The Research Process: Tutorial, Guidance and Pieces of Advice

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Abstract
This paper presents the main steps, strategies and techniques of the research process. It gives some pieces of advice, and guides the researches to the main techniques of the research as it sheds light to the aspect of tutorial referring to the roles of the researcher and his supervisor. It starts by the step of formulating the research problem, and refers to the main tools of data collection including primary and secondary sources; and ends by data analysis and thesis writing. It proves that the way you formulate your research problems determines the steps and the type of the research paper. Research is a necessary element in the academic fields; therefore, it must be done in a very careful way in order to minimize errors and wrong results.
Key terms: research, qualitative, quantitative, guidance, tutorial.

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Introduction

The research process is not only information gathering, or transportation of a set of facts from one location to another; or a process used to get attention; but it is a careful study or investigation which seeks to discover new fact or scientific, historical, medical information. It is also seen as a formal work taken to increase the stock of knowledge that we have in mind. Therefore, this paper presents the main techniques of the research process starting from choosing the topic and ending by thesis writing. It insists on the primary sources of data collection such as: observation, interview and questionnaire and how to select samples.

1. What is Research?

The term 'research' is often defined in terms of 'systematic inquiry'; it involves finding out something which was previously not known, or shedding light on an issue or problem. People often regard research as something only conducted by professional researchers. In practice, we are all engaged in one form of research or another in our everyday lives without being necessarily conscious that we are doing it. Research is a careful study or investigation which seeks to discover new fact or scientific, historical, medical information. It is also seen as a formal work taken to increase the stock of knowledge that we have in mind. A research project may also be an expansion on past work in the field. Research in any language is a problem solving activity which addresses a problem, tests hypotheses and explains phenomena.

1.1.The characteristics of research:

• Research is an organized and deliberate effort to collect new information or to use existing knowledge for a new purpose.

• Research seeks to answer worthwhile and fundamental questions by using valid and reliable techniques.

• Research is logical and objective, using the most appropriate test/s to justify the methods employed, data collected, and the conclusions drawn.

- Research May be Applied or Basic; the purpose of applied research is to solve an immediate, practical problem. Basic Research; doesn't necessarily provide results of immediate, practical use.

Research May be Obtrusive or Non-Obtrusive; obtrusive research: where the researcher introduces conditions that influence participants, ie where the researcher manipulates the environment. Non-obtrusive research: where the researcher avoids influencing subjects in any way and tries to be as inconspicuous as inconspicuous as possible. (David Scott, Roben Usher. 2011)

- Research seeks to solve a problem: finds solution to a given problem.
- Research involves collecting new data or using existing data for a new purpose.
- Research is based on observable evidence or empirical evidence.
- It requires accurate observation and description.
- It emphasizes on the use of theories which help the investigator and support his results.
- It is based on objectivity rather than subjectivity.

1.2. Forms of the research: research can be Quantitative or Qualitative

1.2.1.**Quantitative research:** is the study which is based on the use and analyses of numerical data using statistical techniques (numbers, percentage). They ask questions of **who, what, when, where, how much, how many**, and **how**. It involves asking a narrow question and collecting numerical data to analyze utilizing statistical methods. The quantitative research designs are experimental, correlational, and descriptive. As an example Quantitative research can be used to search about the number of children who suffer from school dropout.

1.2. **Qualitative research :** is the study that seeks to understand human behavior and the reasons that govern such behavior. Asking a broad question and collecting word-type data that is analyzed searching for themes. This type of research looks to describe a population without attempting to quantifiably measure variables or look to potential relationships between variables. It is viewed as more restrictive in testing hypotheses because it can be expensive and time consuming, and typically limited to a single set of research subjects. Qualitative research is often used as a method of exploratory research as a basis for later quantitative research hypothesis.

2. ***Steps of Research***

2.1. Step one: formulating a research problem

Formulating the research problem is the first and the most important step in the research process. The research problem is the foundation of the research paper, if it is well formulated, you can expect a good study. If you want to solve a problem, you must know what the problem is first. Research problem can take many forms from the very simple to the very complex. The way you want to formulate your research problem determines every step you follow in your research and also the type of it, either qualitative or quantitative. Confusion is often, but remember the clearer you are towards your research problem, the easier it will be.

The difference between qualitative and quantitative studies starts by the way you formulate your research problem. In quantitative study you must be specific and try to narrow the degree of your study; on the other hand in qualitative research specificity is not required.

2.1.1. Considerations in Formulating a Research Problem:

According to Ranjit, Kumar (2011, p32); formulating the research problem requires taking into consideration the following elements:

Interest: you must be interested in the topic you choose; if you select one that does not interest you, you will face difficulties when analyzing it as you will be less motivated and spend much time and hard energy to complete it.
Magnitude: you must have enough knowledge about the topic; and it is important to select a topic that you can manage in time and sources.
Measurement of Concepts: if you use a concept in your study, make sure about what does it mean and where it should be used.
Level of Expertise: make sure that you have enough capacity for the task you are doing; you may receive help from others but remember most of the job is done by you.
Availability of Data: make sure that the data you collect are suitable for your topic.
2.1.2. Steps in Formulation a Research Problem:

1. Identify a given field or subject area;
2. Raise the research questions and hypotheses;
3. Formulate objectives;
4. Double check: you should go back and give a final consideration to whether you are interested in the topic or not; and that you have adequate sources to analyze it.

2.2. Step Two: Collecting data: determining the methods used to collect the data is the first practical step in carrying out you study. You will decide how you are going to collect data; either through the primary sources such as observation, interview, and questionnaire; or through the secondary sources, i.e. documents. Collecting the appropriate data differs considerably in context of money costs, time and other resources of the researcher. The researcher should select one of those methods of collecting data taking into consideration the nature of investigation, objective and scope of the inquiry, financial resources, and available time. Though he should pay attention to all these factors but much depends upon the ability and experience of the researcher.

2.2.1. Definition of Data Collection: it is the process of gathering information from various sources in order to supply your research paper with ideas and support your findings. There are two types of data; these are:
Primary data: are the data collected for the first time by the researcher/investigator; these data are collected from the primary sources such as: observation, questionnaires, and interviews. Primary data are two types:
Observational data: which refers to any kind of data observed and heard by the investigator himself, it can be done through observation.
a) Elicited data: refers to any kind of data got in response to questions asked by the researcher, it can be done through interviews or questionnaires.
b) Secondary data: are the data collected by other authors, writers, etc; and are used for a new study; these data are collected from secondary sources which are documents such as: books, journals, news papers, articles, etc.

2.2.2. Collecting Data Using Primary Sources:

A) Observation: it is a systematic way of watching and listening to an interaction or phenomenon. Observation is most appropriate when the data cannot be collected through face to face interview or by written questions. It helps the researcher to see the interactions of the individuals. There are two types of observation:

1**.** ***Participant Observation***: it takes place when the researcher (observer) participates in the activities or the conversation of the group or people who are under his observation with or without their recognition that they are observed.

2. ***Non-Participant Observation***: it exists when the investigator does not involve himself in the activities of the group, rather that he remains a passive observer watching and listening to the conversations without talking to the participants.

Situation in which observation can be made:

Observation can be made under two conditions:

1. ***Natural***: observing a group without interfering in its normal activities is called observation under natural conditions.

2. ***Controlled***: introducing a stimulus to the group and observing their reaction to it is called observation under controlled conditions.

Problems of the Observational Method:

The use of observation as a method of data collection may create a number of problems such as:

1. When the participants are aware that they are observed, they may change their behavior; such change can occur because of many reasons depending n the participants, as it can be positive or negative depending on the purpose of your study. This process is called "**Hawthorne effect"**, i.e. when people change their behavior when they feel or know that they are observed; thus what is observed may not represent their real behavior.

2. There is always a possibility of **'observer bias'** in which the investigator introduces some interactions which may not exist or support a given idea that fits his own opinion.

3. The interactions drawn from observation vary from one observer to another.

4. There is always a possibility of incomplete observation and recording; the researcher may focus on watching the behavior but at the expense of detailed recording, or he may take detailed notes but he may miss some interactions to see.

b) **Interviews**: is a common method of data collection which focuses on a face to face conversation or person to person interaction (though telephone can be used in some cases). Interviews are series of questions that a researcher addresses personally to respondents i.e. he participates himself through addressing questions and recording answers. They can be done individually or within the group.

Types of Interviews:

a) Structured interviews: where you ask clearly predetermined set of questions as specified in the interview schedule. The latter is a list of questions, closed or open-ended, prepared for use by the interviewer in a person to person interaction (face to face, by telephone, etc), thus the data here are predictable. Note that interview schedule is a tool/instrument for collecting data whereas an interview is a method of data collection.

b) Unstructured interviews: in contrast of the previous method, this one does not follow a system of pre-determined questions and standardized techniques of recording information. In a non-structured interview, the interviewer is allowed to ask, in case of need, additional questions or he may omit certain questions if the situation so requires. He may even change the sequence of questions. He has relatively greater freedom while recording the responses to include some aspects and exclude others. In unstructured interviews, the interviewer leaves to interviewee to talk freely without asking questions, thus the data here are unpredictable.

c) Semi-Structured Interviews: this one mixes between the techniques of both structured and un-structured interviews; that is the research can ask pre-planned questions then adds changes, or omits some needless questions; he can even let the interviewee says whatever he wants. Generally speaking; when using any type of interviews, a tape recorder can be a good idea if it does not affect persons being interviewed. If you are interviewing, be sure that your interviewees are happy to talk with you, but try not to demand too much of their time. With the people whom you are observing or interviewing be clear about what will happen and with the data you collect. Assure them that what they tell you will be kept confidential.

c) **Questionnaire** : it is a list of questions prepared by the investigator who cannot be part of this process, and who has to select the questions and the items carefully and should avoid double questions. Questionnaire consists of a set of questions presented to a respondent for answers. The respondents read the questions, interpret what is expected and then write down the answers themselves. The difference between schedule interviews and questionnaires is that the former requires the participation of the interviewer which asks the questions himself and records the answers, whereas in questionnaires respondents record or write the answers themselves. Since there is no explanation to the meaning of questions to respondents (because the investigator is not with them), therefore questionnaires must be clear and easy to understand. It is important also to exclude any personal question; i.e. names, and specific details about the respondents.

Types of questions: questionnaires are two types, these are:
a) Closed questions: yes/no questions, and multiple choice questions. These are less time consuming to complete and easier to analyze, they also have higher responses; but they restrict the responses as the respondent may not find the answer he wants

to select in multiple choice questions, they lead the respondents not to give additional information, and need insurance.

b) Open-ended questions: 'wh' questions. They allow people to answer freely and express their opinions using their own words. They are useful for collecting wealth information; but they take much time to complete and are difficult to analyze, i.e. data analysis is more complex.

Both open-ended and closed questions can be used in the same questionnaires, but the investigator must use the appropriate type for the appropriate kind of information he needs, i.e. if he looks for limited and factual information he should use closed questions, and if he seeks more information about opinions and attitudes he should adapt open-ended questions respondents

Ways of addressing a questionnaire: a questionnaire can be addressed in a number of ways such as:

1. The mailed questions: here the investigator sends the questionnaire by mail to his respondents; it is necessary here to have access to their mail addresses, though it can't be easy but try to get the addresses if you choose to collect data using this method. Here the investigator does not need to go himself to his respondents but he may have low response rate. This method should be accompanied with a cover letter in which he introduces himself, objectives, deadline for answers, and thanks the respondents.

2. *Collective administration*: it is one of the best ways of addressing questionnaires, here the researcher seeks to obtain audiences such as students in classroom, people attending a conference, participants gathered in a given place, etc and give them his questionnaires. This ensures gathering a high number of respondents as very few people may refuse to answer your questions.

3. *Online questionnaire*: with the development of communication and technology, the investigator, instead of spending time in collecting the mail addresses of the respondents; he can post his questionnaires in a website so that everyone can access to it and those who are interested in the topic they can participate and answer your questions.

2.3. Step three: Review the literature: Once the problem is formulated, a brief summary of it should be written down. At this phase the researcher should undertake extensive literature survey connected with the problem. For this purpose, the journals and published or unpublished bibliographies are the first place to go to. Academic journals, conference proceedings, government reports, books etc., must be used depending on the nature of the problem. In this process, it should be remembered that one source will lead to another. The earlier studies, if any, which are similar to yours should be carefully studied. A good library will be a great help to the researcher at this stage.

Steps for conduction a literature review: there are four steps involved when reviewing the literature:

1. ***Searching for the existing literature***: to search effectively for the literature in your field of study, you must have some idea about the subject area and the

problem you wish to investigate. You must also have some idea about the study population; i.e. immigrants, women, youth, students, etc, and what you want to study, i.e. in the case f immigrants you might want to study their settlement process and conditions, reason for immigration, etc. There are four sources that you can use to search for the existing literature which are: books, journals, conference papers, and the net.

a) *Books*: they are central parts for any literature and bibliography; and all the materials published in a book are usually important and of a good quality. The best way to search for a book is to check a library catalogues. Narrow the subject area searched by selecting the appropriate key words, then read carefully through these titles found and identify those books you think are likely to be of interest to you; and be aware that some titles do not provide enough information that help you.
b) *Journals*: they provide you with the most up to date information, even though there is a gap of 2 or 3 years between the completion of a research project and its publication in a journal. You should select as many journals as you can, then prepare a list of those you want to examine and start by the latest one and check its content page to see if there is an article relevant to your topic. In most libraries, information on books, journals and abstracts is stored on computers; in each case the information is classified by subject, author and title.
c) *Conference papers*: these refer to papers presented in professional conferences and have been published. They can provide you with the most recent researches in the area, thus try to get copies of the papers presented at recent conferences in your area of interest.
d) *The Internet*: it becomes an important tool for finding published literature in almost every academic and professional field. Through the Internet search you can identify published materials in books, journals and other sources with ease and speed.

2. ***Reviewing the selected literature***: after identifying several books and articles to use, the next step is to start reading them to pull together issues that are relevant to your study. Use separate sheets of paper for each theme or issue you identify and put the information where it logically belongs under the themes as long as you read. When going through the literature you should carefully and critically examine according to the following aspects:

a) Note whether the knowledge relevant to your theoretical framework has been confirmed beyond doubt;
b) Note the theories and their criticism, basis and the methodologies adopted;
c) Notice whether there are significant differences of opinions among researchers and give your opinion about their validity;
d) Notice the gaps that exist in the body of knowledge.

3. Developing a theoretical framework: examining the literature can be never en ending task, but as you have limited time it is important to set the parameters by taking the themes related to you your topic. As you read the literature you discover that your research problem has its roots in a number of theories. Therefore, the information obtained from different books and journals need to be stored under the main themes and theories highlighting agreements and disagreements among the authors, and identifying the unanswered questions and gaps. Literature relevant to your study may deal with universal/general information and more specific information; therefore you should start with the general information and gradually narrow it down to the specific.

4. Developing a conceptual framework: it stems from the theoretical framework and usually focuses on the sections which are the basis of your study. It describes the aspects you selected from the theoretical framework to become the basis of you enquiry; thus it becomes the foundation of your study.

Writing about the literature reviewed

Now; all what remains is to write about the literature you have reviewed. As mentioned previously; literature review seeks to provide a theoretical background to your study and to enable you to contextualize your findings in relation to the existing body of knowledge, in addition to refining your methodology. Therefore; the content of your literature should reflect these two purposes. In order to achieve the first purpose, you should identify and describe various theories relevant to your field and specify gaps in existing knowledge in the area, recent advances in the study, current trends and so on. In order to fulfill the second purpose you should integrate to results from your study with specific and relevant findings from the existing literature by comparing the two for confirmation or contradiction.

While reading the literature for the theoretical background to your study, you will realize that certain themes have emerged; list the main ones converting them into subheading. Some people write the entire literature review in one section entitled “Review of Literature”, “Summary of Literature”, or “Literature Review” without subheadings of the author, but you should write your literature review under subheadings based upon the main themes that you have discovered and which form the basis of your theoretical framework. These subheadings should be precise, describe the theme and follow a logical progression. Then; under each subheading, record the main findings or information with respect to the theme (thematic writing), highlighting the reasons for and against an argument if they exist, identifying gaps and issues. Be sure to provide a reference for any borrowed material in an acceptable format.

Your literature review can include a critique of methodology relevant to your study; the critique of methods and procedures should be involved under their respective headings, for example: critique on the sampling design should be included under ‘sampling’. Note that the suggested research proposal should not

specify a section for reviewing literature entitled "survey of the literature" or "literature review"; references to literature review should be integrated with your arguments and should be part of your research report. It should be reviewed under the main themes that emerge from your reading and various issues should be discussed under their respective headings. For quantitative proposal you need to be very specific in proposing how to you are going to undertake each step of the research journey, whereas in qualitative proposal such details are not expected as your methodology is flexible and unstructured to accommodate in depth search.

2.4. **Step four: Selecting Samples**: the accuracy of your findings depends on the way you select your samples; therefore if they are well selected, they will give you accurate and sufficient amount of data. Samples can be either random/probability samples or non-random/non-probability samples. In order to achieve random sampling or probability sampling, each element in the study population should have equal and independent chance of selection. The concept of 'equality' here means that the choice of samples is not influenced by other considerations like education, ethnicity, social class, etc, i.e. samples are randomly selected. Similarly, 'independence' means that the choice of one element is not dependent upon the choice of another one in the sampling; that is the selection or rejection of one sample doesn't affect the inclusion or exclusion of others. Non-random/non-probability sampling design is used when the selection of samples is dependent upon other considerations like: education, ethnic background, social class, etc. It involves: the quota sampling, accidental sampling, purposive/judgment sampling, expert sampling, and the snowball sampling. (Ranjit, Kumar. 2014).

The Difference between Sampling in Quantitative Research and Sampling in Qualitative Research

The purpose of sampling in quantitative research is to make estimation or percentage and to reach maximum precision in our estimates, but the purpose of sampling in qualitative research is gain in-depth knowledge about situation, event, or other aspects. Moreover; in quantitative research you are guided by a pre-determined sample size, but in qualitative research you do not have a pre-determined sample size but during the data collection phase you wait until you reach a point of data saturation. Thus; sample size plays an important role in quantitative research in which a larger sample size will ensure the inclusion of people with distinct backgrounds; on the other hand, sample size does not play a crucial role in qualitative research since the purpose here is to get into data saturation which determines the sample size. In quantitative research randomization is used to ensure that samples are given equal and independent chances of being members of the groups and to avoid bias; but in qualitative research such attempt is not made when selecting samples rather that you select « information rich respondents » who will provide with the information you need.

2.5. ***Step* Five*: Analysis of data***: the way you analyze the information you collected depends on two things: the type of information (descriptive, quantitative, qualitative, etc); and the way you want to present the findings to your readers. The analysis of data requires a number of closely related operations such as establishment of categories, the application of these categories through coding, and then drawing statistical inferences. *Coding* operation is usually done at this stage through which the categories of data are transformed into symbols that may be tabulated and counted. *Tabulation* is a part of the technical procedure wherein the classified data are put in the form of tables. A great deal of data, especially in large inquiries, is tabulated by computers which save time and make it possible to study large number of variables affecting a problem at the same time. At this step the researcher draws conclusions and results, answers the research questions, tests and proves the hypotheses.

2.5.1. Data Analysis in Quantitative Research

1) Editing: the information collected by the researcher is initially called *raw data* or simply *data*. The first step in processing data is to ensure that the data is 'clean', that is they are consistent and complete. This cleaning process is therefore called "editing". It involves examining the completed research instruments and methods to identify and minimize errors, incompleteness, misclassifications, and gaps in the information obtained from the respondents. There are two ways of editing data:

a) Examine all the answers to one question at a time;
b) Examine all the responses given to all the questions by one respondent at a time.
2) Coding: after cleaning the data, then the next step to do is to code such data. For the purpose of analysis, quantitative responses need to be presented in a way that is different from a descriptive format. Quantitative information is therefore transformed into numerical values called 'codes', so that the information can be easily analyzed either manually or by a computer (eg yes/no questions). On the other hand, descriptive information goes through a process called 'content analysis' where you identify the main themes that emerge from the descriptions given by respondents.
3) Developing a Frame of Analysis: a frame of analysis should specify which variables you are planning to analyze, and in case there are two variables you must determine if there is a relationship between them, and what variables you need to combine in order to construct your major concepts.
Analyzing Quantitative Data Manually: Coded data can be analyzed manually or with the help of the computer. If the number of respondents is small there will not be many variables to analyze. In case you are not familiar with the relevant computer program you can analyze the data manually. Be aware that manual analysis is extremely difficult and time consuming; but the easiest way to analyze data manually is to code it directly into large graph paper in columns and you should not be worry about the column number. Questions can be also written on

each column to code information about the question. If you want to analyze data using a computer you should be familiar with the appropriate program.

2.5.2. Data Analyzing in Qualitative Research

Processing and analyzing data in qualitative study depends upon how you plan to present the findings; broadly there are three ways in which you can write about your findings in qualitative study:

1) Developing a narrative to describe a situation or an event;
2) Identify the main themes that emerge from you field and writing about them;
3) Indicate the occurrence of the main themes in order to provide their prevalence.

For writing a narrative form you need to go through the sequence in which you want to narrate. Writing about the findings requires going through analyzing the content of interviews and observational field so as to identify the main themes that emerge from the responses given by your respondents or the observation notes made by you. This process involves a number of steps:

Step 1: identify the main themes: you need to go carefully through the responses given by your respondents in order to understand the meaning they communicate to you. From these responses you develop the broad themes that reflect these meanings, you will notice that people use different words and language to express themselves. Therefore you must select the wording of your themes in a way that accurately represents the meanings; those themes become the basis for analyzing the data. (Diana Burton and Steve Bartlett. 2009)

Step 2: classify responses under the main themes: after identifying the main themes then you need now to go through all the responses provided in interviews, observation, and questionnaires, and classify under the different themes.

Step 3: integrate themes and responses into the text of your research: after classifying the responses under their main themes, you need to integrate them among the texts of your research in an appropriate way so that they fit each other.

2.6. ***Step six: writing the thesis:*** Finally, the researcher has to write all what have been done by him. Writing the thesis must be done with great care keeping in view the following:

Title Page: A title page should be included, which should be clear and simple.

Abstract: The abstract is typically a single paragraph. The abstract should be considered as an independent document. The first sentence should clearly state the objective of the paper. The subsequent sentences describe how the investigation was carried out. The final sentences describe the significance of the research and its impact on the general field of study. It involves at least four key terms related the study.

Introduction: The introduction requires a short review of the literature pertaining to the research topic. The introduction is then best constructed starting with broad topics and slowly focusing on the work. It involves: thesis statement, research questions, hypotheses, aims of the study, and the sections of the paper.
Literature review: It should include a review of any other studies or projects similar or relevant to yours, and perhaps a review of the literature on the method you have chosen if your project tests a new method of research or analysis.
Methods: This section describes the methods used in your study; it will cover such issues as: the study design, the study population, sampling numbers, sampling method, data collection instruments.
Results: In this section you present the results of your research. This section includes such information as descriptive data dealing with your study population, response rates etc. and results of statistical analysis. Tables, figures and graphs are an excellent means of presenting this sort of information. All tables, figures and graphs, should be numbered throughout the whole paper, and presented with a clear and concise descriptive title and explained in paragraphs.
Discussion In this section you interpret your results and discuss their implications, with reference to other published research.
Conclusion: This section summarizes the key results and the conclusions that you can draw from these results. It also needs to reflect what your initial project aims and objectives were.
Recommendations: It is good research practice to make recommendations or to suggest directions for further research or actions as a result of your project findings.
References This is a list of all the references and sources you used in your literature review. This includes books, journal articles, letters, abstracts, conference papers, media articles, and any form of published literature or comment.
Appendices This section may contain copies of any questionnaires or evaluation instruments used, covering letters, participant information, or additional explanations.

3. Tutorial and Guidance

3.1. Choosing and working with a supervisor (tutor)

There are two main ways to finding a supervisor: you can choose your own topic and see who is willing to supervise it, or you can choose a supervisor who you would like to work with you, and ask him to suggest a topic. Using the first approach, when you have selected a topic of interest, draft a brief proposal and outline the problem to be addressed, project aims and suggested methodology, and send it to the scientific committee to assist in suggesting a supervisor with expertise in your area of research. Alternatively, you can choose a project by first selecting a supervisor who you wish to work with you and ask him for topic suggestions, or inquiring whether they are interested in supervising you in one of your areas of interest. Either way, try to find a supervisor whose work you have read or who you know is interested in the kind of approach (Brian Paltridge and Sue Starfield,

2007). For example, if you wish to do a qualitative project, it is better to have a supervisor who has qualitative research expertise. You will not be allowed to enroll in the project without a proposal that has been approved by the scientific committee.

3.2. The role of your supervisor: your supervisor is expected to:

- help you formulate an appropriate project.
- meet regularly with you to support your research/project work.
- Your supervisor would normally expect to meet with you for an average of one hour per week.
- inform you and the scientific committee if you are not making satisfactory progress and/or require additional support
- provide ongoing assessment of your work throughout the period of supervision including advice on matters of presentation and style
- supply written comments on your submitted work when requested.
- review a final draft of the project and advise you whether it is in a suitable form for examination
- act as one of the examiners on submission of your project.

3.3. The role of a co-supervisor

A co-supervisor may be required in cases where there is a need for special expertise in the subject matter. He must be approved by your supervisor and the scientific committee; and you must not engage a co-supervisor without the approval of your main supervisor. A co-supervisor may be required if your supervisor will be absent for some of the semester. He should maintain a sufficient level of communication with you and the supervisor to participate in the supervision or act as substitute for the supervisor whenever necessary.

3.4. Your responsibilities: You are expected to:

• schedule regular meetings (average one hour per week) with your supervisor or arrange regular contact (by phone, email) if you are away from the university.

• submit a review of the relevant literature at an early stage; this will usually form part of your final project report. If your project is itself a systematic literature review, you should establish in writing your search methods and terms, criteria for inclusion and exclusion, and analytical approach at an early stage.

• submit sections of your project as you are proceeding with your project, so that your supervisor can check your progress and that writing is progressing satisfactorily.

• provide yourself with all relevant sources of information.

4. Avoiding Plagiarism

Plagiarism: means taking the words and thoughts of others (their ideas, concepts, images, sentences, and so forth) and using them as if they were your own, without citing the source. Most people know that taking the exact words of another person without attribution is plagiarism; similarly taking someone else's idea and changing the words and style without citing the source is like stealing a car and changing its color. Plagiarism is found in all of the following examples:

• copying a paper from the Internet
• Borrowing your classmate's report and using his or her description of the experiment to describe your findings
• Turning in a paper as your own that you didn't write
• Copying materials without acknowledging the source
• Using material when an author has been identified but not using quotation marks to reflect his or her original words. (A. Ravi Ravindran. 2009)

4.1 PRINCIPLES AND RULES

• When you borrow another person's exact words, use quotation marks and include complete reference (author's name, date, pages).
• Internet sources must also be acknowledged.
• When borrowing another person's ideas, acknowledge their origin.
• Therefore; **you must cite the source in the following examples**:

*Any **direct quotation** in your paper; any part of a text you **paraphrase**; any part of a text you **summarize**; any person's original thoughts, opinions, or ideas; and any facts, statistics, graphs or information that is not 'common knowledge.'

4.2. Types of Plagiarism: Plagiarism exists when you borrow an idea and do not mention its source, and this can appear in six types of sources not cited; but sometimes even if you mention the source you still commit plagiarism which can be summarized in five types of sources cited but still plagiarized.

A. SOURCES NOT CITED

1) "**The Ghost Writer**": The writer takes another's work, word-for-word, as his or her own.
2) "**The Photocopy**": The writer copies significant portions of text straight from a single source, without citation.
3) "**The Potluck Paper"**: The writer tries to hide plagiarism by copying from several different sources and mixing the sentences to make them fit together while retaining most of the original phrasing without citation.
4) "**The Poor Disguise"**: Although the writer keeps the essential content of the source, he or she tries to alter the paper's appearance slightly by changing key words and phrases without citation.
5) "**The Labor of Laziness":** The writer takes the time to paraphrase most of the paper from other sources and make it all fit together without citing their references, instead of spending the same effort on original work.
6) **"The Self-Stealer**": The writer "borrows" generously from his or her previous work without citation.

II. SOURCES CITED but still plagiarized!

1) "**The Forgotten Footnote":** The writer mentions an author's name of a source, but neglects to include specific information on the location or page number of the material referenced.

2) "**The Misinformed**": The writer provides inaccurate or incorrect information regarding the sources making it impossible to find them.

3) "**The Too-Perfect Paraphrase"**: here the writer properly cites a source, but neglects to put between quotation marks text that has been copied word-for-word, or close to it.

4) **Resourceful Citer**": The writer properly cites all sources, paraphrasing and using quotations appropriately, but the paper contains almost no original work! It is sometimes difficult to spot this form of plagiarism because it looks like any other well-researched document.

5) **"The Perfect Crime":** In this case, the writer properly quotes and cites sources in some places, but goes on to paraphrase other arguments from those sources without citation. This way, the writer tries to pass off the paraphrased material as his or her own analysis of the cited material.

4.3. How to avoid Plagiarism?

The only way to avoid plagiarism is by writing the sources or citing every borrowed idea or quotation.

4.5. Tips for Avoiding Plagiarism

1. Every time you borrow a material from a given source, always make sure that you get the full source so that you can cite it later.
2. Don't assume that there is some magical number of words or sentences that you can "borrow" without being caught or accused of plagiarism. Sometimes it is not the length of a passage but a clever phrasing that sticks out in one's memory.
3. Don't misrepresent, pretend, or assume that ideas are yours when they aren't.
4. Don't copy three paragraphs, from an original source and indicate at the end of the third paragraph with a footnote or in-text citation that the material was borrowed. The reader must know at the beginning of the first paragraph that you are not the author of the next three paragraphs.
5. If you use the exact words, put quotation marks and cite the source.
6. Before submitting your paper to an instructor, try to be sure that any outside material you have inserted has been properly cited and that direct quotes contain quotation marks around them. Remember that graphs, tables, figures, formulae and other visual representations that you acquire must also be identified as to their source.

Conclusion

The research process is similar to undertaking jour journey. Suppose that you are going out for a trip; before you go you have to determine where to go, and then which route to take. I f you know to route you don't need to consult a map, but in case you don't, then you have to check one. Similarly in the research, you have

first to know what you want to find out (i.e research problem), or what research questions you want to answer. Then you have to decide how to answer those questions; and this requires research methodology. There are practical steps through which the research process is followed so as to find solutions to your problem and to answer the research questions. The sequence of these steps is not fixed, and by experience you can modify it.

References

Books

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4. **David Scott, Roben Usher.** 2011**.** *"Researching Education; Data, Methods and Theory in Educational Enquiry ».* 2nd edition. Continuum International Publishing Group ; London.

5. **Ranjit, Kumar**. 2011. « Research Methodology. A step by Step for Beginners ». Thir Edition. SAGE Publications Ltd.

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