**Lesson 04 :Subject Choice in scientific research**

To pick the research topic, we should review the scientific literature , so what is scientific literature?

**1-Definition of scientific literature:**

* Scientists communicate the results of their research to other scientists primarily through the scientific literature
* Scientific literature is a permanent repository of scientific knowledge and a record of progress in scientific enquiry.
* Includes journals, theses, dissertations, monographs, reports .[[1]](#footnote-2)

**2-How Does One Obtain Information?**

* People do the following to obtain information:
  + - Consult experts
    - Review books and articles
    - Question/observe colleagues
    - Rely on past experience
    - Use intuition
* Using scientific research provides another way to obtain information
  + - Information is reliable and accurate
    - Allows an understanding of why research is valuable.[[2]](#footnote-3)

**3-Choosing the topic:**

To pick the right topic, focus on these factors:

* What are the priorities of the potential funder/employer, such as the company or institution?
* Are there any relevant recent studies with results you can build on and explore with further research?
* Can you creatively adapt your experience — whether post-grad or professional — to make you the natural candidate? They don’t just need to believe in the research project, but also in your ability to manage it successfully.

Do your research, no pun intended. Once you’ve got the topic, you need to work on fleshing out the core ideas .[[3]](#footnote-4)

**4-Factors influencing Subject Choice**

Many studies show that subject choice is affected by a number of factors first and foremost, students choose a subject for further study if they find it interesting and/or enjoyable; they can also be influenced by peers. Another study carried out by Ashworth and Evans (2000) shows that the perception of difficulty and the grades achieved might also affect subject choice. This is where student ability can also impact subject choice. Another factor in play is university course requirements.[[4]](#footnote-5)

**5-THE 4FS FOR SELECTING A RESEARCH TOPIC:**

* Fun
  + Will you enjoy spending time on it?
* Feasible
  + Can you get access to data; do you have the skills needed (or can acquire them)?
* Fundable
  + Can you afford it – cost of data, travel, software, other needed services?
* Functional
  + What difference will your research make?
  + What difference will your research make?
* **Drafting an RFP :**
* RFP: an invitation to bid on providing research
* May go by many other labels
* Generally includes:
  + Need for the research
  + Technical requirements such as sample size, data accuracy and reliability
* How selection will be made
* How to submit proposal

Deadlines .[[5]](#footnote-6)

**Choose a subject:**

* Based on an idea
* Based on your experience
* Based on your reading
* Originality

**The important features of a research design:**

* + **A plan**

Specify the sources & types of information relevant to the research problem

* + **A strategy**

Which approach will be used for gathering and analyzing the data

* + **The time and budgets**

Most studies are done under these two constraints. .[[6]](#footnote-7)

**Define Your objectives:**

* Try to keep these simple
* The more variables the more difficult
* Use the opportunity
* Get help at this stage
  + Senior colleagues
  + Experienced researchers

**Literature search:**

* Check to see if your idea is original
* Get articles
* Read articles and their references
* Most of these will be vital when writing up reports
* Find gap areas
* Find obsolete measurements and results
* Define objectives of the study. [[7]](#footnote-8)

1. Jennifer Hartle and Catherine Doyle: **Guide to help undergraduate students analyze, synthesize and write about scientific literature**, Department of Public Health and Recreation College of Health and Human Sciences San Jose State University , p13 [↑](#footnote-ref-2)
2. Mc Graw : **The Nature of Research,** Mc Graw Hill companies, Inc, 2006 , P22 [↑](#footnote-ref-3)
3. https://monday.com/blog/project-management/why-is-the-research-plan-pivotal-to-a-research-project/ [↑](#footnote-ref-4)
4. MAGRO Miriana, MUSUMECI Martin : **Trends and Patterns in Subject Choice by Science Students at Sixth Form Level in Malta**, New perspectives in science education [↑](#footnote-ref-5)
5. STEPHEN L.J. SMITH **: Practical Tourism Research**, COMPLEMENTARY TEACHING MATERIALS

   2nd Edition [↑](#footnote-ref-6)
6. **Thomas Varghese: INTRODUCTION TO RESEARCH METHODOLOGY, Dept. of Physics**

   **Nirmala College, Muvattupuzha, 3 October 2023**  [↑](#footnote-ref-7)
7. **Thomas Varghese: INTRODUCTION TO RESEARCH METHODOLOGY, Dept. of Physics**

   **Nirmala College, Muvattupuzha, 3 October 2023**  [↑](#footnote-ref-8)