

Academic debate

For first stage

college of engineering

Mechanical department

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Definition of Scientific Research:

scientific research is the intellectual process performed by a named person (researcher), For fact-finding regarding a particular issue or problem is called (research subject), Using the scientific method called (Research Methodology), in order to reach Suitable solutions for treatment or to the discovery of new facts called (research results).

The importance of scientific research for the student:

The main objectives of writing research are:

1- Enrich the student information on specific subject.

2- Self-reliance in the study of the problems and make judgments about them.

3- Follow scientific methods and rules in writing research.

- **4- get used to the use of documents and books and reference of information and linking including access to new results.**
- **5- To form a close relationship between the researcher and the library.**
- **6- Learn about the latest developments in the progress of science.**

- **7- Identify the devices and various diagnostic methods.**
- **8- Learn different documentation methods, especially regarding scientific research.**

- **9- Learn to use computer software support for scientific research and other related software specialist (SPSS, Excels).**
- **10- Allows scientific research for the researcher to rely on himself to gain information.**
- **11- Allows the researcher to see the different references and choose the best ones.**

- **12- Researcher helps to deepen the specialization.**
- **13- Researcher makes a distinctive personality in terms of thinking, behavior, and discipline, and movement, and so on.**

Basis of Scientific Research:

- **1- Originality and innovation:**

Originality mean intended not to tradition so that the research does not appear like a duplicate another researcher, originality linked to innovation, innovation may be the idea or in method of data analysis and linking them to obtain new results .

- **2- Scientific integrity and scientific documentation:**
When using the ideas and methods of other researchers should be noted in the reference or margin otherwise it consider as a scientific theft.

- **3- Safety Research Title:**
The title of research must be expressing the objectives and expected results and be strong and influential and a brief.
Long title lose its attractions and perhaps raise weariness.

- **4- Comprehensiveness and accuracy of previous studies:**

It is important to researcher to show it is control on previous studies that related to his research and referred to it in reference by remember author's full name, place of publication, date of publication so that it can be easily referenced.

- **5- Data integrity and depth of analysis: Data must enter by following assets and bases known by the quality of the research until not lead to a breach of scientific research and questioning the results.**

The data is the raw material that is analyzed and must be remember to data sources and models collected. The safety analysis methods and their suitability to test make governor to depend on the research result. The depth of analysis is one of the criteria home in the evaluation of research.

- **6- Accuracy in language and the fulfillment formalism sides:**

Standards governing for scientific research accuracy of the language and linguistic structures, as well as accuracy foreign language any defect in the language adversely affects the governors.

7- Modern references and linked to search:

The use of modern references are strong standards in judging the research. The use of old references is one of the things flawed in scientific research unless they references classic ideas are still holding up so far and must be references directly linked with the search.

The most important conditions that must be available in the researcher:

- **a- Ability to choose a suitable subject to discuss.**
- **b- His ability to choose a suitable plan for research.**
- **c- Independence personality and non-delivery of everything reads.**
- **d- Permanent feeling to be able to innovate in the subject in which researching.**

- **e- That entirely convinced his research to be able to work and is not mean here that enthusiastic about the subject so as not to see the disadvantage, but enthusiastic to search it.**
- **f- Patience, calm and prudence, and good listening to the other opinion.**
- **g- Be knowledgeable in their respective fields.**
- **h- That has the ability to express.**

Steps of doing scientific research and writing:

- **The process of doing scientific research need to follow number of steps so scientific research be mature and complete research, these stages are:**
 - **1) Choose of scientific research problem.**
 - **2) Collect information and write it down.**
 - **3) The preparation of a plan of doing research.**

- **4) Doing of field work and laboratory and office according to the research plan.**

5) Writing research.

The following each of these five steps.

- **1) Choose of scientific research problem.**

Research problem stems from the feeling researcher lack or ambiguity about a particular subject and the problem is questionable is going on in the mind of the

researcher about the subject is ambiguous and needs to be interpreted.

- **And the things that help the researcher to choose the research problem as follows:**

1- Reading scientific journals related to the subject of the study.

2- Study theses (Masters and PhD) provided to universities.

How to Choose a research title:

- **The choice of research subject related to the research problem is not easy, so be done with the help of the supervisor and he depends on previous studies and frequenting the library and then write the study proposal and the interest that the student should be aware of and familiar with the research subject and the aim and the importance of the study.**

Writing the research title:

- The title has big importance in giving research initial value to achieve this there are conditions related to writing address:

1- Be specific and clearly indicative of the content, and illustrates the nature study.

2- Be short and focused on a particular point.

- **3- Intriguingly to the reader and draws attention to know later.**
- **4- That shows the nature of the study as well as the field being discussed.**
- **5- Words used it easy to understand.**
- **6- Refers to the research problem and specifically highlighted.**

Literature review:

- **Researcher should back to previous studies and well-read and review where it can be inferred and dependence on it in supported search results and comparison between them and the research results. And preferably previous studies, scientific studies published in international journals, regional or local on scientific topics regarding the nature of the study can be obtained on these studies of libraries and specific Web sites.**

The most important features that should be taken into account in previous studies:

- **1- Be enough, minute and clear.**
- 2- Modern dates did not take them a long time ago.**
- 3- Have a strong connection to the problem of the study.**
- 4- Help to highlight the problem.**
- 5- What the researcher benefit is great.**

2- Collect information and write it down:

- **Collect Information:**

After that the researcher is collecting what availability his from research and studies have to start reading very near to the subject of his research extensive and in-depth reading and understanding of the ideas and opinions authors, and reading in the spirit of closer monetary and audited, and read the thoughts and opinions of authors in their books, not in the books of others.

Codification of information:

- **While the researcher read sources on the problem of the research, he must transfer the information and opinions contained in these sources, it is advice that led the researcher if there is an idea or theme regard to the problem of search shall promptly recorded fear of lost or forgotten.**

3- Prepare a plan of scientific research:

- The researcher become after selected a scientific problem prepare a primary plan for the search, and must be in-depth reading of the sources and references that help the researcher to develop solid research plan. The researcher should not be an emulator for research plans and other studies and divisions, but the researcher innovates and invents its own research plan.**

No doubt that the development plan in the same authentic and creative work and refer the viability and ability researcher and whenever a plan is clear the logical and tidy work was useful and successful researcher and luck, and the researcher cementing himself that the plan, which puts it in the beginning of his work it is a draft plan and able modulation and switching and development. The main conditions of the successful plan:

- **1- To cover all issues and questions linking the research problem and do not leave all about them except entered within the parts and details of the plan.**
- 2- Plan should be innovative, modern and non-counterfeit plans authors ·**
- 3- Plan should be balanced. This balance will be on two types:
Quantitative balance (pages chapters) and qualitative balance (the contents of the Chapters).**

4- Doing field and laboratory and office:

- **Requires the completion of scientific research, depend on the type of research, field visits for the phenomenon to be studied sites apparent whether social or natural, as that some research you need to make a number of laboratory experiments. In both cases we need to do desk work, which might be to make some mathematical and statistical calculations as well as the development of the illustrations and the like so. And often use the computer to make this office work.**

5- Writing scientific research:

- Scientific research usually involves three main sections:

a- Introduction:

Search begins with an introduction or pave the researcher selects scientific problem be addressed in the research and give some general ideas around them.

- **b- Materials and Methods:**

This is part of the important parts that must be talked about where they are design action steps and planning study in accordance with the objectives.

- **c- Results:**

This part of the study where you placed the search results that may include statistical analysis, where the results are written in the form of tables Reached. , Figures & Charts

- **d- How statistical analysis:**

Where the researcher needs to work statistical analysis to study if necessary using with the need to understand, Microsoft Excel or SPSS:

- **e-Discussion:**

The results are discussed that have been reached in this part of the study the highlight here the student's ability to understand the research and digest

- **f- Conclusion and recommendations**
Research ends conclusion allocated to give a substantial center for problem addressed by the scientific researcher.
- **g- Writing references:**
Where the researcher must document the information in the study and a list of all work references used at the end of the study .

Graduation thesis consists of three main parts:

- (Front matter): (Title page) Page authentication and signatures, gifting page, a list of Contents, list of figures, tables, list Supplements, a list of shortcuts, Page acknowledgment, Page Citation, Abstract).
- (Text) :(research subject)
- (Back matter): Definition Terms, references and appendices).

Front matter

- Title page:

Title Page Model facility. Obey coordination and shape without modification so that the only difference in the name of the researcher, title, date, and specialization.

**University of Salahaddin
College of engineering
Department of Mechanic**

[Thesis Title]

**BY
[Student Name]**

**Supervisor / s
[Name]
Month/2013**

Should not include a list of contents the follows:

- 1- Abstract.
- 2- Table of Contents.
- 3- Page Citation.
- 4- Title Page.

List of Figures and List of Tables

Comes the list of forms and tables list after list of the contents and start each new page. And inventory figures or tables as they arise and write as follows:

The form of (1): the text of the title of the table..... Page number.

**Table (1): the text of the title of the table.....
Page number.**

Acknowledgments:

Thank researcher persons or institutions who contributed to the completion of research professional level (supervisor, assistant supervisor, the place of business of search and people its employees, or who support financially or by providing researcher facilities) or Personal level (family, friends etc). And no more than a page thanks

ACKNOWLEDGEMENTS

The researcher wishes to express his deepest gratitude and appreciation to Dr -----., the supervisor of this work, for this enlightening supervision, useful assistance, valuable a advice and continuous support during the course of this study. Also, Thanks extend to ----- department staff and thanks for my friends -----

Dedication:

To my parents

Epigraph:

- **Researchers can put in this page Quranic verse or hadeth Sharif or say a saying to one of the scientists or philosophers or writers. There is meaning or significance of this page has to do with research or the researcher, not numbered.**
 - **If you use a verse you must write the number of verse and sura.**
 - **If you use an adage quoted naming him at the end of the Citation.**
- Does not mention epigraph content in content list and not in the literature. ·**

Typing specifications:

- Language: English
page size: A 4 (29.7 cm). X21)
Limits the print on the page:
- Top: 3 cm bottom: 3 cm
Left side: 4 cm right side: 2.5 cm
- Times New Roman: Font
font-size: 12 for text and 13 dark of the subheadings
and 14 Dark for titles
- **The spaces between the lines: 1.5.**
Allows the use of a vacuum 1 in some cases table of
Contents.
Addresses the main sequence.

Title Tables and Figures.

Tables within the text and appendices.

1-(Numbering):

All pages are except the blank page that follows the title page.

1-All pages are numbered except for the title page and start pages of each chapter or part of the search.

Pagination Style types numbering ii, iii,)

Numbering primary parts: numbered using Roman numerals small start the authentication page that bears the names and signatures of the judging panel and discussion. Remember that the title page is not numbered.

2. Numbering the pages of text and references:

- numbered using English numerals. Start numbering abstract (1) and the sequence until the end of the research. Remember, do not put No. page at the beginning of the chapter or the beginning of any part of the search.
- **Position of page numbers:**
[Bottom of the page to the right].

References

- There are many ways to write the references in books and magazines, but the student must to commit to the way used in the Journal of the Islamic University in the following picture.
- Quranic verse: referred to in the text only as Sura followed by two points: Then Verse [Al Nesa: 55]
- Hadith: is referred to in the text only the name of the book, followed by two points: Then talk [Sahih Bukhari: 234]

If the reference is in search of a publication in the Journal of Arabic:

- [5] أحمد و عبد الرحيم، فؤاد، (طريقة مطورة للكشف عن الأغذية التي تحوي عظاماً مشعة باستخدام جهاز الطنين الدوراني الإلكتروني).مجلة جامعة الملك سعود ،العلوم الزراعية، ٢٠٠٣، العدد 15، ص (45)
- **If the reference is in search of a publication in the journal English language**

[18] El-Nahhal I.M, El-Ashgar N.M., Chehimi M.M., Bargiela P., Maquet J., Babonneau F. and Livage J., (Metal Uptake by Porous Iminobis (N-2- aminoethylacetamide)-modified Polysiloxane Ligand System. Microp. Mesop), Mat., 2003 , Vol. 65 No. 2-3, P: 299.

Appendices:

- Researcher can put tables in another study where it cannot be placed in the results, appendices is the right place to put the things of secondary importance Study.
- **Printing the research:**
- The student must processing and printing multiple copies of the research supervisor maintains copy, copy partition, copy the library and student version.
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