

   -

   We think this question is bad because it doesn't follow guideline number five. It overtaxes the respondents' memory.

   a. Do you enjoy studying English and Mathematics?
      Yes
      No
   b. School is a place where I usually feel great
      - Strongly agree
      - Agree
      - Neither agree nor disagree
      - Disagree
      - Strongly disagree
   c. How many teachers are there in your school who have been at the school for at least five years and who are involved in special initiatives outside the normal class activities at least once per week?
   d. If you could attend university which subjects would you like to study?
   e. How important do you consider work placements to be for university students?

   1 = not at all
   2 = very little

3 = a little

4 = quite a lot

5 = a very great deal

f. Reading helps me improve my English grammar.
   - strongly disagree
   - strongly agree
   - agree
   - disagree
   - neither agree nor disagree

g. Write two closed and two open ended questions based on the following topic.

   What are the students' responses to the use of songs in their pronunciation class?

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GLOSSARY

Action Research: systematic techniques used by teachers (or other professionals in an educational context) to collect information about and improve the ways their particular educational setting, their teaching, and their student learning.

Acknowledgment: expression of gratitude to those contributing to the writing of your thesis or research report.

Correlational Research: studies in which the researcher attempts to explain or predict the link or association between variables.

Definition of Key Terms: Definitions of variables of centrak key words in research

Experimental Research: Research which research typically answers questions regarding the effects of certain instructional methods/strategies/techniques or media on the students' achievement, attitude or others.

Mendeley: Mendeley is a reference manager created by Elsevier to help researchers organize their references.

Mixed-Method Research: a technique of investigation that involves gathering both quantitative and qualitative data, integrating the two types of data, and employing diverse designs that may include philosophical assumptions and theoretical frameworks

Multi-Method Research: the use of two or more research projects, each complete in its own right, to address research questions and/or hypotheses, a topic, or a program

Research: systematic inquiry through data collection and analysis. As illustrated below, any research begins from problem or phenomenon which later raises questions and to answer such questions data need to be garnered and then be analysed to arrive at a conclusion that serve to answer the research questions.

SPSS: Statistic Package for Social sciences (SPSS) is proprietary software of IBM companythat has features that will enable researcher to input and process research data at ease.

BIOGRAPHIES

Kasyfur Rahman, born in Mataram on December 28, 1986, is the second of three siblings. He completed his primary education at SDN 6 Kediri then continued to secondary school at SLTPN 1 Kediri, West Lombok in 1998. Subsequently, he completed his senior secondary education at Madrasah Aliyah Dakwah Islamiyah Putra Nurul Hakim in 2004. After that, he completed his Bachelor of English Education at FKIP, University of Mataram in 2009. Before continuing his education to the master degree in 2010, he was a teacher of English at three different madrasas, namely MTs Darul Aman Tegal Selagalas, MA Darul Aman Tegal Selagalas and MA Miftahul Ishlah Tembelok, Mataram. After receiving Master from English Education Program at the State University of Semarang, he served as a lecturer at IKIP Mataram from 2013 to 2017. At the same time, he was also an instructor at the UPT Language Center, University of Mataram and Lecturer at IAINH Kediri, West Lombok. In 2018, he was appointed as a permanent lecturer at the Tarbiyah and Teacher Training Faculty at UIN Mataram until now. Some of his published scientific works include: The Schematic Structure of Indonesian and English Research Article Introductions (Article, 2012), Insights from Digital Discourse: Metadiscourse in Online Written Product Reviews (Proceeding article, 2016) Metadiscourse in Undergraduates' Argumentative Writing (Article, 2016), Thematic Progression Patterns in ELT Journal Abstracts (Article, 2017), Tertiary Assisting EFL Students through Self-Regulated Strategy Development: Does It Affect Their Self Efficacy (Proceeding article, 2017), Investigating the Effects of Self-Regulated Strategy Development on Tertiary EFL Students 'Writing Skills (article, 2019), Perceived Metacognitive Strategies by EFL Undergraduates in Academic Reading (Articles, 2020) and EFL Undergraduates' Journal Article Preferences and Academic Reading Strategies (2020 Articles).

Soni Ariawan is a lecturer at English Language Education Study Program Faculty of Education and Teachers Training State Islamic University of Mataram. He graduated his school in Rungkang Eat Lombok: Elementary School 1 Rungkang, Junior High School 2 Sikur, and Senior High School 1 Sikur. In 2009, he continued his bachelor degree at English Language Education Department University of Mataram. After graduation, he got scholarship from Indonesia Endowment Fund for Education (LPDP) to study master degree at School of Education University of Adelaide and started his study in 2016 to 2018. Apart from academic activities at university, he is also leading an English course and training, Straya Language Institute, as a general director.

Affiliation Address: Program Study Tadris Bahasa Inggris (TBI), Fakultas Tarbiyah dan Keguruan (FTK), Universitas Islam Negeri Mataram (UIN) Mataram, Kampus 2, Jalan Gajah Mada No. 100 Jempong, Mataram NTB-Indonesia;

Email: soni ariawan@uinmataram.ac.id

Ribahan was born in Kalijaga Village, Aikmel - East Lombok on July 23, 1979. He was appointed as a permanent lecturer in English at UIN Mataram since 2003, which at that time was still called STAIN Mataram. Carrying out his first duties as a lecturer, he was assigned to the Faculty of Sharia and Islamic Economics, and taught MKDU English in several majors in the Faculty. A few years later, he was transferred to the Faculty of Tarbiyah and Teacher Training (FTK), joining as a permanent lecturer at the Tadris English Department until now. He completed his Elementary School (SD) and Junior High School (SMP) education in Kalijaga, East Lombok. While high school education was completed at SMAN 1 Aikmel, East Lombok in 1997. Furthermore, in 2002 he managed to get a bachelor's degree in English Literature (S1) from the Faculty of Letters, Udayana University, Bali. Three years later, in 2005, to be exact, he continued his master's degree at the Postgraduate Program at the State University of Malang (UM) majoring in English Education and successfully completed his studies in 2008. Then in

2018, he won a doctorate degree from the Postgraduate Program at the Ganesha University of Education, Singaraja. , Bali, concentration in English Education. Some of his published scientific works include: English for Economics (Teaching Books, 2014), Developing English Syllabus for the Students of Family Law, Faculty of Law and Islamic Economics, UIN Mataram (Article, 2015), Teaching Prose Using an Approach Collaborative Types of Group Investigation (Article, 2016), Motivation, Attitude, Need, and Evaluation of the Students of UIN Mataram in Learning English as a General Subject to Deal with Globalization Era (Article, 2017), Students' Perceptions of the Characteristics of Effective English Teachers at Mataram State Institute of Islamic Studies, Lombok (Article, 2018), Integrated - Communicative English (Teaching Book, 2019).

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