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**Exploring EFL Learners' Target Needs in using
Software Applications during the Research Process
The Case of Master two Students of English at Biskra
University**

A Dissertation Submitted to the Department of Foreign Languages in Partial
Fulfillment of the Requirements for the **Master's Degree in Sciences of the Language**

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Declaration

I, **Ikram HOUFANI**, do hereby declare that the work presented in this dissertation is solely my own effort, and has not been submitted for any academic institution or University for any degree before.

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Dedication

To my everything "MY MOM"

To my hero "MY DAD"

To the person who handles my mood, depression, overthinking and multiple personalities

"GEMINI ME"

To all my sisters and brothers "Wafa you are the best!"

To my best friends, my nephews and nieces... Without whom this dissertation would have
been completed a month ago.

Thank you for your support, love and encouragement!

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Abstract

In an increasingly digital world, information and communication technologies (ICTs) play an important role in research. Hence, being computer literate becomes one of the characteristics of a good researcher. However, many students face difficulties on the level of computer literacy that may affect their research dissertation quality negatively. The present study anchored its exploration on the necessities, wants and lacks of master two students on using the different software applications during their research journey. Expressly, it was an attempt to explore students' target needs in addition to the factors affecting their use of software applications in an effective way in undertaking their research. For this purpose, the Mixed-methods approach was adopted to gather data regarding students' and teachers' perspectives. In order to gather the necessary data three tools were used including; students questionnaire that surveyed (forty= 40) master two students at Mohamed khieder University of Biskra and a focus group conducted with five (n=5) students from the same population. In addition, a semi-structured questionnaire was administered to eight (n=8) teachers of research methodology due to their experience and knowledge of the needed skills of master students as novice researchers. The findings revealed that novice researchers face difficulties in research on the level of computer literacy. Students are lacking knowledge of the exciting software needed in research in addition to the lack of institutional support. The current study can encourage future researchers to find a solution to the problems facing master student in the course of research as well as it is a call for the institution to give more attention to the current issue.

Key words: Computer literacy; ICTs; research process; software applications; students' target needs.

List of Abbreviations and Acronyms

2D : Two-dimensional

3D : Three-dimensional

APA: American Psychological Association

CAQDAS: Computer-assisted qualitative data analysis software.

ICTs : Information and Communication Technologies

IT: Information Technology

MLA: Modern Language Association

PDF: Portable Document Format.

RP : Research Process.

SPSS : Statistical Package for the Social Sciences

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ملخص الدراسة

General Introduction

1. Background of the Study

Being a scholar entails doing a lot of research, reading, and writing papers. It is very important to have appropriate methods and tools to carry out the research process. Over time thanks to technology, learners find it easier to conduct research due to the wide variety of web tools that facilitate researchers' work and help easily sharing and disseminating research findings. Many software applications were developed to serve the researcher's needs and help him produce more in a shorter amount of time. The researcher can use the different software applications in every research step nowadays starting from the literature review until the analysis of the results.

Accordingly, being computer literate has become one of the characteristics of a good researcher due to the facilities provided by technology if used in an effective way. The use of the right software applications can improve the quality of research and create space for new ideas. In contrast, the lack of computing skills can affect negatively the research findings when using inappropriate tools and can cost the researcher time and energy as shown in many previous studies.

2. Statement of the Problem

Conducting research for the first time is not an easy task as novice researchers are supposed to have developed a set of skills in academic writing, research methodology, and in the use of technological tools that facilitate research and help gaining time. Many previous studies at Mohamed kheider University of Biskra show that EFL learners face many difficulties when conducting their research on the level of computer literacy. They cannot work with word processing, data management, spreadsheet and data analysis programs that affect the research quality negatively. Consequently, we decided to explore the students' lacks, needs and the main factors affecting the use of the different types of software

applications by master two students during their research journey. Moreover, we intended to know how the students want to study ICT courses and the main aspects they want to improve during the lectures. This may enable the ICT teachers and the institution to find a solution to this issue.

3. Research aims

The general aim of this study was to explore students' needs, wants and lacks in using software applications needed in research.

4. Research objectives

More specifically, the present study sought to:

- Discover the different software applications used by EFL learners at Mohamed kheidher Biskra during the research process.
- Determine the factors affecting the use of some software applications by the students.
- Explore the students' expectations toward the ICT courses.
- Uncover some of the best software for novice researchers to help them conduct and maintain their research with ease.

5. Research Questions

This research was guided by the following questions:

- RQ1: What are the factors affecting students use of the software applications during the research process?
- RQ2: What are the students' perceptions and expectations towards the ICT courses?

- RQ3: What can the institution do to cover students' needs on the level of computer literacy needed in research?

6. Significant of the Study

The results of the study may be of great benefit to the institution, ICT teachers and students of English division. First, since the main needs and lacks of the students in using the software applications were investigated, the result of this study may determine the main factors affecting the use of these software by the students. Thus, the institution can provide the students with the needed materials, tools and support to cover their needs. Second, this suggests to the ICT teacher to design the lessons for EFL learners according to their needs by introducing different software helpful in conducting research. Finally, as the use of ICTs needs more research at Biskra University, this study may motivate other researchers to carry on further studies on the same subject and focus on one type of software to be explored closely.

7. Methodology

7.1. Research approach

The present research requires an exploratory research design that allows for a deeper understanding of the studied phenomenon. It aims to find out the current state of the use of the software applications by master two students. The research combines both quantitative and qualitative methods because triangulation is required in order to provide a clearer understanding of the problem of investigation and ultimately test the consistency of the findings by the use of various instruments.

7.2. Population and Sampling

The target population of this study consists of second year master two students of science of the language at Mohamed Kheidher University of Biskra in the academic year 2020/2021 since they are dealing with their research. The total population (N=124) is divided

into 3 groups. A sample (n= 40) was selected purposively to answer the first questionnaire. Additionally, another sample composed of eight research methodology teachers (n=8) was also selected purposively to answer the second questionnaire. Their experience and knowledge about the different needs of the students during the research was the main reasons of choosing them. Moreover, five students volunteers (n=5) were used in the focus.

7.3. Data gathering Tools

In order to answer the research questions three instruments were used; namely: students' questionnaire, teachers' questionnaire and a focus group with students. Both the first and second instruments were semi-structured, designed to EFL second-year master students and teachers at Mohamed Khider University of Biskra, whereas the focus group took place in Google Platform with five second year master two students to collect data concerning their attitudes towards the problem being addressed.

8. Structure of the Dissertation

The current dissertation is divided into three main parts: the first two part are devoted to the theoretical background and the third to the fieldwork including data analysis and interpretation of the results. The first chapter focuses on the different research process steps according to Kothari and the role of computer in research nowadays. In chapter two, we provides a description and overview of software applications. More specifically, we focuses on the software

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Introduction

Research is a systematic process for gathering knowledge, solving new or existing problems, or developing new theories. In order to carry out research effectively, it is necessary for the researcher to know the right methodology. Understanding the research process is an important step towards executing a thorough research study. Therefore, this chapter is an attempt to shed light on the different research process steps, the importance of knowing how the research is done and highlight the characteristics of good researcher besides the relationship between research and computer.

1.1 Definition of Research Process

Research is a systematic process that enable the researcher to move from the known to the unknown: The term “Research Process” is composed of two words which are:

- a. Research: research is systematic and scientific process of gathering knowledge, to answer a question or to solve a new or existing problem. The term research itself consists of two words research: Re + search, ‘Re’ means again and again and ‘search’ means to find out something. The following is the process (Singh, 2006):

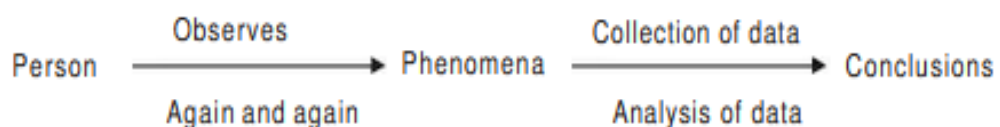


Figure 1. 1 Summary of Research Process Proposed (Singh 2006, p.2)

According to Cook (n. d.), “Research is an honest exhaustive, intelligent searching for facts and their meanings or implications with reference to a given problem. The product or findings of a given piece of research should be an authentic, verifiable and contribution to knowledge in the field studied” (as cited in Singh, 2006, p.3).

- a. Process: Longman dictionary of contemporary English (2002) lays down the meaning of the word process as, "a series of actions that are done in order to achieve

a particular result. "(p.1305). Thus, the term process is the steps taken by someone to do something or the actions happening while something is happening.

The definitions provided above illustrates that the research process is a series of actions needed to execute a research. According to Kothari (2004), research process refers to a series of steps or actions necessary to carry out research effectively, it guides the researcher to conduct research in a planned and organized sequence. kumar (2011), described it as "Research journey".

1.2 Stages of Research Process

The research process stages are different from discipline to discipline and expert to expert. Across disciplines and experts, however; there seems to be agreement with respect to the function of the research process and its main steps. The researcher can find many models of research process stages such as:

- a. Rummel and Baliane Research Process Model (1963), six-step.
- b. Kothari research process model (2004), eleven steps.
- c. Kumar Research Process Model (2011), eight-step.
- d. Tomasetti Research Process Model (2019), five-steps.

The researcher will focus on the eleven steps of the RP provided by Kothari (2004) that contains more stages than the other models. It is more understandable and systematic due to the additional stages that gave us more details about how the RP is done.

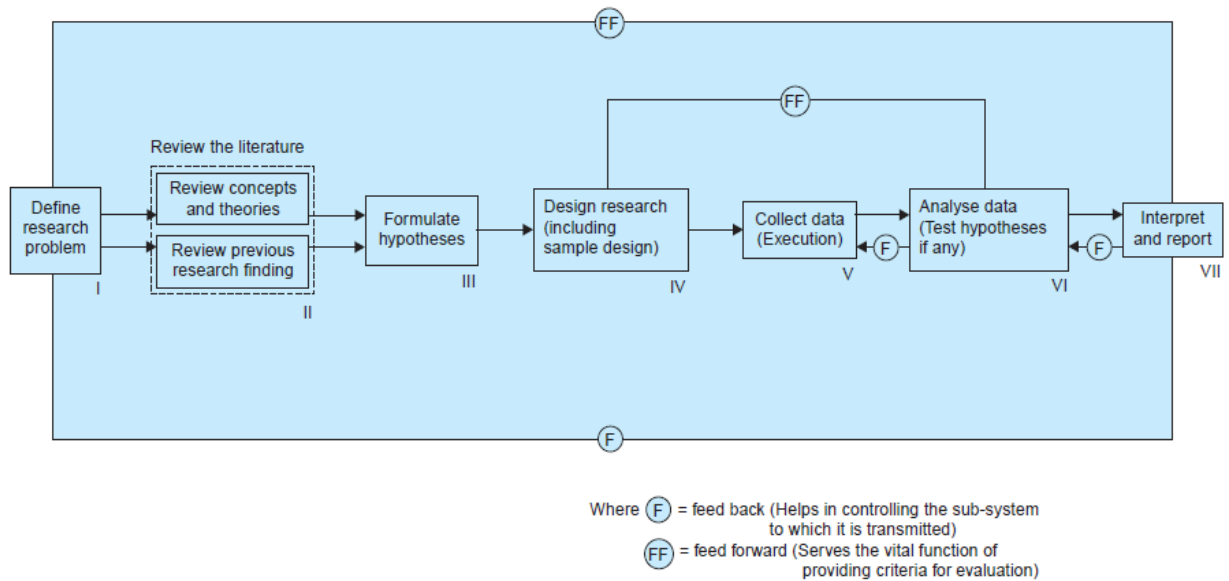


Figure 1. 2 Research Process in Flow Chart by Kothari (2004, p.11)

The chart above indicates that the RP consists of a number of closely related activities. As shown from I to VII. However; these activities overlap continuously rather than following a specific sequence. At times, the first step determines the nature of the last step to be undertaken; Which means that the various steps involved in a RP are not mutually exclusive; They should be viewed as an ever-changing interactive rather than a fixed set of steps. However, the following order concerning the various steps provides a useful procedural guideline regarding the research process : (1) formulating the research problem; (2) extensive literature survey;(3) developing the hypothesis; (4) preparing the research design; (5) determining sample design; (6) collecting the data; (7) execution of the project; (8) analysis of data; (9) hypothesis testing; (10) generalizations and interpretation and (11) preparation of the report or presentation of the results (Kothari, 2004). We are going to present each step in details.

1.2.1 Formulating the Research Problem

The first step in the process is to identify a problem or develop a research question. In this step formulating, or defining, a research problem is a step of greatest importance in the entire research process because it helps in narrowing the topic down to something that is

reasonable for conducting a study. Thus, formulating the research problem allows you to make clear, both to yourself and the reader what the purpose of your research is.

1.2.1.1 What is Research problem?

The research problem is the issue being addressed in a study. Creswell (2012) defined it as “a general educational issue, concern, or controversy addressed in research that narrows the topic” (p. 60). The source of the problem can be; a personal experience of the researcher in the field, a literature review on a research topic or a new innovations in a given research area. The existence of the problem and the ability to clearly identify the issue does not mean that the researcher can or should investigate it. The researcher should make sure that he have the needed time, sources and skills that unable him to do the research. Moreover, the research should be worthy, some of the important reasons for engaging in research is to add a new knowledge to the field, to fill a gap or replicates a past study but examines different participants (Creswell, 2012).

1.2.1.2 Steps in Formulating Good Research Problem

The problem should be stated carefully and defined unambiguously. Kerlinger (1986) has identified three criteria of a good problem statement:

- A problem should be concerned with relation between two or more variables.
- It should be stated ‘clearly and unambiguously in right form’.
- It should be amenable to testing (as cited in Singh, 2006, p.29).

According to Kumar (2001) the process of formulating a good research problem consists of a number of steps. First, Identify a broad field or subject that interest you then dissect it into subareas. Second, select what most interest you and try to raise research questions. Third, Formulate objectives, assess them and finally double-check all the steps. (Kumar, 2011).

1.2.2. Extensive Literature Survey

Literature review is a comprehensive summary of the main topic or problem that the research is going to investigate from previous research. The sources must be academic (it can be books, Articles and journals). The purpose of a literature as Rildley (2012) states, is that it provides a historical background and current context for the study and a relevant theories and concepts that underlie the research. Moreover, it is a supporting evidence that address the key findings and “gaps” in the research literature that the study seeks to address. The literature review is a place to make connections between what you are investigating and what has already been investigated in your subject area, it is a place in which to begin your own investigation.

McCombes (2019) believes that a good literature review does not just summarize sources but it analyzes, synthesize and critically evaluates to give a clear picture of the state of knowledge on the subject. She suggested a five key steps in writing a literature review:

1. Search for relevant literature
2. Evaluate sources
3. Identify themes, debates and gaps
4. Outline the structure
5. Write your literature review

In the same vein, Cooper (1988) suggests that literature reviews can be integrative, in which the researchers summarize broad themes in the literature or a theoretical review in which the researcher focuses on extant theory that relates to the problem under study then conduct a methodological review, where he focuses on methods and definitions. These reviews may provide both a summary of studies and a critique of the strengths and weaknesses of the methods sections.

1.2.3. Developing the Hypothesis

A Hypothesis is a supposition or proposed explanation made by the researcher. After he finishes the literature review, he states a testable statement of what he expects the outcome of the study can be. According to Goode and Han (n.d.): “A hypothesis states what we are looking for. A hypothesis looks forward. It is a proposition which can be put to a test to determine its validity. It may prove to be correct or incorrect” (as cited in Sigh, 2006, p.55). This explains that the hypothesis plays an important role because it sharpens the researcher's thinking and focuses attention on the main problem investigated. It also indicates the type of data required and the type of methods of data analysis to be used.

1.2.3.1 Types of hypothesis

There are two main types of research hypotheses, namely: directional and non-directional. Directional (one tailed), in these type of hypothesis; the researcher indicates the predicted direction of the relationship between the variables, it may be true if the null hypothesis is rejected. However, non-directional hypothesis (two tailed), shows that there is a relation between x and y. it suggests that there is a deference of some kind (eg; one group will do better than the other one) (Mackey and Gass, 2015).

1.2.4. Preparing the Research Design

The research design involves the development of a research plan to carry out the research. The choice of the research design will largely depend on the research purpose. The research purposes may be grouped into four categories: (i) Exploration, (ii) Description, (iii) Diagnosis, and (iv) Experimentation (Kothari, 2004).

An exploratory design is conducted about a research problem when there are few or no earlier studies to refer to. The focus is on gaining insights and familiarity for later investigation or undertaken when problems are in a preliminary stage of investigation.

It is a theory-based design, where the researcher is primarily interested in describing the problem addressed in the research. It is applied to case studies, naturalistic observations, surveys, and so on. This method includes data collection, analysis, and presentation.

Diagnostic research aims to examine the underlying cause of a certain phenomenon. It enables the researcher to find out more about the factors that lead to specific issues. This design usually consists of three research phases: (i) problem inception, (ii) problem diagnosis, and (iii) problem solution.

Experimental research design contributes to solve a particular problem by manipulating the independent variables to observe the change they have on the dependent one. It establishes the relation between the cause and effect of a particular happening (Jovancic, 2020).

1.2.5. Determining Sample Design

The population is the entire group that the researcher wants to draw conclusions about. However, the sample is the specific group of individuals that he will collect data from. Generally, there are two main types of research samples: probability and non-probability samples (De Vaus, 1996; Schofield, 1996; Bryman and Bell, 2003 and Sekaran, 2000):

Probability Sampling (Representative) is the type of sampling in which all the participants of the population have an equal chance of being selected in the sample. There are four main types of probability sample:

a) **Random Sampling:** In RS every member of the population has an equal chance of being selected.

b) **Systematic Sampling:** In SS every member of the population is listed with a number. But instead of randomly generating numbers, individuals are chosen according to some systematic rule.

c) **Stratified Random Sampling:** SRS involves dividing the population into subpopulations that may differ in important ways. Then select randomly from each group.

d) **Cluster Sampling** involves dividing the population into groups then select randomly some of these clusters.

Non-Probability sampling (Non-representative): a type of sampling where the participants do not have an equal chance for being selected in the sample.

a) **Convenience Sampling:** simply includes the individuals who happen to be most accessible to the researcher.

b) **Voluntary Response Sampling:** mainly based on ease of access. Instead of the researcher choosing participants and directly contacting them, people volunteer themselves.

c) **Purposive Sampling:** involves the researcher using their expertise to select a sample that is most useful to the purposes of the research.

d) **Snowball Sampling:** If the population is hard to access, snowball sampling can be used to recruit participants via other participants (the participants bring new participants).

e) **Quota Sampling:** it's the same as stratified sampling however the participants are chosen through a non-random sample selection.

1.2.6. Collecting Data

After choosing the right sampling, the researcher starts doing the first practical step in the research called collecting data. Before that; the researcher must know the type of data needed to answer his research questions. There are two types of data: qualitative and quantitative as shown below:

	Qualitative	Quantitative
Conceptual	Concerned with understanding human behaviour from the informant's perspective Assumes a dynamic and negotiated reality	Concerned with discovering facts about social phenomena Assumes a fixed and measurable reality
Methodological	Data are collected through participant observation and interviews Data are analysed by themes from descriptions by informants Data are reported in the language of the informant	Data are collected through measuring things Data are analysed through numerical comparisons and statistical inferences Data are reported through statistical analyses
<i>Source: Adapted from Minichiello et al. (1990, p. 5)</i>		

Figure 1.3 Quantitative versus Qualitative Data. Adopted from “In-depth interviewing, researching people” (Minichiello et al., 1990)

1.2.3.1 Methods of Data Collection

Here are the three famous data collection methods:

1.2.6.1.1 Questionnaires

According to Brown (2001) “Questionnaires are any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting them among existing answers” (p. 6). There are two types of questionnaires items; the first type is open ended questions, mostly used in the qualitative research because its allows the respondent to provide answers in their own words. However; in the second type the closed-ended questions, the researcher determines the possible answers of the items (Amrate, 2020).

1.2.6.1.2 Interviews

An interview generally is a qualitative research technique. It can be; a one-to-one format where one researcher interviews one interviewee, a one-to-many format where the researcher interviews a group of participants (Focus group), or group interview where one or more researchers interviews one or more participants (Group interviews). There are three types of interviews: Structured interviews, Semi-structured interviews, And Unstructured interviews. Each type is differ then the other according to the questions format (Amrate, 2020).

1.2.6.1.3 Classroom observation

According to Kumar (2018) “observation is a purposeful, systematic and selective way of watching and listening to a interaction or phenomenon as it takes place” (p.134). There are eight types of classroom observation: Participant observation, Non-participant observation, Covert, Undisguised, structured, unstructured, Qualitative, quantitative.

1.2.7. Execution of the Project

One of the most important steps in research is making sure that the project is going as planned. According to Kothari (2004), this step ensure that the implementation of the research activities is going in a systematic way and in the right time. He adds that “if the execution of the project proceeds on correct lines, the data to be collected would be adequate and dependable” (p.18).

1.2.8. Analysis of Data

Once the data are collected, the researcher has to analyze them to determine what occurred. There are two ways of argumenting when analyzing data: developing new concepts (summarizing) or deriving new relations between concepts (correlation).

The qualitative data is expressed in words and analyzed through interpretations and categorization. However, the quantitative data is expressed in numbers and analyzed through statistical methods (Creswell, 2004).

1.2.8.1. Qualitative data analysis

In order to analyze qualitative data the researcher goes through several steps. The first step should be done by the researcher is to organize the data (write it if it is recorded) and get familiar with it by reading or listen to it several time to get a sense of what it contains. Then, the researcher should create initial codes that helps him to connect with his data, by using colors, highlight the key words, notes in the margins or use concepts map. Third, he have to review those codes and combine them into themes to develop categories. Forth, after the identification of the themes the researcher should analyze the data carefully in order to understand the relationships between categories. Finally, report the finding, write and present themes in a cohesive manner (Creswell, 2012). The following Figure 1.4 summarize the steps mentioned above:

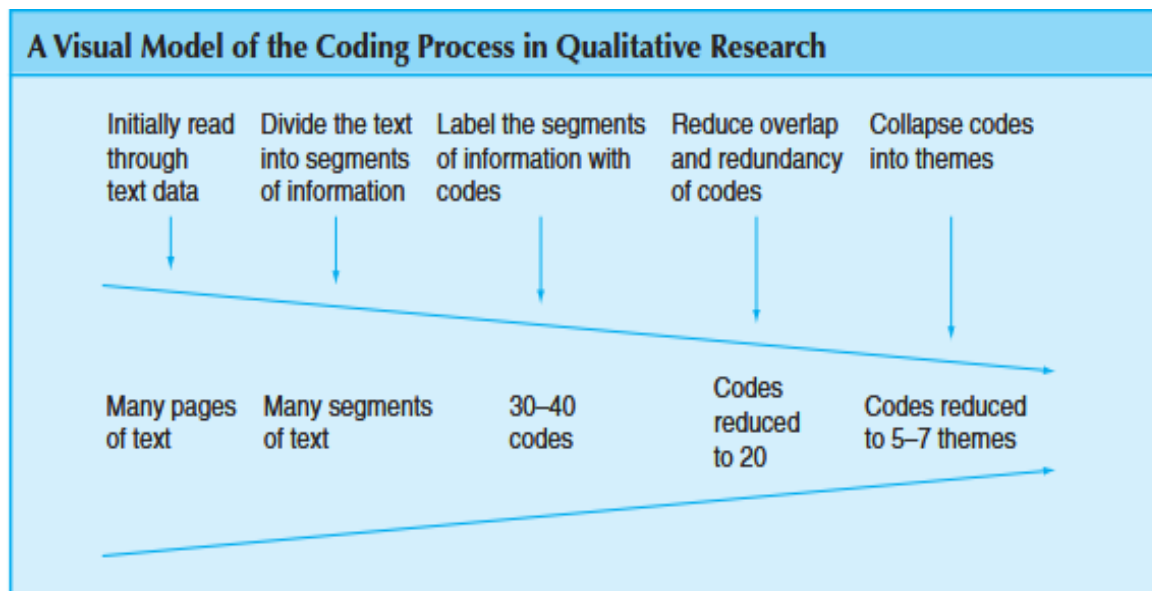


Figure 1. 4 A visual Model of the coding Process in Qualitative Research proposed by (Creswell, 2012, p.244).

1.2.8.2. Quantitative data Analysis

In order to analyse the quantitative data, kumar (2011) suggest the following steps:

- a. Editing: process the data to make sure it is “clean”.
- b. Coding: numbers are meaningless in themselves. So the research categorize and code the data. In order to code the quantitative data you need to go through the following steps: Step I developing a code book; Step II pre-testing the code book; Step III coding the data; Step IV verifying the coded data.
- c. Analysis: coded data can be analyzed manually or through the use of the statistical software.

1.2.8.3 Scales of Data

- a. The nominal scale: simply denotes category (gender, age, subject taught...).
- b. The ordinal scale: provides rank order (likert scales and rating scales).
- c. The interval scale: includes rank and additional characteristic: equal intervals, distances between adjacent numbers.
- d. The ratio scale: embraces the main features of the previous scales but one more additional characteristic: an absolute zero point (which permits forming ratio statements).

1.2.9. Hypothesis Testing

After analyzing the data the researcher has to test the hypothesis, whether the facts support the hypothesis or not. This is what should be answered in this step. Hypothesis testing, is a formal procedures used by statisticians to accept or reject the statistical hypothesis, There are various hypothesis tests such as t-test, Chi-square test, F-test that depend upon the nature and object of research. The hypothesis may be tested through the use of one or more type of tests (Kolawol and Sekumade, 2017).

1.2.10. Generalisations and Interpretation

After testing the hypothesis, the researcher can arrive at a generalization from the sample finding to the based population. Speculations, assumptions and opinionated statements that are not supported by findings must be avoided in generalizing the research finding. However, if the researcher had no hypothesis to start with, he interprets the results by explaining his findings guided by logic and reason, established theories and previous findings. That is called interpretation. Many times the process of interpretation may rise off new questions which subsequently lead to further researches (Kothari, 2004).

1.2.11. Preparation of the Report or Presentation of the Results

Finally, after finishing all the research process steps, the researcher has to prepare a writing report format of what has been done by him. The report should be written in a concise and objective style following the right research methodology style. According to Kothari (2004) the layout of the report in general includes:

- a. The preliminary pages or introductory part: the report should carry title and date followed by acknowledgments and forward. Then there should be a table of contents followed by a list of tables list of graphs and charts, if any mentioned in the report.
- b. The main text: the report should have; an introduction, summary of findings, main report and conclusion.
- c. The end matter: appendices should be enlisted in respect of all technical data., Bibliography and Index.

1.3. The Importance of the Research process steps

We can consider the research process steps as a “map” or a “guide” that enable the researcher to conduct his research in a systematic way without getting lost; because he is aware of what he is doing and what he is going to do next. Thus, Knowledge of the research methodology provides good training especially to the new researchers and enable them to do a better research. Kothari (2004) indicate that the importance of knowing the

methodology of research or how research is done stems from the following considerations (p.10):

- a.. It help the researcher to develop disciplined thinking or a ‘bent of mind’ to objectively observe the field.
- b. The knowledge of doing research inculcates the ability to evaluate and utilize the research findings with confidence.
- c. The knowledge of research methodology equips the researcher with the tools that help him/her to make the observations objectively.
- d. The knowledge of methodology helps the research consumers to evaluate research and make rational decisions.

1.4. Characteristics of Good Researchers

According to Apita (2010) a good researcher is the one who possess the following qualities which are: intelligence, honesty, curiosity, enough knowledge, and being good in oral and written communication. s/he should be good communicators when discussing their work with supervisors or when conducting an interview or a focus group. In the other hand, Stefanadis (2006) illustrate many characteristics that can be found in a good researcher such as:

- A good researcher should be intelligent and follow a critical way of thinking.
- A good researcher should be hard working, focused and devoted to his/her specific field of interest.
- A good researcher should updating knowledge is of utmost importance and can be accomplished in several ways, such as following the current literature, attending conferences or exchanging ideas with colleagues working in a relevant field.
- A good researcher must be artful and creator in order to transform his/her scientific queries and hypotheses into a realisable protocol.

- A good researcher should be truthful, have a clear language and be aware of his or her errors.
- A good researcher is a motivator and encourager to others through his own actions.
- A good researcher uses available resources to the best of his abilities.
- A good researcher likes to gain knowledge continuously.
- A good researcher should be modern and computer literate.

No one is born with skill it is developed through exercise. The researcher should be aware of these characteristics, and their impact on the success of the research process in order to practice before conducting their research.

1.5. The role of computer in Research

Kothari (2004) add a new chapter in his second edition book “Research methodology: Methods and techniques”, saying that: “In this edition a new chapter The Computer: Its Role in Research, have been added keeping in view of the fact that computers by now become a indispensable part of research equipment”. This means that, the research student in this age of computer technology, must be exposed to the methods and use of computer. According to Singh (2016) computer can be used in all the research steps. He categorized the steps of research to five major phases and claim that the computer can be used in these following phases as follow (pp. 128-129):

1. Conceptual Phase and Computer

This phase include formulation of research problem, review of literature, theoretical frame work and formulation of hypothesis. The Computer helps in searching the existing literature and find the relevant existing research papers so that researcher can find out the gap from the existing literature through the World Wide Web. Hence, the researcher is going to find more beneficial sources and save more time instead of visiting libraries.

2. Design and Planning Phase and Computer

Singh (2016) states that “Computer can be used for deciding population sample, questionnaire designing and data collection”(p. 128). There are a several software applications that helps in designing the questionnaire, calculate the sample size and makes the pilot study of the research possible.

3. Empirical Phase and Computer

Computer helps in collecting data and in data analysis using statistical software after collecting data, it is stored in computers in word files or excels sheets. It help in referring, editing and managing the data stored.

4. Data Analysis and Computer

Data analysis and interpretation can be done with the help of computers. For data analysis statistical software application are available. These software help in using the techniques for analysis like average, percentage and correlation.. etc. Computers are used in interpretation also “they can check the accuracy and authenticity of data. It helps is drafting tables by which a researcher can interpret the results easily. These tables give a clear proof of the interpretation made by researcher” (Singh, 2016, p. 129).

5. Research Dissemination and Computer:

Computer helps is converting the results into a research article or report which can be written, saved in a word or a PDF format and published on website. Moreover, Computers help in preparing references that can be written in different styles like (APA/MLA) etc.. A researcher needs not to worry about remembering all the articles from where literature is taken; it can be easily managed with the help of the reference management tools.

From the above, we can say that nowadays the skills and knowledge of how to use a variety of software applications become a necessity in conducting the research process.

Conclusion

This chapter has provided an overview of research, in depth focus on the research process steps which has been broken down into eleven steps according to Kothari. The steps are operational in nature following a logical sequence and detailing the various procedures and methods in a simple step by step manner that guide the researcher in his journey. Moreover, the chapter highlighted some characteristics of a good researcher in addition to the relation between computer and research since we are in a digital world that obliged the researcher to have some computing skills because the knowledge of the research process steps only are not enough to complete the research process nowadays.

Chapter Two: Application Software in Research

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Introduction

The computer plays a vital role in everyday life and becomes an essential tool in research. Various software applications were developed in order to facilitate for the researcher different activities through their research journey. This chapter sheds light on the second component of the computer which is software and its types in general. Then, we get through the specific software applications used in research by categorizing them into three groups which include: software application in pre-data analysis, in data analysis and in post/present-data analysis. Finally, the chapter presents the main characteristics of software applications and the importance of becoming computer literate nowadays in order to use them effectively.

2.1 Computer software

The computer system consists of two major components, namely, software and hardware. The hardware includes the physical parts of the computer. The software is the set of instructions that can be stored and run by the hardware. This combination forms a usable computing system.

The software is a collection of various programs that tells a computer's hardware what to do. Mowery and Nelson (1999) define the computer software and set its types as follow:

Computer software is the stored, machine-readable code that instructs a computer to carry out specific tasks. There are three broad classes of software: (1) operating systems, which control the internal operations of a computer, including network controllers and compilers (also known as "system-level" software); (2) applications tools, which support the development of applications in such areas as computer-aided software engineering and databases; and (3)

applications solutions, which enable a computer to perform specific tasks needed by the end-user (as opposed to tasks that manage the computer's internal operations), such as accounting and word processing. (p. 133).

They continue explaining the difference between applications (tools) and (solution) saying that the tools are the programs used to organize, store and manipulate data. However, the applications include programs designed for the end-user that serve a specific purpose. In addition to the operating system that manages the hardware and the software (Mowery and Nelson, 1999). These elements are best illustrated in Figure 2.1.

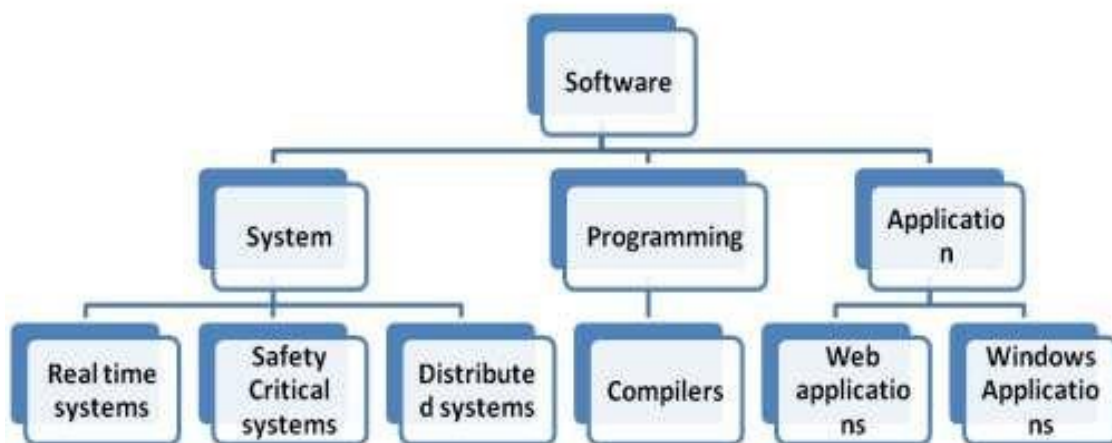


Figure 2. 1 Software Classifications (Keyvanpour, Hodayouni and Shirazee, 2012, p. 3)

Figure 2.1 summarize the main points that have been mentioned previously. It is clear that the applications are designed for the users in order to perform a specific task; whereas the programs and systems are the ones that help the computer to function effectively to serve the users' needs.

2.2 Software Applications

A computer program that performs a specific function, whether personal, educational or for business is known as application software. Every computer application software program is developed to help the user to complete tasks, whether it is taking notes, completing online research or any specific processes that may be related to creativity,

productivity, or better communication, It's also known as a productivity program or an end-user program (Bourgeois, 2019; Docter, 2008; Sreejith 2020).

In the same vein, Thakur (2020) states that software applications are programmed for simple tasks like writing documents, as well as for complex ones like analyzing large data. They can be downloaded or accessed online. Therefore, it can be a collection of small programs known as an application suite, such as Microsoft Office, or a single program known as standalone software.

2.3 Types of software Applications

Application software have been developed to facilitate a large number of functions. Some of these functions include writing, searching, calculating, and presenting information. It depends on the users needs and purpose of using those programs. There are plenty types of applications that can be used by the users according to their field. Thus, the knowledge about the different software is important in order to use it in the right way. The following application programs are the main types of applications which are known as productivity applications that can be used by anyone mainly: Word processors, Spreadsheet software, Presentation software, Graphics/audio software, Web browsers (Bourgeois, 2019; Docter, 2008; Sreejith, 2020).

2.2.1 Word processors

Word Processing software is used to create and manipulate text in addition to beautify the text giving the user many functions. Functions include the ability to type, edit and delete text throughout the document. Besides art features enables the user to choose the style s/he wants like font style, font effect, Color, and size to beautify the text. Additionally, the ability to insert tables, images, graphs is possible and can work with other applications like spreadsheets. The famous word processors software is Microsoft Word, however, there are a plenty of other applications like: Open Office Writer, Word Perfect and Google Drive

Document. The most important feature that the word processors have is that they provide the thesaurus; the option provides antonyms, synonyms, and related words for a chosen word or phrase in addition to the availability of auto-correction, grammar and Spelling check option for checking errors. Hyland (1990) believes that word processors improve students' motivation in writing. He states that: “word processing emphasizes the process rather than the product of writing, encouraging students to brainstorm ideas and move through a series of drafts to a completed version” (p.70); it opens the door for the student to be productive and less anxious because they are less intimidated by making errors. Word processors did not stop here but it gave the user the ability to save the document s/he wrote. The document can be saved in a variety of electronic file formats like PDF (Portable Document Format) or it can be published.

2.2.2 Spreadsheet Software

Spreadsheet software provides a way to do numeric calculations and analysis. It is used to calculate, manage numbers and small quantities of data, for example, Microsoft Excel, lotus 1-2-3 for windows, and number for MAC OS. In the spreadsheet software, data is stored in intersection row and column, where users can enter numbers, text, or formulas. The intersection of row and column is known as a cell, The cell is labelled with the row and column label like A1, A2 (Ronen, Palley, Lucas, 1989). Most spreadsheets also include the ability to create charts based on the data entered. Greschik (2020) goes on to point out that spreadsheets provide many formulas to perform calculations like arithmetic operations, logical operations, text operations that can be sometimes complicated. Consequently, it seems hard to use for some users however, others see the opposite and claim that it is easy to use and deals only with simple formula. Thus, Greschik (2020) states, “For a user without formal training, a spreadsheet may appear to be streamlined solely towards simplistic

problem formulation” (p. 2). Notably, this kind of software requires deep knowledge and training of how it works in order to use it in a beneficial way.

2.2.3. Presentation Software

Presentation software is designed to help the user to create slides or multimedia presentations. The user can present his thoughts and ideas with ease, clarity and use visual information in a productive way. It has three components: Text editor to create a text, insert graphics, videos, and multimedia files, Microsoft’s PowerPoint and Prezi are the most popular presentation software used by students, and the popular Mac version is called Keynote (Sreejith 2020). Within the presentation, the user can create special effects such as having text fade in or out and adding sounds, and set it up such that the slides transition after a set amount of time. As with other software types, presentation packages are available locally installed or web-based, free and commercial.

2.2.4. Graphics/ Audio software

Graphics software refers to programs that allow you to create, edit or make changes in visual data or images and represent it as 2D and 3D graphic design (Chen, 2003). Some examples of graphic software include Microsoft Paint, Adobe Photoshop and Picasa. While the Audio software programs deal with sounds, the user can record, listen to, or manipulate them using different applications such as Audacity, Sound recorder and iTunes. Besides, the programs that incorporate images, sounds, texts and videos sequence are known as multimedia software.

2.2.5. Web Browsers

Browsers are applications software for accessing the World Wide Web; they are used to browse the internet enabling the user to retrieve information across the web. The most popular ones are Google Chrome and Internet Explorer (Taivalaari, Mikkonen, Ingalls & Palacz, 2008). Taivalaari and Mikkonen (2011), point out the difference between the web

browser and search engines; a search engine is a website that allows you to search the internet once you have access by using the web browser. Using the web browser is impossible without the internet. Thus, many people think that the web browser is the internet in fact it is not. The user can access the internet without using a web browser, for example, using an application that cannot be performed without the internet without accessing to web browser (Treehouse, 2019).

All the above applications can also be classified based on their availability and share ability (Sreejith 2020). Some categories are closed source or open source applications. The closed source means that the code source is not available for everyone only the individual or organization that can change the software, for example, Google earth comes with restricted use. However, the open-source software is available with open source for everyone; the user can modify or add content in the software. Moodle platform is an example of an open-source, it could be free or paid. On the other hand, there are free or proprietary software applications. Freeware applications are available for use free of charge; you can download them and use them without cost. However, the shareware (propriety) is the opposite as the name indicates, the users are expected to pay if they want to use it or they can use it for a limited time or limited offer (Sreejith 2020).

2.4. Supportive software tools in the research process.

The development of software applications has also made a difference in the research process. Many types of software were invented for educational purposes known as educational software, and many software was developed by students. Daniel Bricklin was one of the students that disliked doing repetitive mathematics calculations for homework assignments, so he invented spreadsheets (TED, 2017). Nowadays, we find nowadays a variety of software applications used in research that perform specific tasks to facilitate the research process activities. Niteen (2020) states about the important role of ICTs in research:

ICT has brought everything available at the finger touch. In today's era it has occupied every aspect of life including research . ICT has its prominent importance in research and allied aspects of it. May it be literature survey, data collection, data processing and analysis; in every aspect ICT proven itself as a time saver, accuracy maintainer and making things simplified. Ultimately it leads to speed up in researching new things. (p. 81).

There are many software applications that can help the researcher during his research journey. The most popular ones are Search Engines, Research Management Tools, Statistical Software, Information collection Tools, Writing and creating Tools. Due to the large number and types of applications, Team (2021) classify them into three categories according to their usage in the research process. They include: application of software in pre-data analysis, Application of software in data analysis, Application of software in post/present-data analysis.

2.4.1. Applications of Software in Pre-data Analysis

The researcher should be aware of the different softwares that can help him through his research journey. Before the analysis, the research should have enough sources and a place to organize them, after that s/he can start to collect data in order to analyze it. Thus, Software applications in the pre-data analysis include academic search engines, reference management software and data collection tools.

2.4.1.1. Academic Search Engines

It is important that the researcher understand how to search online and retrieve scholarly information in order to access reliable and relevant information produced by academic researchers, institutions and professionals. Consequently, many academic platforms are available nowadays to serve researchers' needs. Those platforms help the researcher to find information about academic papers, authors, organizations, journals, and books from multiple sources and explore top citing articles and provide you with the relevant

sources by a system that is known as keywords searching algorithm (Hulagabali, 2014). ResearchGate, Microsoft Academic, CORE, Science.gov...in full are examples of academic search engines. However, the most used and popular one is Google Scholar.

Google Scholar is a free search engine that provides abroad search for scholarly literature across disciplines and sources. It contains a variety of sources with its citations, including; Peer-reviewed articles, theses, books, technical reports, abstracts and reprints. Google Scholar offers two search interfaces: basic or advanced search. To use a basic search, simply enter keywords and phrases in the search box. However, to perform an advanced search, go to Setting then Advanced Search page where you can specify keywords, phrases, authors, publications, dates, subject areas, etc. That keeps the researcher with the recent development in the field (Ridley, 2012; Vine, 2006) the following figure shows how advanced search in Google scholar work:

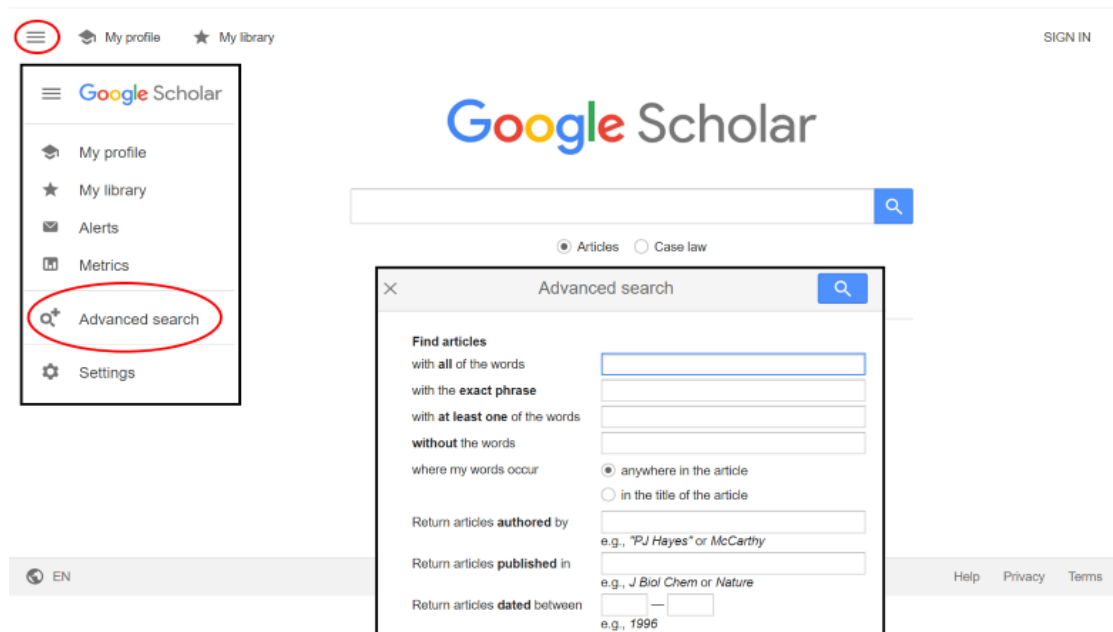


Figure 2. 2 Google Scholar User Interface (HKUST, 2021).

Not all academic sources are search engines; there are different academic sources like online libraries, academic YouTube channels, university archives..etc. However, the




search engines are the famous ones since they have a large number of sources available for everyone.

2.2.4.2. Reference Management Software

After collecting sources, the researcher needs a place to organize the collected references. Thus, reference management software (also known as citation managers or bibliographic management software tools) was designed for researchers and authors to build their personal library and provide them with many useful features. In general, reference management tools enable the user to store and organize the references in a searchable database. Moreover, it generates citations and bibliographies in the desired style (e.g. MLA, APA, etc.) (Zhang, 2012). However, each program is different from the other one and has its own features. The following table represents the main features of three popular reference managers including Endnote, Zotero and Mendeley.

Table 2. 1

Comparison of Reference Managers (Garden, 2018)

EndNote	Zotero	Mendeley
 MSU has made EndNote available on campus computers. You can set up preferences to search within specific databases and collect citations through a personalized interface, with hundreds of citation styles available.	 Zotero is a free software that you can download and use on Firefox, with plugins for Chrome and Safari. It saves citations and connections to online media, and takes screenshots of your internet research.	 Mendeley is a free software that you can download to your computer or use in-browser. It takes all of your PDF article files and organizes them. It allows for tagging, and has a growing community of scholars.
LEARNING CURVE		
Takes longer to learn, training recommended.	Quick to learn, especially with training.	Quick to learn, especially with training.
CONSIDERATIONS FOR USE		
Personal copies of EndNote are available for a fee through the Computer Store, or free on campus computers. Since EndNote is desktop-based, syncing between devices can be challenging, but continues to improve.	Zotero is used with your personal browser – to use it on multiple devices you have to carry your library settings on an external device or sync via Firefox, which is not secure on a public computer.	Mendeley has some difficulty downloading citations and PDF files from library databases. Older PDF files that do not have proper metadata will not give proper citation information to Mendeley.
STORAGE SPACE		
EndNote Desktop: your computer's storage capacity. EndNote Web: 2 GB free, unlimited with purchase of EndNote Desktop.	Zotero Desktop: your computer's storage capacity. Zotero Online: 300 MB free, additional space for a fee.	Mendeley Desktop: your computer's storage capacity. Mendeley Online: 2 GB free.

As shown in the comparison table, each reference manager has both strengths and weaknesses. None of them is perfect or can be used for all purposes (Zhang, 2012). Users should choose carefully the best software that can serve their needs.

2.4.1.3 Data Collection Software

The development of ICTs and the spread of the internet offer new opportunities for researchers to use digital technologies as data collection tools. Data can be collected online; the researcher can use a web-based for the interviews or an Internet survey for the questionnaire (Kenny, 2005). Many studies prove that online methods may be more attractive than in-person, due to many features including efficiency, convenience, cost-effectiveness, and flexibility (Hewson, 2008; Horrell, Stephens, & Breheny, 2015). However, it can be challenging for some researchers and participants who are not familiar with it and have a lack of computer literacy (Archibald, Ambagtsheer, Casey & Lawless, 2019).

Online interviewing methods as chat rooms, videoconferencing are more preferred than e-mail and instant messaging because they allow for real-time interaction involving sound, video, and written text. However, not all the platforms support online interview, for example, Skype does not currently offer the ability to record the meeting instead it requires the use of third-party providers (Hanna, 2012). Many previous studies (Archibald et al., 2019; Deakin & Wakefield, 2014; Hanna, 2012) indicate that Zoom may be better suited in compared to in-person interviews, or other videoconferencing platforms like Skype and face time. However, the participant may face few problems like poor sound/video quality due to the loss of Internet connection (Archibald et al., 2019).

Google form, survey monkey and Type form are examples of online survey that enable the researcher to collect data and create questionnaires online. There are many features of those programs which can enable the user to reach as many participates as he

wants quickly and easily and incorporate different question types (likert scale, multiple choices). The respondents receive the link of the questions (the answers can be anonymous) and the data collected in its original format can also be input directly into the statistical software (Wright, 2005). However, there are special features in each software that you cannot find in all the online surveys. Vasantha and Harinarayana (2016) highlights some special features of Google form that include:

- Unlimited surveys and respondents.
- Survey answers and data are automatically collected in Google Spreadsheets.
- Lots of theme options and you can add logo, images or videos.
- Skip logic and page branching.
- Embed survey into emails or website.
- Add collaborators and 100% free! (2016, p.4)

Web conference platforms for interviews (zoom and Google meet) and online survey tools (Google form and survey Monkey) provide the researcher with many positive features; however, the user should know how to use them in order not to face difficulties or technical problems. Besides, he should make sure to choose the right platform that serves his needs in addition to the software availability to ensure that the participants do not face difficulties to participate.

2.4.2. Application of Software in Data Analysis.

After collecting the data, the researcher needs to analyze them carefully. Thus, many software applications were developed to facilitate this stage for him. The software applications used at the data analysis stage are divided into two categories: Quantitative Data Analysis and Qualitative Data Analysis applications.

2.4.2.1 Quantitative Data Analysis Software

Many software applications are used in analyzing complex statistical data that allows the researchers to avoid mathematical mistakes and produce good analysis with accurate figures. Choosing the right data analytics software is challenging as no tool fits every need. Many researchers do not know that not all types of data analysis software like databases are good at analyzing research data (Jonathan, 2018). Each field requires specific software since the needs are different. Spreadsheets (Excel, Google sheet) and the statistics software SPSS are one of the best tools used in social science (Abbott, 2016). Excel is a widely used analytical tool that supports almost any standard analytics. It is suitable for simple analysis, but it is not suited for analyzing big data. However, SPSS is more powerful as the Statistical Package for Social Science; it supports the analysis of large data and provides graphics that have more analytical features in addition to many statistical options like testing the hypothesis that you may not find in an Excel spreadsheet (Abbott, 2016). Each researcher should use analytical software depending on the type of research, variables, scale number, and the most important thing the needs of the researcher.

2.4.2.2 Qualitative data analysis Software.

Computer-assisted qualitative data analysis software (CAQDAS) has been developed to assist qualitative research; it has many advantages and may significantly improve the quality of research (Hilal & Alabri, 2013). The CAQDAS facilitates managing multiple tasks and gives the researcher more time to analyze his data in a clear, managed and efficient way. Nivivo, Atlas.ti, Qda Miner and Hyperresearch are examples of CAQDAS; they help the researcher to organize the data sources, coding, segmenting and analyzing themes and build visual presentations to derive a significant conclusion (Talanquer, 2014). Analysis of qualitative data has become easier and less time-consuming because it reduces

a great number of manual tasks. However, the researcher should understand that those applications do not do the analysis for them they are just a tool for a better analysis.

2.4.3. Application of software in post/present-data analysis.

There is a variety of software used by the researcher after analyzing the data. Post-data analysis applications refer to the applications used by the students in organizing, summarize and presenting the findings by writing them in word format or presenting them using presentation software. Hence, the applications after post-data analysis mainly cover references and bibliographic tools, plagiarism detection and grammar checker (Sreejith 2020).

2.4.3.1. References and bibliography Tools

Reference management tools are not a place to organize and store sources only, but they enable the researcher to create a references list automatically as well. All that should be done is to provide the program with the needed style (APA/MLA...) (Hensley, 2011). On the other hand, many online bibliography tools provide the user with the references like Citation Machine, Cite This and BibMe. The programs allow the researcher to create a bibliography following the style needed. The following figure 2.3 is an example of how online

bibliography

works:

Figure 2. 3 Citation Machine for Android (Hashim. 2018)

It is so important to select the type of source like book, article, Youtube video...etc in order to get the right citation, Then the researcher should fill in the information of the source manually or by pasting the URL of the source (Kent, 2009). If the program finds the source, it will do the reference automatically. However, the research must double-check his references to ensure they are in correct form and style because it is just a machine that can make mistakes, too.

2.4.3.2. Grammar Checkers

Supporting writing software like grammar checker has been developed to improve writing and help to make surface errors and mistakes more apparent like spelling, punctuation, grammar mistakes and increase the user confidence in writing (Cavaleri & Dianati, 2016). Online grammar checkers like Grammarly, ProWritingAid, Ginger, and

Grammar Check are programs that recognize grammatical errors and alert the user to fix them by underlying the words or the expressions (Perdana & Farida, 2019). Moreover, it sometimes provides the user with the correct form by giving him options and examples. Some of those programs support plagiarism detection, however, not all of them are free to be used.

2.4.3.3. Plagiarism checker

Nowadays, it is effortless to find plagiarism content because of software development. Article checker, Turnitin and DupliCker are examples of plagiarism detection programs. The researcher can verify his work from plagiarism with a click of a button. He simply needs to copy and paste the text he wants to check in the box given by the application then click on the button “check for plagiarism”. The program will give a percentage or underline the part that contains plagiarism. Some programs as Quetext shows also the original source being plagiarized the researcher need to click on each identified plagiarism section and the original source will appear (Drew, 2021), the following figure shows how Quetext works:

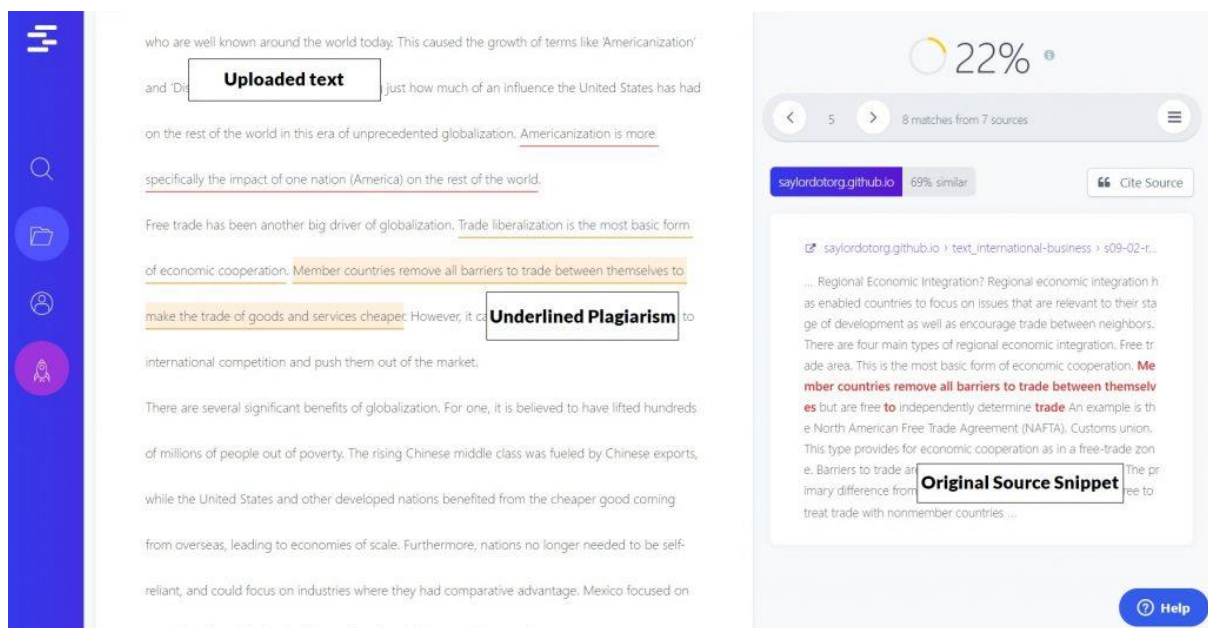


Figure 2. 4 Quetext Plagiarism Checkers (Drew, 2021)

The previously mentioned applications are examples of the important applications used by most of the researchers. However, many other applications can be used for example:

- a) Communication software: it helps the researcher to contact his supervisor or his classmates through email, Facebook, Instagram.
- b) The project management tools: it helps the researcher to manage his time, meetings, and ideas by writing notes like To do list, Notes.
- c) Presentation software: it helps the researcher to summarize and present his research visually like Prezi, PowerPoint.
- d) Graphic/Audio software: it helps the researcher to create or modify images, sounds, videos.

It is important to note that each researcher should use the application software according to his needs and specialty. Moreover, the knowledge of how to use it is the most important thing to avoid facing technical problems. The researcher should know how to protect his work and how to deal with the different kinds of problems.

2.5. Characteristics of software application.

Software programs are designed to facilitate a large number of activities.

Nowadays, application software plays an important role in the research process and helps the researcher to conduct research easier and faster. Singh (2016) indicates some features of software application that can help the researcher such as:

- a) Speed: The computer is known for its speed to perform any function and a large task very rapidly. Although the researcher can calculate data manually, a computer can quickly process data in a very short space of time. Thus, the researcher is going to have more time to complete and conduct further research.
- b) Storage: software databases can store and retrieve a huge number of data that can be used when needed. The researcher can store millions of information and

sources in a safe place and in an organized way by using simple folders, data management tools programs, word processors...etc which are stored safely within the computer.

c) Accuracy: Computers are incredibly accurate, a calculation of data can be difficult sometimes and the research can make mistakes that could damage the research paper. However, with software analysis applications it can be processed effectively when the data are entered correctly.

d) Diligence: the researcher can use the software application whenever he wants because the computer works tirelessly and does not suffer from lack of concentration and tiredness which humans can sometimes suffer with.

Software applications are invaluable and priceless tools that can improve the research quality and enable the researcher to do it in a short period of time. Hence, computer literacy is considered to be a very important skill that should be found in any researcher nowadays.

2.6. Students' Computer literacy

Computer literacy is generally defined as the knowledge and the ability to use computer, Ezziane, 2007 define computer literacy as:

Understanding computer characteristics, capabilities, and applications as well as the ability to implement this knowledge in the skillful, productive use of computer applications to individual roles in society..... using word processing, network browsers, mail, and spreadsheet software, or understanding an operating system are what are most usually subsumed under the label of computer literacy. (p.178).

Nowadays, IT skills are essential for the students because it plays an important role in their academic performance (LaPlant, 2015). Students acquire their technology literacy in two ways whether formally, through school and university programs and formal training; or informally, at home by themselves. Many previous studies (Bingimlas, 2009; Donnelly, McGarr & O'Reilly, 2011) show that teachers can improve students' computer literacy by

integrating it into the classroom. However, many barriers can face them like lack of accessibility, technical support and teachers' competence (Bingimlas, 2009).

Computer literacy becomes one of the important skills that a researcher should possess due to the development of the different software applications. Hence, the researcher should rely on himself in order to use the programs needed in research effectively without facing technical problems.

Conclusion

Due to the various software applications that can help the researcher in his research journey, the present chapter's main aim was to identify the use of software and its importance in research. Hence, we focused on the types of software used then we classify it into three categories according to its usage in the research process steps. Moreover, we highlighted the characteristics of those applications and how it benefits the researcher. Finally, we concluded this chapter with how the students nowadays should be computer literate to use the right programs without any problems in their research.

Chapter Three: Data Analysis and Interpretation of the Results

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CONCLUSION 104**Introduction**

In the previous two chapters, we have presented a brief literature review about the research process and the software applications used in research. Meanwhile, the current chapter deals with the analysis and interpretations of the results. It is divided into two parts: the first part outlines the dissertation methodology; whereas, the second part is concerned with the results of the collected data. Since the ultimate objective of this dissertation was to explore students' target needs in using software applications during the research process; two semi-structured questionnaires were used: the first one was administrated to master two students specialized in the sciences of language and the second one to teachers of research methodology at the University of Mohamed khider of Biskra. In addition to that, a students' focus group was conducted with a sample from the same population to supplement the findings. In this part, the findings are analysed and interpreted to answer the research questions.

3.1 Research Method

Research methods are the tools used in research to answer the research problem where it confirms or disconfirms the study's hypothesis. There are three types: the qualitative method that seeks to understand a phenomenon, the quantitative method that relies on numerical data and the mixed methods, which is the one used in this research. The mixed-method is a type of research that incorporates qualitative and quantitative methods as said by Johnson (2007), it is "the type of research in which a researcher or a team of researchers combine elements of qualitative and quantitative research approaches... for the broad purposes of breadth and depth of understanding and corroboration" (p.123).

Thus, the researcher opted to use the mixed method to guarantee a better understanding of the problem. In this study, the mixed method is the suitable method for this exploratory research because we need to collect students' lacks and wants in order to analyze their needs. Therefore, the quantitative method introduces the problem and its causes, its effects on the students and provides the teachers' views; whereas, the qualitative method enables to study closely the research problem introduced.

3.1.1. The Use of Mixed Method

According to Creswell (2012) there are 7 steps to use mixed methods which are; decide if a mixed-methods study is viable, determine the justification of combining methods, plan the data gathering procedure(s), develop the questions, collect the data, analyze the data and finally write the report accordingly.

Regnault, et al (2017) believes that there are advantages and disadvantages of using mixed method in research. First, the advantages can be divided into three major elements; the first one is to study research questions from different perspectives, second using qualitative information supports the interpretation of quantitative information, third it allows flexibility and the ability to make the most of small samples it capitalize on data reflecting individual lived experiences. In the other hand, the disadvantages can be demanding methodological skill and sets experience in both qualitative and quantitative research, meta interference in which the qualitative and quantitative strands connect and the integration of both qualitative and quantitative data require additional resources and time.

According to Bryman (2007), using a mixed method in research is challenging because it needs more time, research, and resources. On the other hand, it plays an important and valid role in research since it tackles all the aspects influencing the phenomenon by using different tools.

3.2 Population/ Sample

For the sake of collecting data, two samples were used: A sample of forty (n=40) master two participants, volunteers to respond to this questionnaire from a total population of 124 students at Mohamed khieder University of Biskra due to the fact that the target population is supposed to submit a dissertation by the end of the year. In addition to that, five (n=5) students within the same population were conveniently available to participate in a focus group. Moreover, eight (n=8) research methodology teachers voluntarily responded to this a questionnaire in the division of English of the same university.

3.3 Data Collection Tools

Two semi-structured questionnaires and a focus groups were used to explore second year of master two students' target needs in using software applications during the research process. The first questionnaire and the focus group were conducted with EFL second year master students of science of the language at Mohammed Kheider Univeristy of Biskra. The last data collection tool was a semi-structured questionnaire administered to research methodology teachers in the division of English of the same University.

The Questionnaire

A questionnaire is a tool used to gather data about a specific topic. Bell (1999) claimed that “the questionnaire is essentially a structured technique for collecting primary data. It is generally a series of written questions for which the respondents have to provide the answers (cited in Beiske, 2002, n.p). Moreover, the researcher used semi-structured questionnaire to ask participants a series of open-ended and close-ended questions.

The questionnaire provides the researcher with different insights to the problem. It is an appropriate tool to make participants respond in sensitive topics and guarantees

respondents' anonymity. However, the researcher can find incomplete or wrong answers while using the questionnaire as well as it can be unsuitable for some problems.

Focus Group

According to Morgan & Spanish (1987), focus group is a qualitative tool that is used to gather data where many participants discuss a particular topic. It provides the researcher with different points of view concerning the topic discussed that appear different ideologies of the topic. However, during discussion the participants responses can affect others responses. Hence, it needs much attention by the researcher to observe the participants attitudes and to make sure all of them are giving the same chance to respond.

3.3.1 Students' Questionnaire

3.3.1.1 Aim of the Students' Questionnaire

The target aim behind the use of this data collection tool was to obtain data about students' lacks concerning the use of software applications during the research process by asking them directly some questions about it and in an indirect way by assessing their computer skills, use and knowledge. Moreover, we tended to know how they find the research process and the barriers into the integration of software in research. Additionally, one of the most important things that we wanted to gather from this questionnaire is where the real problem lies concerning their computing literacy gap and what are their "Wants". Hence, the focus on their attitudes toward ICT courses and how they want to learn the required 21st century skills. Consequently, we would able to reach the main aim of this study, which is to explore the students' target needs to use the software applications effectively during their research process.

3.3.1.2 Description of the Students Questionnaire

The semi-structured questionnaire was designed to EFL second-year master students at Mohamed Kheider Biskra University since they are dealing with their research. The questionnaire was divided into four sections containing 10 questions mixed with open-ended and close-ended questions. The first section contains 5 questions that aimed to collect general information about the students' attitudes toward conducting research and some questions that are related to the problem being addressed. The second section, which contains a Likert scale that combines 14 software application types with 6 points Likert scale, offers options that focus mainly on the degree of students' familiarity and usage of those software applications. Similarly, The third section entitled "computer literacy", contains a Likert scale table about the question "Are you eligible to do the following tasks"; the table which contains 12 digital skills with 3 points Likert scale offers the options "Yes, somewhat, No" this section focused on the students' computer literacy in order to identify the digital skills gap. The last section, focused mainly on the research general aim; 3 open questions are asked in order to illustrate students' lacks, wants and needs in using the software applications during their research journey.

3.3.1.3 Validating and Piloting the Students' Questionnaire

After designing the first draft of the students' questionnaire, it was sent to the supervisor via email to check its content. The supervisor suggested some modifications to be made in order to add more precision to the questionnaire since it was very long and contains some mistakes. The supervisor's modifications have been taken into consideration while designing the final draft. After validating it, it was piloted with six students with the same population who did face some difficulties in recognizing some types of software applications since they were not familiar with all of them. Hence, examples were added beside each type mentioned for a better understanding.

3.3.1.4 Administration of the Students' Questionnaire

After the validation and piloting stages, the final draft was administered to the participants via the internet. The Facebook platform was the tool to contact the students; the link of the questionnaire was published in the Facebook group of the second year master students of science of the language. The online students' questionnaire was designed using the services of the survey software Google Forms which support making different types of questionnaires (structured, semi-structured and unstructured questionnaire). After Three weeks, 40 responses were received with complete answers from the students.

3.3.1.5 Analysis of the Students' Questionnaire

Section One: General Information.

Item 1: Have you conducted research before the master's graduation dissertation?

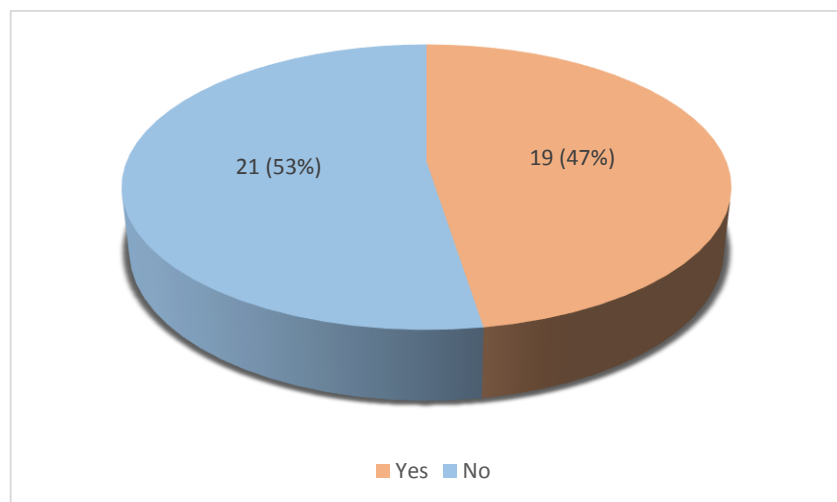


Figure 3. 1. Students' experience with the Research process

This question aims to have an insight into students' experience in conducting research. The above figure 3.1 reveals that 21 out of 40 students with a percentage of (54%) did not undertake research before the master graduation dissertation whereas (47%) of the

students have already dealt with it. This shows that not all master two students are familiar with the research process steps and this is their first time dealing with academic research.

Item 2: Since you are dealing with your research, how did you find it?

If it is a hard task, why?

Table 3. 1

Students' attitudes towards conducting Research

Option	Frequency	Percentage
An easy task	2	5%
A hard task	38	95%
Total	40	100%

Table 3.1 indicates that the majority of the respondents (95%) claimed that conducting research is a hard task, while only 2 (5%) stated that research is an easy task. although the above item illustrates that almost half of the participants have experience doing research, we found out that they also face difficulties and find it a hard task to do. Hence, we asked the students to determine the main reasons why they think that undertaking research is a hard task. Figure 3.2 displays their responses:

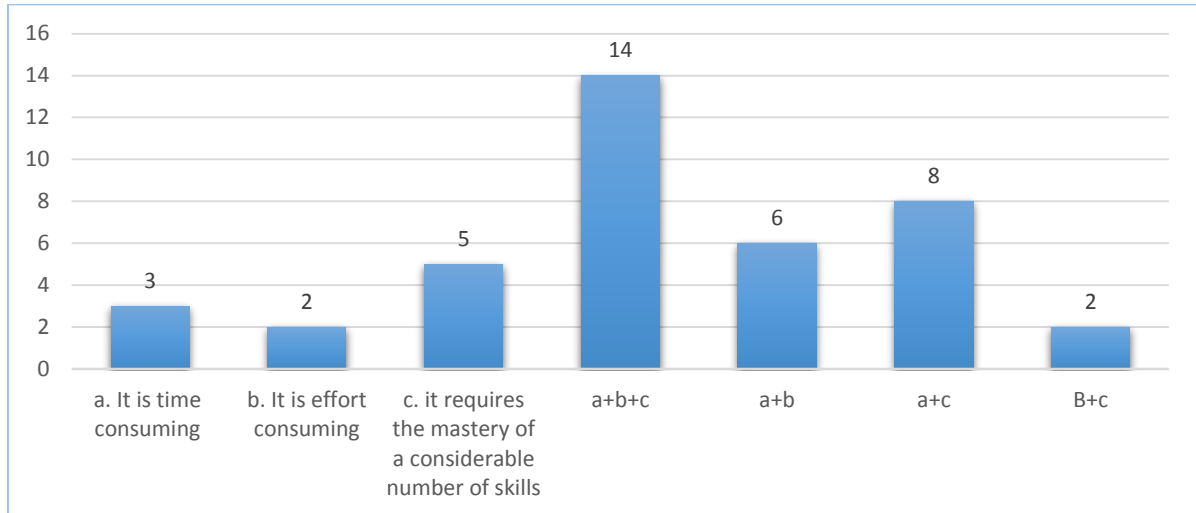


Figure 3. 2. The Reasons behind Research Process Difficulties.

The question investigated the reasons behind the research process difficulties. 14 Students claim that it is hard because it takes time, effort and requires the mastery of a considerable number of skills. However, the option “it is effort consuming” was the least chosen when compared to the other options. We opened the door for the students to provide us with any other reasons why they find research hard. They claim that it is a stressful practice besides their institution does not provide them with the needed materials like sources and the “lack of cooperation of the supervisors' behalf renders a 1-hour work take 3 weeks”.

Item 3: In which research process phase did you use the computer?

The question aimed to know to what extent the students integrate computers in their research journey.

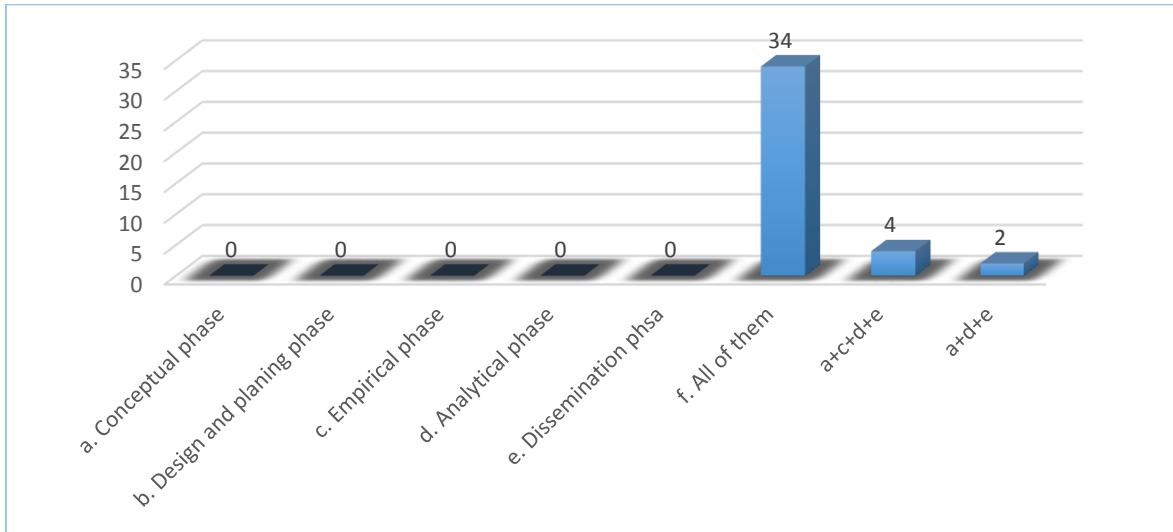


Figure 3. 3. Students' usage of computer during the research process phases.

The obtained results revealed that most of the students 34 out of 40 use computers in all the research process steps. 4 students indicate that they did not use the computer in the designing and planning phase, the rest of the students (2) did not use it in the empirical phase, too.

The results indicate that nowadays the use of computers has become a necessity in undertaking research and the students use it in almost every step in their research journey.

Item 4: How would you rate your own computer literacy?

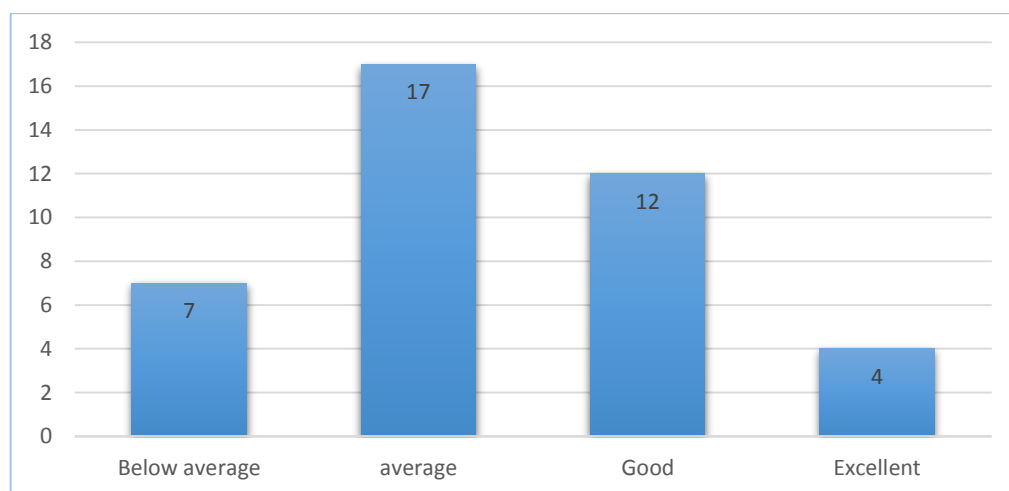


Figure 3. 4 Students' Evaluation of their computer literacy

The question attempted to indicate what the students think about their level in computer literacy. Figure 3.4 shows that the majority of students (17) considered their level to be average in computer literacy and (12) of them to be good. On the other hand, (4) found themselves to be excellent while (7) declared to have below average level in computer literacy. This means that the majority of learners (29) are under the average: they are between average and good when it comes to be computer literate.

Item 5: How have you learned computer skills?

This item tried to explore how the students acquired computer skills and if their university helps them to improve their computer literacy or not.

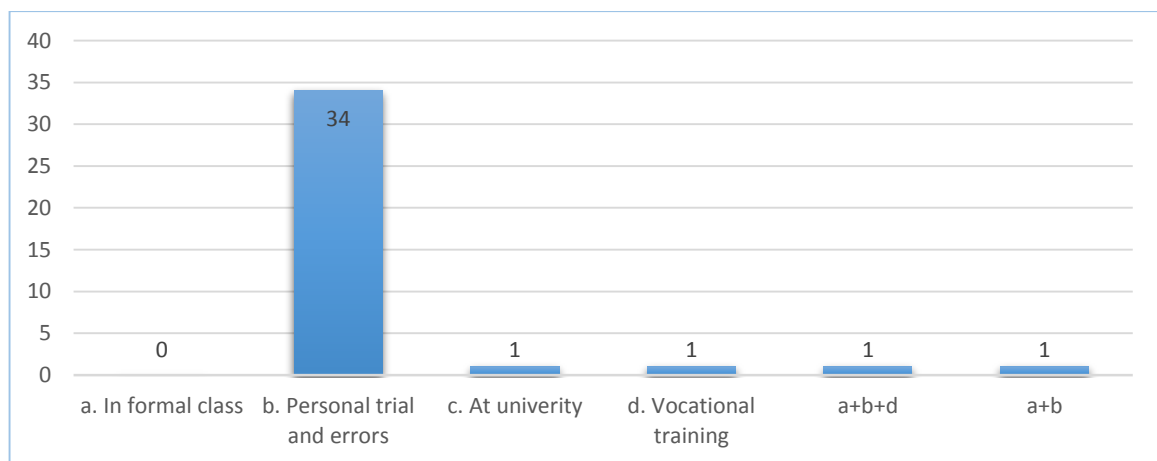


Figure 3. 5. Students' Sources of Computer literacy knowledge

The majority of the students 37 out of 40 learned how to use the computer through their personal trials and errors. Figure 3.5 shows that 2 students took a formal classes in order to improve their level. However, only 1 student claims that the university period helps him to learn computing skills. Accordingly, the plurality of learners build their computer skills by themselves.

This reveals that university curriculum did not meet students' needs when it comes to teach them computer literacy.

Section Two: Software Applications.

Item 6: Here is a number of software applications that you may or you may not apply in your research. For each type mark how much you are familiar with each software and if you are using it or not.

Since one of the aims of this study is to identify the different software applications used by the students in their research and the software they do not know. We have collected the most used software applications in the research process and provided the students with a Likert scale to mark their knowledge of each software and if they use it during their research or not. Consequently, we can identify from this item the main lacks of the students when it comes to the knowledge and usage of software in order to determine their needs.

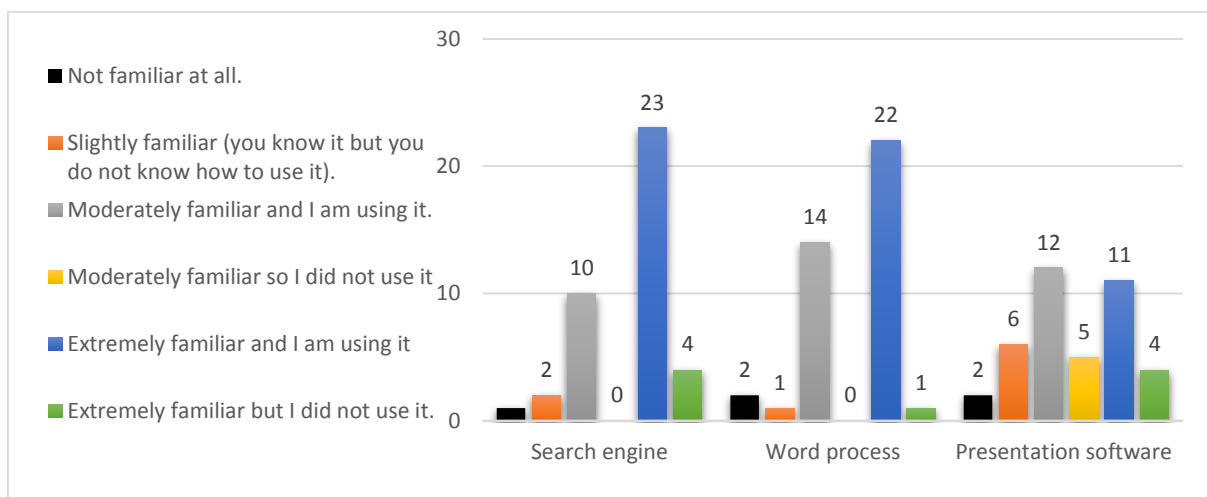


Figure 3. 6. Students' Familiarity and usage of Search engines, Word processor and Presentation software

As shown in figure 3.6, most of the students use Search engines (33 students), Word processors (36 students) in their research. On the level of familiarity, the majority of the students 22 to 23 are extremely familiar with both applications and 10 to 14 are moderately familiar. That indicates that Search engines and word Processes are very important in research and most of the students use them whether they are extremely familiar with them

or not. However, it is important to note that their computing skills in both applications are good in general since they are extremely familiar with them.

On the other hand, the presentation software was not used by the students as the previously mentioned applications. 23 out of 40 students do use this type of application in their research. 12 out of 23 students are moderately familiar with it and 11 of them are extremely familiar with using this software. However, in comparison with Word Processors and Search Engines, presentation software is less used. In fact, 5 of the students indicate that they did not use it because they do not know how to do so, whereas the other two software are used by students and none of them declared that they did not use it because of the lack of knowledge. Hence, it seems that Word Processors and Search engines impose themselves to be used by the researchers because of their importance.

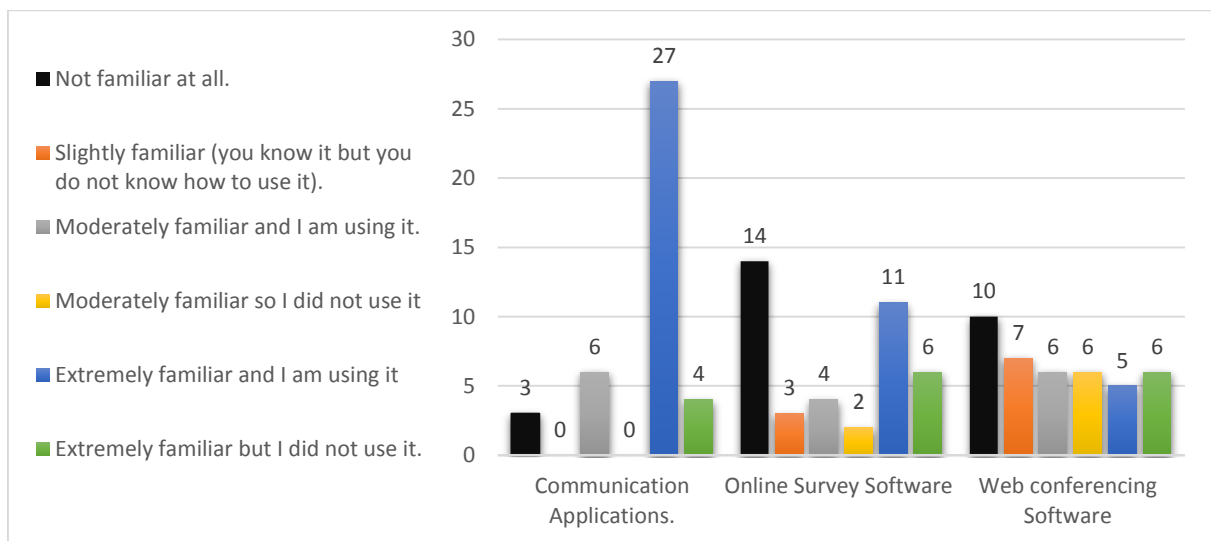


Figure 3. 7. Students' Familiarity and Usage of Data Collection and Communication Software

Figure 3.7 shows that the communication software are extremely known and used by the students. 33 out of 40 students used this application software in their research and most of them 27 are extremely familiar with it. This indicates that communication tools are

important during the research process since they ease the interaction between students and their supervisors and classmates.

On the other hand, the online survey software and the web conferencing applications are not that used by the students even though they are academic data collection Tools. 10 to 14 students are not familiar at all with the existence of those programs. In addition, 3 to 7 students who heard of it before but do not know how to use it. However, we found that 5 to 11 students did use it and they are extremely familiar with it.

To sum up, the students are eligible to use communication software in general. However, when it comes to surveying software and web conferencing tools they are not knowledgeable about them.

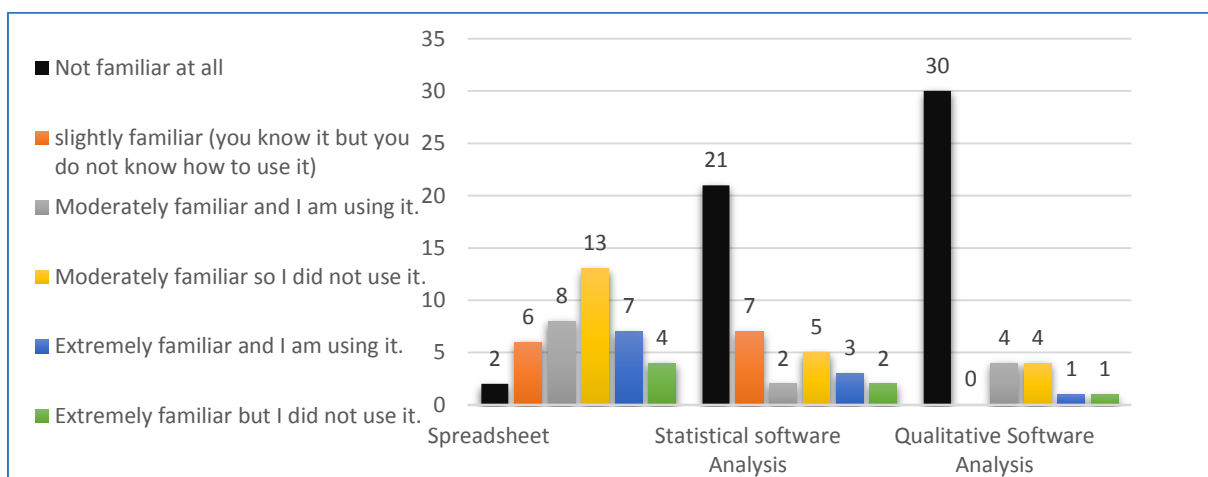


Figure 3.8. Students' Familiarity and usage of Software Analysis Tools

According to the results illustrated in the figure above, the majority of the students from 21 to 30 out of 40 are not familiar at all with the statistical software analysis and qualitative software analysis. Additionally, the statistical numbers of the students' familiarity and usage of the Spreadsheets are not positive. 21 students claim that they are moderately familiar with the applications and 13 students did not use them. However, 7

students declared that they are extremely familiar with the spreadsheets and they are using them.

The statistical numbers are negative when it comes to the software applications needed in the data analysis. Many students do not know about their existence and some of them avoid using them because they are moderately familiar with them.

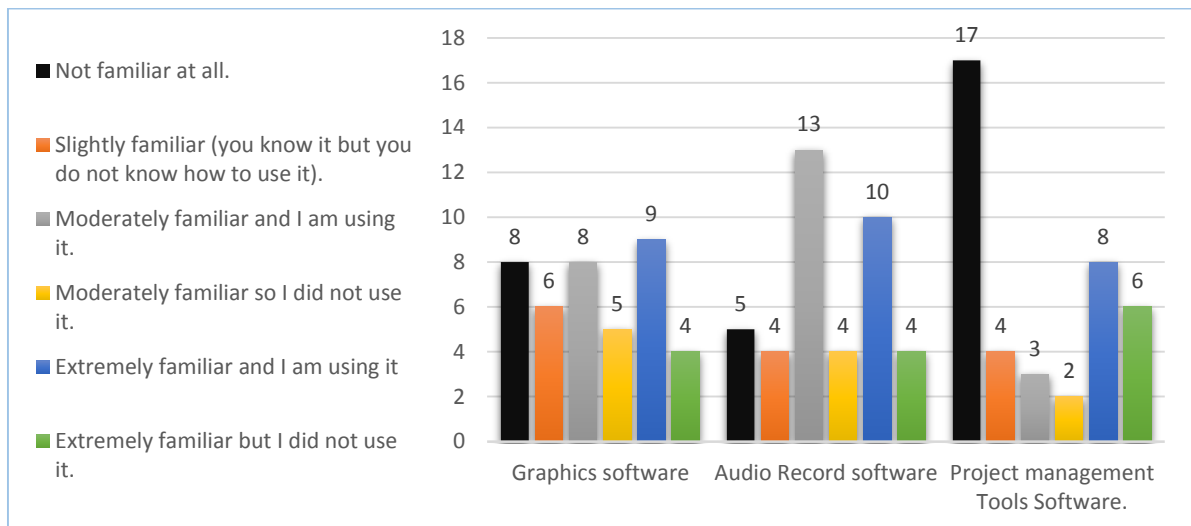


Figure 3.9. Students' Familiarity and usage of multimedia and management software

Figure 3.9 indicates that 17 students are not familiar with the project management tools at all as well as with multimedia software with a frequency of 8 to 9 students. However, 8 to 9 students are extremely familiar with all those software and they are using it in their research.

There is a balance of knowledge with multimedia software applications. However, most of the students are not familiar at all with the project management software.

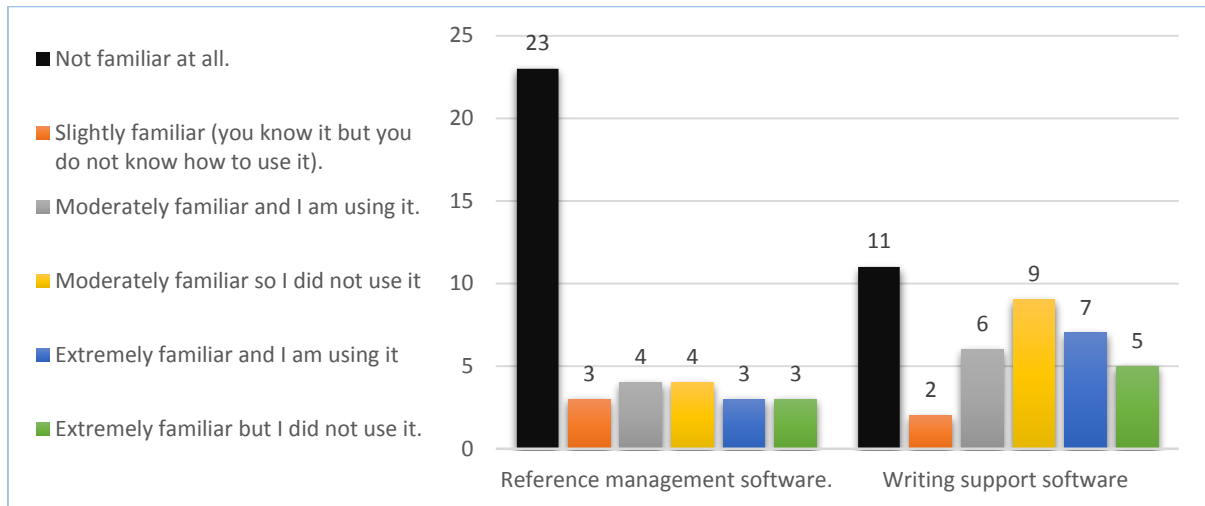


Figure 3.10. Students' Familiarity and usage of the supporting software applications

Figure 3.10 indicates that most of the students are not familiar at all with the supporting software applications used in research. 23 students are not familiar at all with the Reference management software. However, only a few students (7) are using it in their research and not all of them are extremely familiar with it. In the same path, with writing supporting software, 11 of the students declared that they are not familiar at all with them and 9 of the students did not use them because they are moderately familiar with them.

Statistically speaking students' familiarity and usage of the supporting software applications used in research is negative. The majority of the students do not know these types of software applications; consequently, they did not use them.

To sum up the above results, we can observe that:

- Most of the Students are familiar with (3) softwares which are mainly: Search engines, communication software and word processors.
- Most of the Students are moderately familiar with (4) softwares which are: Presentation software, Excel and multimedia software applications.

- Most of the Students are lacking knowledge of (5) existing softwares which are: Statistical Software, Qualitative analysis software, project management tools, reference management and writing supportive software.

Section Three: Digital Competence.

Item 7: Are you eligible to do the following tasks?

This question aimed to explore students' digital competence in some computer skills and test their knowledge about multiple skills related to the previous item (7) to make sure that the students did not underestimate or overestimate their level in computer literacy. The skills provided are not difficult in general, they are the basic skills needed to use the different software applications.

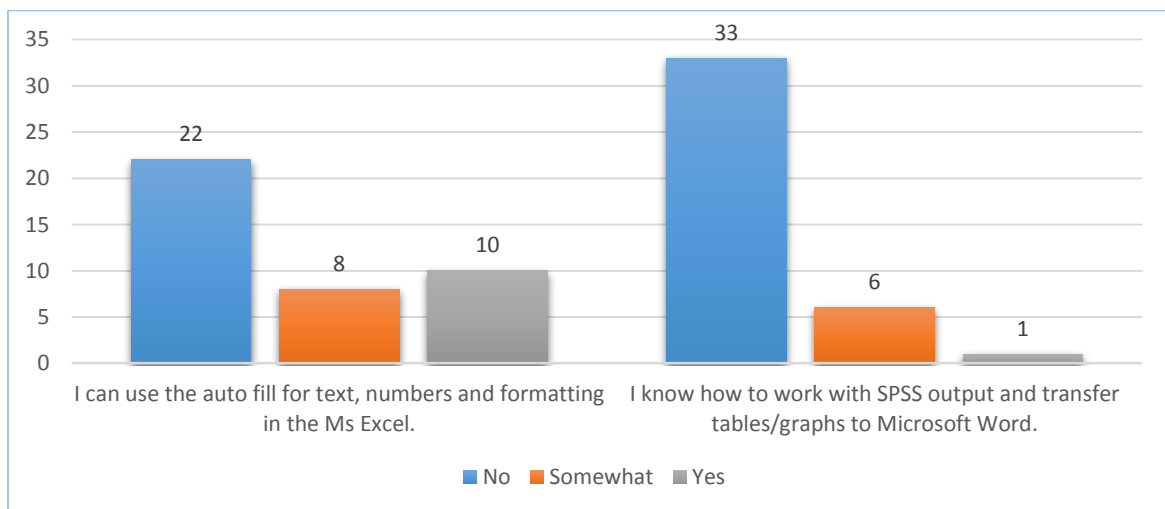


Figure 3. 11 Students' computer skills in using Data Analysis Software

Figure 3.11 indicates that most of the students' from 22 to 33 are not able to do basic things in both SPSS and Excel software. Less than 10 students know how to do the mentioned skills. However, 6 to 8 students select the option somewhat to describe their capacity in doing the tasks. Hence, students are not competent when it comes to use Excel and SPSS software.

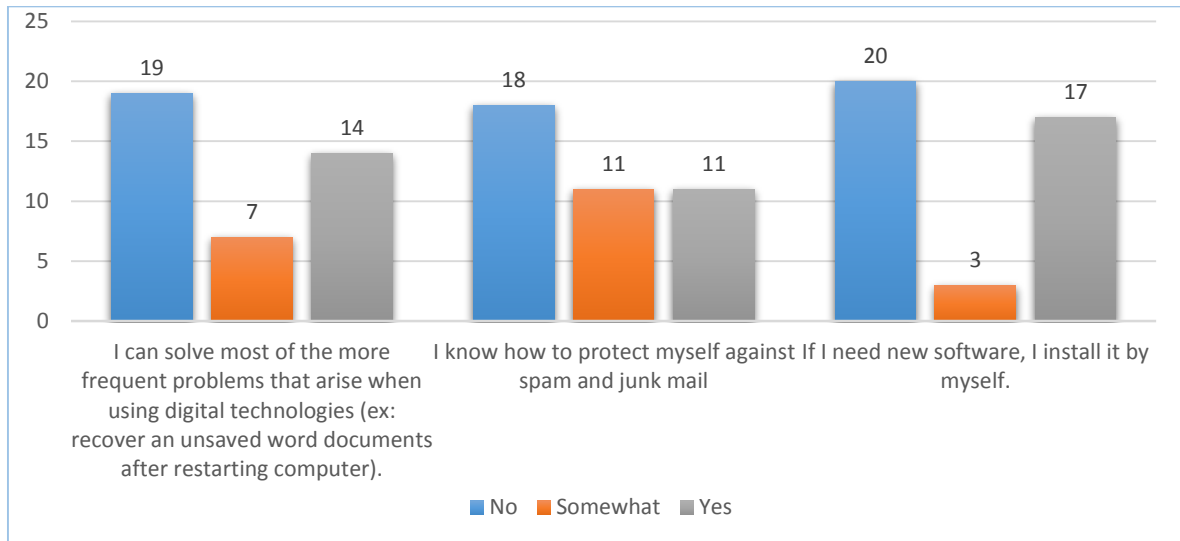


Figure 3.12. Students' digital skills in solving problems

Figure 3.12 shows some of the problems that may face the students while using software applications. Half of the students 20 out of 40 do not know how to download an application. Moreover, 18 to 19 students are not able to protect their computers from viruses nor how to deal with the technical problems that can face them. However, some of them (from 3 to 11 students) selected the option “somewhat” to describe their capacities in doing the mentioned tasks. Moreover, the score of the “yes” option is not bad 11 to 17 students are capable to solve these problems. Hence, in general students' skills in solving technical problems are average.

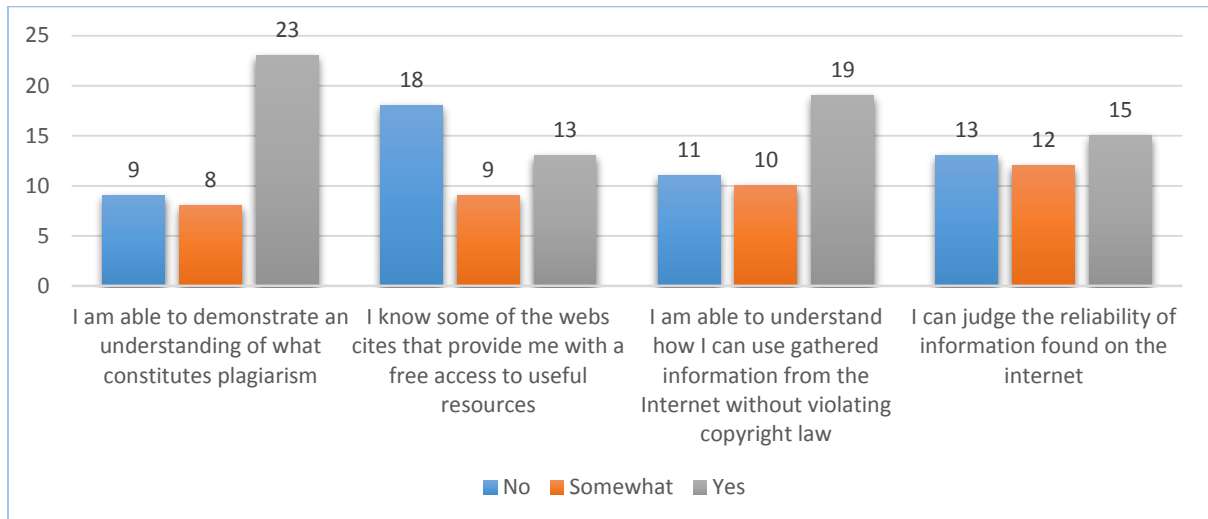


Figure 3.13. Students' proficiency in using search engines

Figure 3.13 contains some skills concerning the use of search engines. The majority of the students 19 to 23, are aware of the actions that could violate the copyright law and understand what constitutes plagiarism. However, the majority of the students 27 (18 no, 9 somewhat) know some free academic websites that provide them with useful sources. Whereas there is a statistical balance when it comes to judging the reliability of the sources (15yes, 12 somewhat, 13no). Consequently, students' competence skills in using the software engines safely are good in general. However, it is average when it comes to using it effectively.

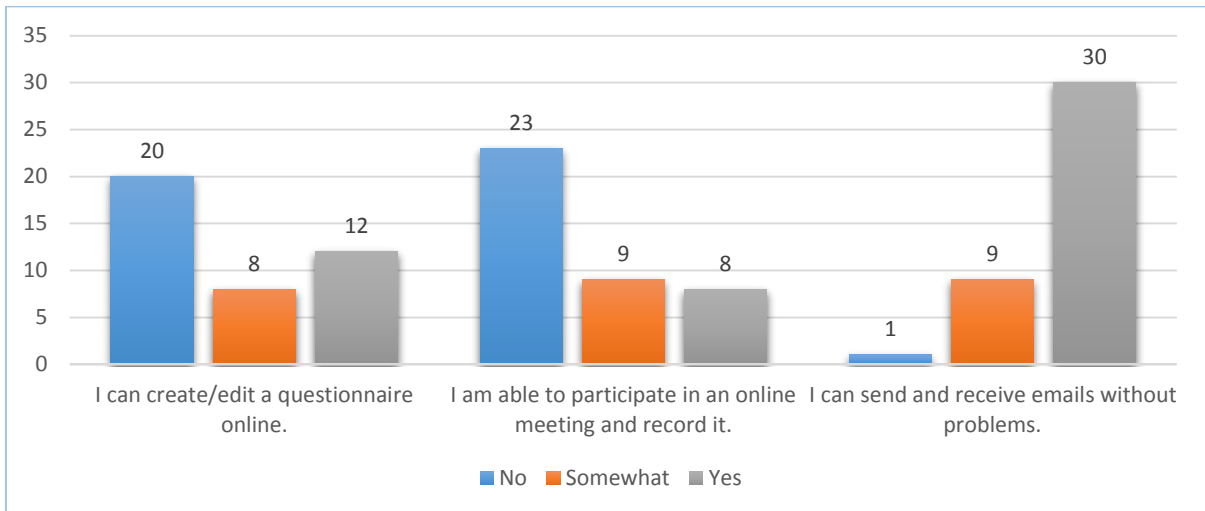


Figure 3.14. Students' digital skills in using data collection and communication applications

The Figure indicates that 20 to 23 students do not know how to create an online questionnaire nor how to participate in an online meeting and record it. However, 8 to 12 students indicate that they can do it. On the other hand, the majority of the students (75%) are eligible to send emails without any problems. Hence, students have low digital skills in using data collection tools whereas their skills in using email service is high.

To sum up the above results the majority of the students are:

Table 3. 2

Students' computer literacy

Students are eligible to de the following skills	Students are lacking computing skills in doing the following tasks
<ul style="list-style-type: none"> - send and receive emails without problems. - judge the reliability of information found on the internet - understand how to use gathered information from the Internet without violating copyright law - understand of what constitutes plagiarism 	<ul style="list-style-type: none"> - insert a table of contents and alphabetize my list of references automatically in Ms Word. - solve most of the more frequent problems that arise when using digital technologies (ex: recover an unsaved word documents after restarting computer). - protect computer against spam and junk mail - create, save and/or edit videos, sounds, and images. - create/edit a questionnaire online. - use the auto fill for text, numbers and formatting in the Ms Excel. - participate in an online meeting and record it. - work with SPSS output and transfer tables/graphs to Microsoft Word. - they know some of the webs cites that provide me with a free access to useful resources. - download software applications

Section Four: Student's needs, wants, lacks in using the software applications during the research process.

Item 8: Can you use all the types of software applications by yourself or do you need others' help?

If no, please specify which type of software.

Table 3. 3

Students' ability to use Software applications

Option	Frequency	Percentage
Yes, I can	19	47.5%
No, I need help	21	52.5%
Total	40	100%

The following table shows students answers:

Table 3. 4

Software applications that are hard for the students

Type of software	Frequency
Ms Word	3
Excel	12
Presentation software	3
Google form	3
SPSS	5
Management software applications	2

The rest of the students' comments:

- "Some of them are difficult for example as the previous examples you mentioned mendeley".
- "Excel, PSSS I don't know them at all. So how about using them. Definitely, I need someone to guide and help me."
- "Mendeley, i had to watch some youtube videos to know how it works at first."
- "Actually i have several problems with software specially with Excel".
- "In arrange the word processing and excel also google survey."

- “Google form, I asked my friend to do it for me”

From the tables and the comments above we found that 52.5% of the students need help in order to use software applications. The table 3.4 shows that most of the students mentioned Excel and SPSS as the most software they need help with. Besides, from the comments we can say that the students try to train by themselves in order to use software and they ask for help from other people. Hence, students do not do all of their research by themselves because of their digital skills gap and they waste time learning new digital skills instead of doing their research

Item 9: In general, what are the factors affecting the use of software applications during your research process?

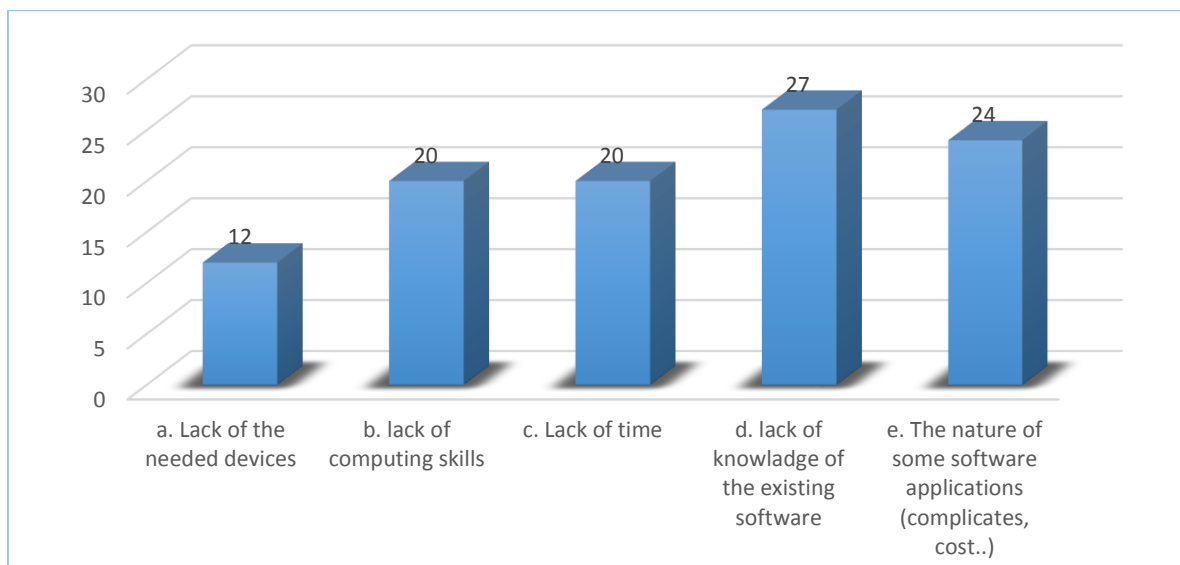


Figure 3. 6. Factors that affect students’ use of software applications

Figure 2.15 indicate that the majority of the participants indicated that the lack of the knowledge of the existing software application (27 out of 40) and the nature of some software application (24 students) are the major factors affecting their use of the software. However, 20 of them claim that the reasons affecting their use of some software are the lack

of time and computing skills. Moreover, 12 students said that they are lacking the needed devices.

Students justifications

Since one of our major aims is to know the lacks of the students and its source concerning the use of the software we asked them to justify their answers. Most of them claim that they did not know about the exciting software that can help them in their research before this year and some of them blame the ICT teachers, research methodology teachers and their supervisors. Many of them declared that they are not competent to use the software applications and they need time to learn how to work with it. Moreover, the lack of accessibility to some software and their complicated nature represents an issue in research.

Some of the students' comments:

- "I didn't know about many good software that can help me in my research like SPSS till this year and when I check it, I didn't know how to work with it and I didn't want to waste my time"
- "Couldn't use it because it requires training but we don't have time to do so"
- "Software programs are created to do our works in less time, and the ignorance in how to use them only causes difficulties to the user of these programs"
- "Since we didn't get in touch with these kinds of softwares in ICT sessions, it is the main reason for our lack of knowledge in using it"
- "Simply because my supervisor did not provide me with the needed software that I have to use"
- "There are so many useful applications that facilitate the process of dissertation; we do not know about it yet".

- “My pc does not support some software applications and sometimes they are not available in my country”
- “We did not study in research methodology that there are software that can help us in our research
- “Some software are not free and I can't pay for them.”
- “Because we are simply ignorant of such programs”
- “Im not good in ICT so I face most of the above”

Item 10: Did the ICT courses you had at university meet your needs and expectations?

Please, justify your answer.

This question aimed to know students' attitudes toward ICT courses and to what extent they were satisfied with it since it is the academic source for university students which enables them to develop their computer skills.

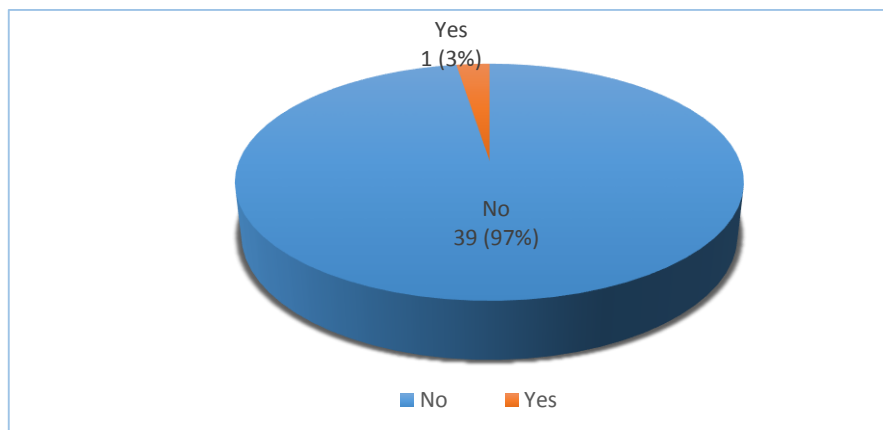


Figure 3. 7. Students' Attitudes towards ICT Courses

Statistically speaking, a great deal of respondents (97%) that represent 39 out of 40 students did not find the university ICT courses beneficial. Only one participant indicated that the courses meet his needs. This reveals that the students' attitudes towards ICT courses are negative.

Since the aim was to know the extent to which the courses were beneficial, we open the door for the students to justify their answer.

Students justification

The students claimed that the ICT courses they had at university were “useless and repetitive”, “purely theoretical” with “untrained teachers” and they did not practice nor having a computer lab or devices to use them. We categorized the students’ answers according to the issue addressed as follows.

Useless and repetitive

- “if you ask me to name ONE thing I learnt in ICT I wouldn’t be able to do it”.
- “Because we only studied the same things over and over again each time we have ICT.”
- “It was only how to create file or folder or how we write most of time in the word”
- “They were a waste of time and effort. They taught us about obvious, basic stuff that we already have an idea about”.

Purely theoretically :

- “It was purely theoretical, so it was useless for the most part”.
- “We did not practice at all”.
- “There was no deep training in Office apps”.

Untrained teachers:

- “No at all I didn’t learn anything I thought we are going to study some things that can help us in the research but we didn’t moreover the teacher teach us wrong things”.
- “Absolutely not. Only basics, I have been learning the same things since middle school. They even teach us things in contrast to APA guidelines. Which means you

even get more confused. Teachers are not language proficient also, they use French mostly. I do not think i learned anything beneficial”.

- “Literally the teachers gave as incorrect feedback and didn’t gave as the full mark because we didn’t follow the French methodology but our methodology! Besides the lectures was literally translated to English full of mistakes and purely theoretical!”

Lack of institutional support :

- “Those courses were both a waste of student time and university resources, the computers (the backbone of Information Communication Technology) don't work in an ICT lab, this should speak for the quality of the courses, not to mention teaching how to use Ms office while sat at a desk reading a paper”.
- Three people on one computer without internet access. how are we going to learn without practice?”

From what the students said, there are a lot of issues concerning the ICT courses that affect their learning negatively. The statement “I didn’t learn anything” was written more than 5 times. That indicate that the students are not satisfied at all with that course and they are lacking institutional support in the first place because the ICT course is neglected.

Item 10: what were the things (lessons, tools and training) that you expected from the ICT classes, but did not find them?

Since the aim of the study was to explore students’ wants, this question open the door for the students to describe how they were expected to learn ICTs courses and in a way or in another to provide us with the things that they wanted to learn and the way to do so.

The students did not provide us with rich data in this question. We asked them about the way they want to learn computing skills and how they want to be trained in order to use software effectively. However, most of them mentioned only the software applications that

they expected to study. Mainly, most of them said any software application that can help in conducting research. The table below summarize the software application suggested by the students and how often it was mentioned:

Table 3. 5

Software applications suggested by the students

Software Application	Frequency
Excel	13
Word	9
SPSS	9
Online survey tool	3
Powerpoint	5
Academic Web sites	1
Mendeley	1

As the table shows, the most requested software by the students was excel, SPSS and Ms Word. However, all of them mentioned the statement “Deep training in word” in every time they mentioned Ms Word basically because they already dealt with it but not in way that they can benefits from it.

The following statement are quotes that support the kind of training and tools they wants:

- “For instance, analyzing the results using the SPSS”
- “Each one with his computer and practice things that we need in order to do research”
- “For example studying about how to use softwares like SPSS or mendeley so we can know
- the use of some useful techniques that would help us in our dissertation like how to insert a table of contents how to create an online questionnaire..etc”
- “I expected more emphasis on statistical programmes and data analysis yet they were not supplied during those few lectures”

- “Statistical software, and some of the applications that we need in our research, we studied methodology for years and statistics but we do not know how to apply it”

As it is illustrated by the students they want to gather new skills that can help them in conducting their dissertation like how to collect data online and how to analyze it using statistical software. Moreover, they want to practice individually on the software needed in research.

Students' comments

We asked this question in order to allow the students to provide us with any suggestions concerning the topic under investigation. All the comments were mainly about the ICT courses, the importance of the software applications, the lack of institutional support in addition to the research methodology course. They stated that the software application helps a lot to accomplish things easier and faster. Hence, the knowledge of the different software applications before conducting research is important. They noted that the students should know and train themselves before the research in order to not waste time since the research process its self is time-consuming. They asked the administration to provide them with the needed materials and tools like sources in order to undertake research; one of the participants add “Pleaasee provide the students with University email, it is our Rights”. Moreover, they asked also the administration to hire a trained ICT teacher that knows what the English students need. They add that the computing skills can be acquired also from the research methodology courses and the lack of knowledge of software applications in research are mainly from the research methodology teacher, not the ICT teacher. The last remark was about the ICT course management they claim that it is favorable if the policymakers design an ICT module from the 1st year until the M2 in order to facilitate the research study.

3.3.2 Students' focus Group

3.3.2.1 Aim of the Students' focus Group

The aim of the students' focus group was to gain rich data about the research process problems since they are conducting their research. I wanted to know their lacks, wants and needs in using software applications in the target situation. Moreover, we wanted to explore the main difficulties they faced during the research process, especially in using software applications.

3.3.2.2 Description of the Students Focus Group

The focus group was designed for master two students since they are dealing with their dissertations. It includes six open questions that focus mainly on the students' difficulties in their research journey and in using software applications. Moreover, on their lacks and attitudes towards the ICT and Research Methodology courses. We could not conduct face- to face focus group because of the lack of time and the spread of Covid 19. Hence, we used online meeting platform instead.

3.3.2.3 Validating and Piloting the Students' Focus Group

As we mentioned in the previous tool, our first questionnaire was too long and contains many questions. Hence, our supervisor suggests for us to delete the open questions. However, we suggested carrying out an interview or a focus group instead since all the questions serve the aims of our study. The supervisor accepted the idea and advised us to conduct a focus group. The last draft of the questions was validated by her.

3.3.2.4 Conduction of the Students' Focus Group

After the validation, the sample was purposively selected; 6 students accepted the invitation. However, we faced difficulties in conducting the focus group on time because the participants were busy with their dissertations. The focus group finally took place via

the internet through the video-communication service “Google meet”. Only five students participated in our focus group; we shared the link of the meeting with them via Facebook private messages. Although we faced some problems with the internet connection, the meeting went well and ended after 48 minutes.

3.3.2.5 Analysis of the Students’ Focus Group

Item 1. Since you are dealing with your research, at which stage of the research process did you find difficulties?

This opening question aimed to uncover the most difficult stage the student face and the reasons behind it. Moreover, we would like to know if the problems they face in the selected step can be solved by the software applications or not. All the participants said that “Data analysis” was the most difficult stage in their research. When asked to justify their responses are as follow:

Participants’ response:

“In Methodology we focused only on the theoretical part in the past two years” “ for example we didn’t tackle how to formulate a questionnaire... and there was no actual guidance from our supervisors to how to do the analysis we all agree that it was the most difficult stage in our research. Due to many factors mainly .. there is no practice, practical instruction, there is no guidance on how to analyze the data that we collect . we weren’t previously taught, in the last year and this year also we focused on the theoretical aspects and the first stages like the literature review and formulating the research question. There was little instruction on how to analyze data which is a very significant part in our research... I was supposed to use SPSS but I didn’t also used the Excel I avoided that as well because simply I had no idea on how to use other software except the WORD to be

honest. I had no time to learn myself, so if we were taught to use the EXCEL , SPSS and other software maybe I could have used that with no problems,”

The students claims that the data analysis stage is the most difficult part in the research process due to the following reasons:

Methodology course

Students' state that they dealt only with the theoretical part of the dissertation they were not taught how to do the practical chapter. Moreover, there was no practice among the sessions of statistics. Obviously, the students are lacking knowledge of how the analysis should be done and they did not practice during the sessions on how to analyze the different types of data.

Supervisor guidance

The students claim that their supervisors did not guide them when they conduct the third chapter. The students think that it is the supervisor's role to guide them during the analysis stage and he should provide them with information with how to analyze data.

Lack of computing skills

The students avoid using the statistical software that can ease their analysis because of their computer literacy gap. One of the participants stated that she wasted so much time trying to see how the SPSS works and how it can help her but she could not use it. Hence, students face difficulties doing the analysis manually and waste so much time.

Item 2: How did you find the research methodology courses that you had at university?

The aim of this question was to know if the teachers of research methodology integrate ICTs in their courses in order to open the door for the students to practice or not.

Participants' response:

“...the lessons were repetitive there was nothing new and important that we need. ... also statistics and ICT courses was added as additional courses. They should have been through face to face sessions due to the fact that we really need them in our research they were just added later on online (online means that they were just lessons no instruction and tutorial on how to use certain things or software or practice,. mainly they were just theory that is it”

“ also we discussed the lacks of practice in research methodology we do not know how to analyze actively the data that we gathered (my colleague said we do not know even how to conduct proper questionnaire specially online questionnaire... However, we think statistics was beneficial in certain degree yet we couldn't tackle the main points and there was no practice... In this year statistics was add later on as an online course... it is so necessary they should have add them as face to face session it was neglected even though we really need it...moreover it was only for one semester”

The students indicate that research methodology courses did not serve their needs so far because of the following reasons:

- Repetitive lectures: students assumes that they tackled the same things each year in the research methodology courses.
- Lack of practice: students indicate that all the sessions of research methodology were purely theoretical. Moreover, they did not practice or studied the important thing that they need in the practical part like designing questionnaire.
- Statistics module management: students think that the statistical course is so important course but the institution neglects it. They said that they study it as an

online course this year even though it is so important. Moreover, they think that two years is not enough to study thin course.

- The Integration of ICT: Students expect the integration of ICTs into research methodology; they gave many examples like designing questionnaire online and on how to analyze the data in the statistics using statistical software applications.

To sum up the students expectations were high toward the methodology courses but in fact they did not meet their needs

Item 3: How would you describe an ideal ICT course for a master two students?

The aim of this question was to gain more data about the students wants.

Participants' response:

"I would say, it should be in an actual lab with PCs and internet access that we don't have. ...we need materials for practice and proper training...teachers need to be well trained in terms of language; they should have idea on what we are learning. ...we want something related to our methodology. The content should be relevant and include other software like Excel and how to calculate because we need that in data analysis...we need to use SPSS for example .. we should at least have an idea about the basic things of the other software not only Ms word; we need things that are equivalent to our needs; The ideal ICT course should be linked to the important aspects we may encounter when conducting data analysis, like the content should be linked to what we are studying... It should be focused on the main points and not on mere basic things, like creating tables. .. it is okay to study basic things cause there are many students who don't know the basics but not to study them for a whole semester... moreover its better if we study ICTs from the first year to the second master two

year starting from the basic things to the most important things that can help us in our research...

Through the students' responses, we can classify the students' wants into three basic themes as follow:

Table 3. 6

Students' wants concerning the ICT course

Themes	Students' demands
the environment	<ul style="list-style-type: none"> - Computer lab with the needed devices. - Internet access. - Modern devices. - A computer for each student.
The teacher	<ul style="list-style-type: none"> - Trained teacher that know their needs. - Teacher that speaks English. - The teacher should know the right methodology followed by the students.
ICT lessons	<ul style="list-style-type: none"> - "Study the ICT courses from the first year till the second year master two". - Study the basics of the different programs needed in the research process. - Statistical software. - Practice in the lesson.

Item 4: What are the different problems that faced you while using the software applications during your research journey?

The aim of this question was to gain more data about the students' lacks and the different problems they faced during the use of the software application in their research. In this question the answers were given individually since each participant faced a different problem

Participants' response:

Student A: "I was supposed to use excel but I did not, because I don't know how use it. I just used the WORD document, so I inserted the table in WORD and then I did all the calculation's manually".

Students B: "Even Using Word was difficult; I thought it was easy like, for example; I still didn't figure out how to organize page's numbers like in the APA style"

Students C: "I actually intended to use SPSS but I had no idea how it works. When I tried, I struggled too much I wasted so much time. I didn't know how to test the hypothesis or what are the functions of SPSS that can help me. ... I kept checking on you tube and at last I used Excel again, I really didn't know what to do".

Students D: "the WORD itself constitutes simple problems like numbering the pages, organizing the titles, organizing the reference tables as we were not taught how to do them in the Word. When we started preparing the research proposal, we were supposed to create the reference list. I didn't know that it can be alphabetize automatically, so I did it by myself. However, my supervisor kept saying its wrong without helping me.

Students E: "I didn't know how to create an online questionnaire and by the help of YouTube, I learnt how to do it. Then, after completing the collection of data online, I found that I forgot to add a title for a section in the questionnaire. Well I tried to write the title for this section and by mistake I deleted half of my questionnaire and I did not know how to

return it back. I found myself recreating another one and unfortunately if I were trained to know how to deal with the online software, I don't think that I would have faced such problems... I wasted a lot time in that stage”.

As indicated by the students each one face difficulties in different software applications. One of the participants added that after her classmates mentioned that difficulties they faced with the reference list saying: “Yeah I didn't know that I can do the reference list automatically also... if you remember last year in research methodology, we studied for a whole semester in the TD sessions how to do the references and practice with books We could have been taught how to use the references software tools in order not to waste time but we didn't...”

The students again highlighted that some of the research methodology courses should take place in the lab or at least to practice in lessons using the software application.

Item5: What do you think are the reasons behind the lack of computing skills among students?

Students illustrate the following reasons:

- “The lack of practice and.”
- “ lack of Motivation”
- “lack of instructions” students assume that the teachers and their supervisors did not encourage them to use those software.
- Lack of the needed devices “some student do not have access to computer and technology”.
- “lack of awareness... we didn't know that we are going to need them in the future and they are so important in our master dissertation”.

Students sum up the source of the computer skills gaps by blaming themselves, their institution and their teachers for the lack of instruction and support.

Item 6: In your opinion, what can your institution do to cover your needs?

The Students discussed this question and the main points were:

- Internet access in the labs and libraries.
- Online Library.
- “ Provide us with university emails in order to get access to free sources”.
- “ Hire competent teachers”(Talk English, and know the methodology).
- “Provide us with modern computers”.
- Provide the teachers of ICTs with syllabus that serves our needs.
- Statistics and ICT courses should be taught from the first year to the second year master.
- The institution should pay attention more to the ICT and research statistics courses.

Item7: Is there anything you want to add?

Students added some remarks concerning the issue being addressed the following are the main suggestions:

- “If they follow the solutions that we discussed, our level as master 2 student will be improved”
- “pay attention to the harmony between modules”
- “learning ICT and how to use computer from master one or even before why not to cover all the important aspect we need
- “ To learn ICT courses before the second year master not during the dissertation

- “I think the integration of ICT into research methodology would benefit us; I mean if we study some of the sessions of research methodology in the computer labs and practice this will help us a lot”
- “For the ICT courses we need a language teachers that knows our basics needs and our methodology”.

1.3.3 Teachers’ Questionnaire

3.3.3.1 Aim of the Teachers’ Questionnaire

The Third tool used in this study was teachers’ semi-structured questionnaire, which aimed to collect data from professionals about the lacks and needs of the students’ needs in using the software applications in the research process. We have choose to conduct this questionnaire with the research methodology teachers’ since they are more knowledgeable in that field.

3.3.3.2 Description of the Teachers’ Questionnaire

A semi-structured questionnaire was designed for research methodology teachers at Mohammed Kheider Biskra University; it is divided into four sections containing 19 questions mixed with open-ended and close-ended questions. The first section contains general knowledge questions about their teaching experience. The second section was about “The Integration of ICTs into research methodology courses”, the teachers were asked about how they teach research methodology and if they integrate ICTs or not. Section three was about the Role of the Supervisor, it contains some questions about their journey with supervision and what were the main lacks they observed in the students' research practices and the kind of support they gave to those who face difficulties in computer literacy. The third section entitled " master two students’ target needs in using software applications during the research process”, contains mixed questions like: Likert scale, open questions and

multiple choices. This section focuses on the students' needs and lacks. Moreover, we tried to explore teachers' views about the ICT courses. We focus on this questionnaire on gathering their opinion about what the students need since this is going to help us in our studies.

3.3.3.3 Validating and Piloting of the Teachers' Questionnaire

After designing the first draft of the teachers' questionnaire, it was sent to the supervisor via email to check its content as well as its face validity. She suggested some modifications to be made in order to add more precision to the questionnaire; therefore, some questions were deleted. The supervisor's modifications have been taken into consideration while designing the final draft.

3.3.3.4 Administration of the Teachers' Questionnaire

Due to the current circumstances (Corona virus), the questionnaire was posted online via Google form platform. The link to the questionnaire was shared via email. After a week, we found out that only 6 teachers answered our questionnaire. Hence, two other research methodology teachers were requested to answer our questionnaire. They accepted directly and answered it in a written form.

3.3.3.5 Analysis of the Teachers' Questionnaire

Section One: General knowledge

Item 1. How long did you teach research Methodology?

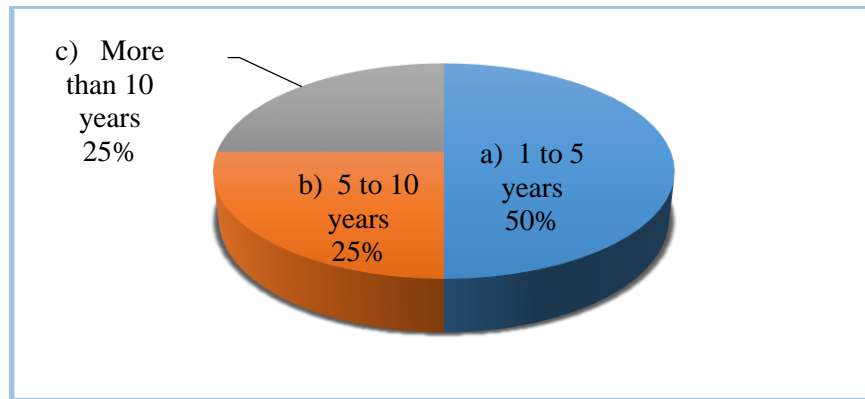


Figure 3. 8 Teachers' period of teaching Research methodology

Figure 3.12 indicates that there is a variety in the teacher's period in teaching at university. It shows that the dominant number of teachers, which is four (4), are those who have taught RM from 5 to 10 years (50%), while 2 teachers representing (25%) have taught RM for more than 10 years and the other 2 for 5 to 10 years. This variety in the teaching period enables us to collect different perspectives and experiences.

Item 2. How do you find teaching research methodology?

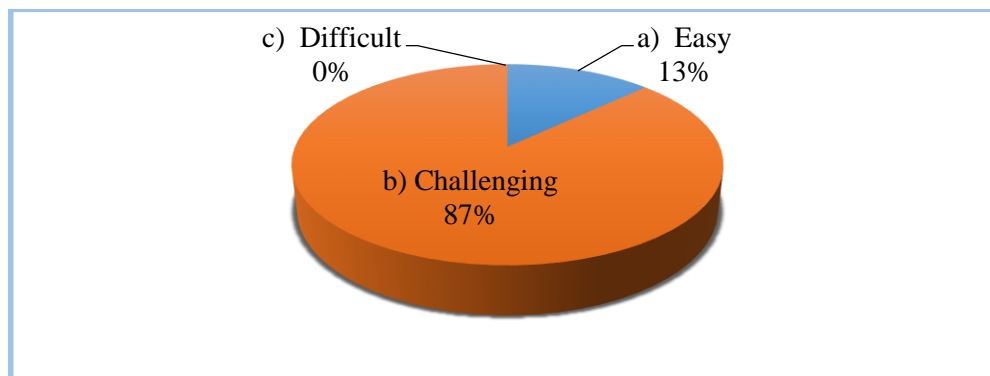


Figure 3. 9 Teachers' attitudes towards Teaching Research Methodology

In the chart above (87%) of teachers find teaching RM as a challenging process, only (13%) that represent one teacher find it easy; whereas none of them indicates that it is difficult.

Section Two: The Integration of ICTs into Research Methodology Courses

Item 3. Do you use ICTs in your Research methodology courses?

Justify your answer

The aim of this item was to know if the RM teachers integrate ICTs in into their courses and for what purpose.

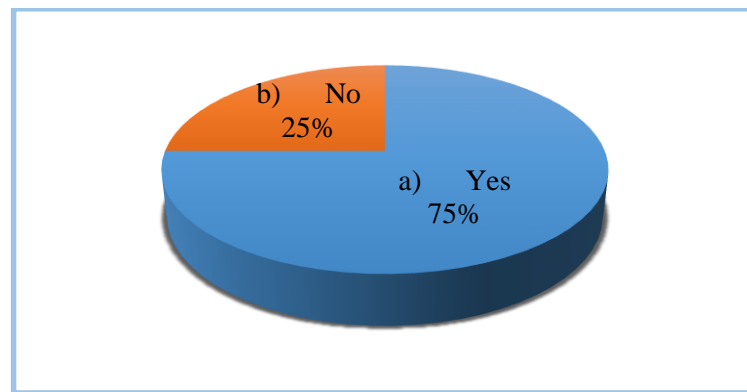


Figure 3. 10 Teachers' usage of ICTs in Teaching Research Methodology

As figure 3.14 shows, the majority of the teachers that represent (75%) do use ICTs during their lectures. However, (25%) do not use it during the course. The following are teachers justifications:

a) For 'Yes'

Teacher A: I use Powerpoints, and videos. I have also a blog through which I provide the students with lectures as well as further reading.

Teacher C: It has become a necessary part of research due to the over reliance on internet and statistical programs.

Teacher D: Teachers have so far had some experience in putting their courses on Moodle, and many of them have used for a while computers and other means to teach the course of methodology.

Teacher F: I attempt to make use of online learning platforms and social media (e.g. Moodle and Youtube). These platforms facilitate the delivery and explanation of the lessons facilitate teaching & gain a lot of time.

Teacher H: Not too much second year is only an introduction to research methodology.

For 'No'

Teacher B: Because of large classes, lack of equipment and the shortage of time with the long program.

Teacher E: The teaching context is inappropriate to use ICTs.

Teachers have different perspectives in integrating ICTs into RM courses. On the one hand, some of them claims that the nature of the course does not need ICTs so they do not use it. On the other hand, most of them use it in the classroom and outside the classroom for the same purpose, which is to present the lectures only. Hence, we can notice that none of the teachers uses the ICTs to open the door for the students to practice during the lecture.

Item 4. Which of the following do you consider as barriers to the successful integration of ICTs in the classroom?

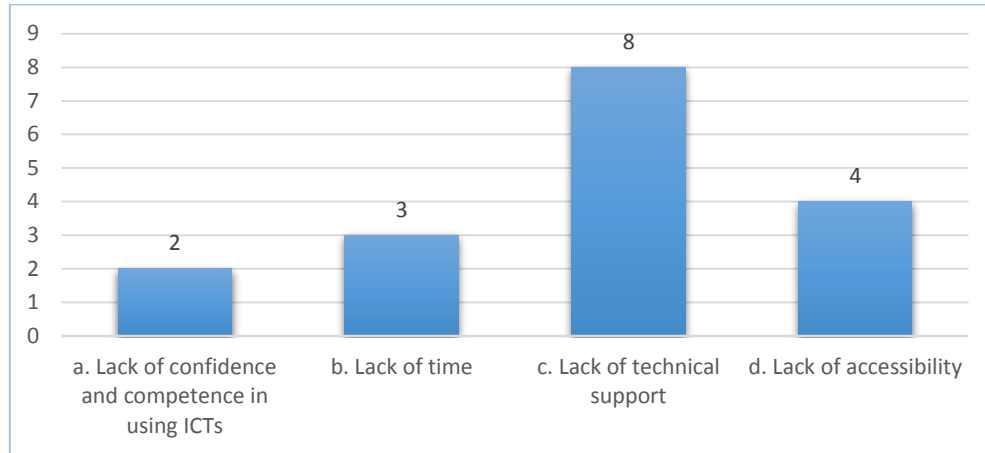


Figure 3. 11 Barriers in integrating ICTs into the Classroom

All the teachers (n=8) argue that the lack of technical support is the main barrier to the successful integration of ICTs into the courses. Moreover, 2 to 4 teachers find that lack of accessibility, time and confidence are the main reasons. Teachers added the following comments concerning this question:

- Absence of equipment in classes/ large groups/ methodology is scheduled as course.
- Again, the atmosphere is not appropriate.
- Lack of ICTs.

Item 5. To what extent do you agree with the following statements?

The present item aims to question the teachers' attitudes toward the integration of ICTs into the RM courses.

'The integration of ICTs into Research Methodology courses has become a necessity in the 21st century'.

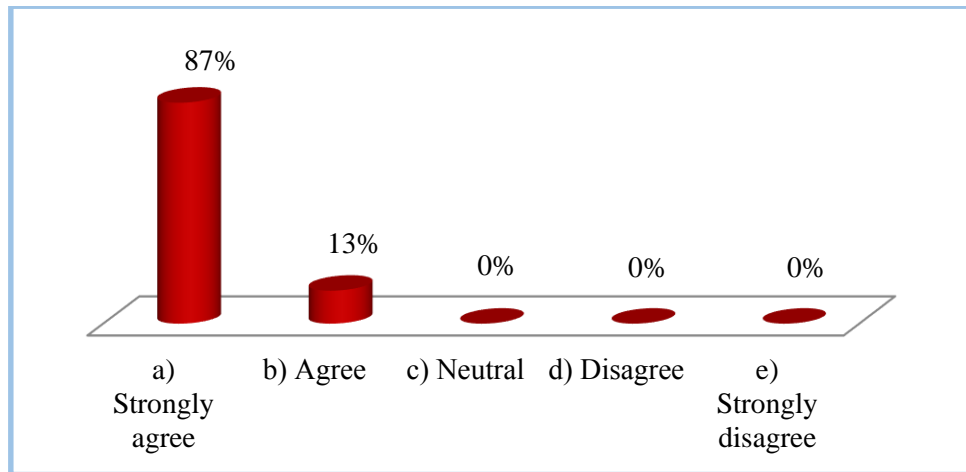


Figure 3. 12 Teachers' attitudes towards the integration of ICTs into the Research methodology Course

As shown in Figure 3.16 the majority of the teachers (87%) strongly agree that nowadays it is important to teach the students with technologies for a better understanding of the course; whereas none of them disagrees.

Item 6. To what extent do you agree with the following statement?

This item is related to the previous one. After having explored that the teachers support the integration of ICTs into the RM courses. We aimed to explore if they intend to use it as a tool to present the course or to make the students practice during the course. Moreover, if the practice can affect students' research skills positively.

'If some of the Research methodology courses take place in the computer lab to enable the students to see how to search, analyze and present the data, the students' research skills will be improved'.

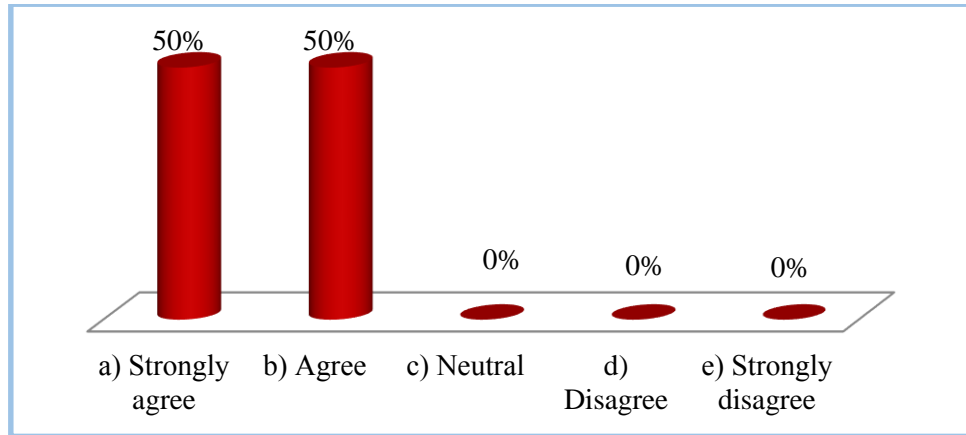


Figure 3. 13 Teachers' attitudes towards teaching Research Methodology in The Computers Lab

As shown in figure 3.17. half of the teachers (4) do agree with the statement and the other half do strongly agree with it; whereas none of them disagree with the inserted statement. Hence, the RM teachers agree that if some lectures took place in the lab to make the students practice during the lectures is beneficial and can improve the students' research skills.

Section Three: The Role of the Supervisor

Item 7. As a supervisor, are you satisfied with your candidates' research practices along the research process?

Generally speaking, each teacher have his own experience with their candidates, some of them are satisfied and others are not fully satisfied with the students' research practices. Here are the teachers' responses:

- Teacher A : Yes
- Teacher B : No I am not satisfied at all
- Teacher C: Well I believe they are doing their best in the light of the lack of practice.

- Teacher D: In fact, I am not fully satisfied.
- Teacher E: Overall, I am satisfied.
- Teacher F: Overall, I'm only partially satisfied. Students' mastery of computer-assisted research depends largely on their experience with computers and navigation of the internet.
- Teacher G : Most of the time I'm satisfied.
- Teacher H: To some extent some students do benefits from methodology courses that they studied and need only assistance from the supervisor. Others however; ignore even fundamental steps of the scientific research.

Item 8. In general, at which stage of the research process did your students face difficulties?

Five teachers declared that the students face difficulties in the data analysis phase. However, two of them claim that they face difficulties in every stage of the research process. Moreover, one of the teachers said in formulating the research problem, literature review and following the right form (APA style).

Item 9. As a supervisor, do you suggest for your students to use specific software applications that may help them in their research journey?

The aim of this item is to explore whether the teachers guide their students to use different software applications during their research journey or not.

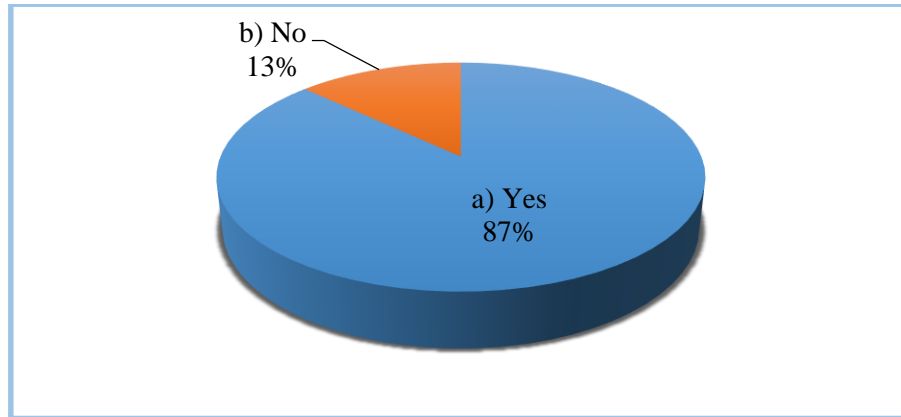


Figure 3. 14 Supervisors' Encouragement for the use of software Application in the Research Research Process

If yes, could you give us some examples

- Teacher A: Mainly the SPSS, the excel, atlas.ti or Nvivo...
- Teacher B: Grammarly , SPSS statistics
- Teacher C: Grammarly, zotero, Google scholar, SPSS
- Teacher D: The SPSS
- Teacher E:I do not know
- Teacher F: MS word (or equivalent for text processing), Mendeley (for reference management), SPSS (or at least Excel for statistical analysis), nvivo (for qualitative data analysis)
- Teacher G: Endnote programme
- Teacher H: Plagiarism checker, spss, google word excel.

From the above we can infer that the teachers guide their students to use multiple software applications and support them to use them.

Item 10. As a supervisor, what kind of support do you usually give to the learners who face difficulties on the level of computing literacy?

This question aims to explore whether the supervisors help students who face difficulties in computer literacy and how they manage to help them.

- Teacher A: I previously coordinated with the ICT's teacher and suggested what to include in his syllabus to help students with their research./ I also organized 4 study days on different methodological matters.
- Teacher B:It is difficult to do so, I just try my best but they need more practice and they must help themselves
- Teacher C: I usually orient them to check you tube tutorial videos.
- Teacher D: I usually ask them to use their pcs and the applications, which they master. If not, they have to ask other people for help (especially those who are skilled in computing).
- Teacher E: They should develop their computing skills.
- Teacher F: I usually refer students to resources (mostly online tutorials) where they can learn the programs better. If the situation calls for it, I provide personal assistance, either through emails or through screen sharing via Google Meet or Zoom
- Teacher G: It depends on the difficulty they face.... (youtube can help)
- Teacher H: I try to facilitate the thesis as much as i can, through my experience i did not face candidates who really have serious problems in computing

The teachers provide students who face difficulties in computer literacy by sending them videos and tutorials to check them. Moreover, one of the teachers claims that she suggests for the ICT teacher should be included in the syllabus since he knows what the students need. However, they can not do more because this is a personal skill that can be improved only if the students work on themselves.

Section Three: Second-Year Master Students' Target Needs In Using Software Applications during the Research Process

Item 11. What do you think are the reasons behind the students' digital skills gap?

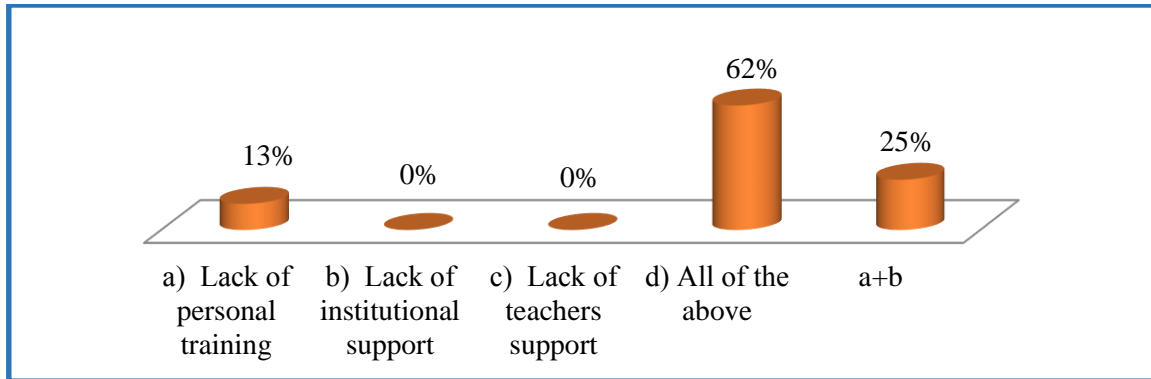


Figure 3. 15 The Reasons behind Digital Skills Gap of the Students according the Teachers

As indicated in Figure 3.19, the majority of teachers (62%) stated that the lack of personal training, institutional and teachers support are the main reasons behind the students digital skills gap. Moreover, the teachers add the following reasons:

- Absence of workshops. ICT's teacher are most the time from other disciplines, so they teach anything rather than what is required to help students develop the needed skills.

Item 12. To what extent do you think the following software applications are important to be used by the students in order to undertake their research?

Since our aim is to explore the needs of the students in using software applications, we provide the students with different programs to highlight for us what are the applications that the students mostly need in research process.

Table 3. 7

The Important Software Applications that should be by the Students in The Research Journey according to the Teachers

Statements	Not at all important	It may help	Important	Very Important
Search engines (Google...)	0%	0%	75%	25%
Word processor (MS Word..)	0%	13%	50%	37%
Spreadsheets (Excel...)	0%	13%	37%	50%
Communication applications (Email...)	0%	25%	50%	25%
Qualitative data analysis software (NVIVO...)	0%	0%	37%	63%
Quantitative data analysis software (SPSS...)	0%	0%	25%	75%
Online data collection software programs (Google form, Zoom...)	0%	13%	37%	50%
Reference management software (Mendeley...)	0%	25%	13%	62%
Writing support software (Plagiarism checker, grammar checker).	0%	0%	50%	50%
Project management software (time management, Notes..)	0%	37%	37%	26%

From this question, we opened the door for teachers to provide us with the important software that should be used by the students in their research. Hence, The software

applications needed in research have been identified by the teachers and categorized according to its importance as follow:

- a) **Very important:** Quantitative software application , Qualitative software applications , Spreadsheets , Online data collection software , Reference management software
- b) **Important:** Search engines, communication software, Word processor
- c) **Important+ It may help:** Writing support software, Project management Tools

The data analysis software was the most important selected program by the teachers. This indicates that those programs are very important for the students to master. Moreover, they facilitate the data analysis stage since it has been chosen to be the most difficult stage for the students (item 8).

Item 13. Are there any software applications that are helpful for the students during their research but most of them do not know about their existence?

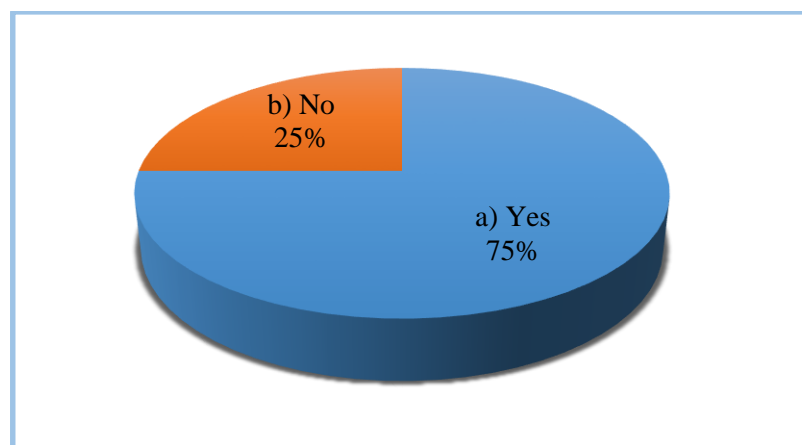


Figure 3. 16 Students' knowledge gap of software Applications According to the Teachers

As indicated in the above pie chart, most of the teachers (75%) notice that there is a lack of knowledge of the exciting software among students. Hence, we asked the teachers what

are those software. The teachers illustrate the following software : Plagiarism checker, grammar checker, SPSS, Nivivo and Reference management systems (Zotero or Mendeley).

The teachers agreed that the software applications mentioned above are the most sufficient programs which are unknowledgeable by the students. On the other hand, one of the teachers add about students' familiarity with the software saying: "They have a problem with typing their dissertations. How about these software packages". This indicates that the students are suffering from a lack of knowledge and face problems on the basic things like writing in Ms Word properly.

Item 14. Is there any common problem among the students during their research practices that can be solved by a software application? (Provide us with an example)

The aim of this question was to gather an expert opinion about what the students really need in terms of software that can solve students' problems. The teachers illustrate some problems that can be avoided by the use of software mainly:

- Their writing skills can be improved by "Grammarly"
- The problems in the reference lists can be avoided by "Reference Management tools".
- Plagiarism can be voided by plagiarism checker tools

However, most of the teachers focus on the programs that help in the data analysis phase, here are some teachers' responses:

- Teacher F: "Conducting advanced statistical tests and effective data visualization. This can be solved with a little exposure to Excel or SPSS".
- Teacher E: "Data analysis techniques using software applications".
- Teacher G: "How to transfer the questionnaires into data in a table + their analyses"

- Teacher H: “Data analysis can be facilitated by SPSS and excel.
- Teacher C: “Data collection and analysis”

The teachers confirm that most of the students face difficulties on the level of data analysis. Moreover, the students should have formal training in order to use that software applications affectively. Thus, Teacher B states that “they just need more chance for training in advance not during the research processing”. This is a very important point mentioned by the teacher; the students need to know and to train before conducting his research not during the research so he is going to end up wasting time.

Item 15. What do you think students need to do in order to use the software applications effectively in the research process?

The following statements are the teachers’ suggestions:

- They should try to train in most of the helpful software before starting research.
- They can ask the administration to schedule workshops.
- They should practice and develop their own web skills
- They are required to have enough knowledge about modern research practices.
- Training and relying on skilled people (teachers, colleagues...).
- They should be knowledgeable about them in order to practice using them.

Teachers shed light again on two important thing about students' needs. First, students need to be knowledgeable about the different software applications that should be used in research. Second, they need to practice using that software before conducting research, not during the research journey.

Item 16. In your opinion, what can the institution do to cover students’ needs?

The teachers have different perspectives when it comes to this question; each teacher suggested different solutions that can help the students. Here are the teachers’ responses:

- Teacher A: Scheduling workshops.
- Teacher C: Train the teachers and provide the necessary ICT equipment.
- Teacher E: Develop relevant computing courses.
- Teacher F: Provide mass access to UP TO DATE computers/ computer rooms (larger than what's currently available). Provide teachers with technical support and resources to successfully deliver effective Methodology courses
- Teacher G: Organize study days & oblige training
- Teacher H: Provide the appliances and make them available for the students to use. Organize sessions of workshop where information about the different ICT's applications can be presented.

The teachers mainly focus on the proper environment when the ICT courses should take place. In addition to the modern devices and equipment that help both the students and the teacher. Moreover, they highlight the importance of the relevant ICT lectures and conducting workshops for the students. On the other hand, Teacher D suggested to

1. Provide hours of training.
2. Put more emphasis on practice than theory (in the course of Methodology).
3. Review the content of the syllabi from the 2nd year licence to Master 2 (first 6 months)".

It is clear that teacher D supports the idea of the integration of ICT into the research methodology course besides his dissatisfaction with the research methodology syllabus and the way being taught.

However, Teacher B declares that the students are the main source of motivation for themselves and the ones who can change this issue. The institution can do nothing to help them, teacher response:

“It can do nothing, the candidates who decide urgently their skills development”.

Item 17. To what extent do you agree with the following statements?

“The ICT teacher should be aware of the right methodology followed by the English language students during their research in order to give them correct feedback (ex: following the APA/MLA style).”

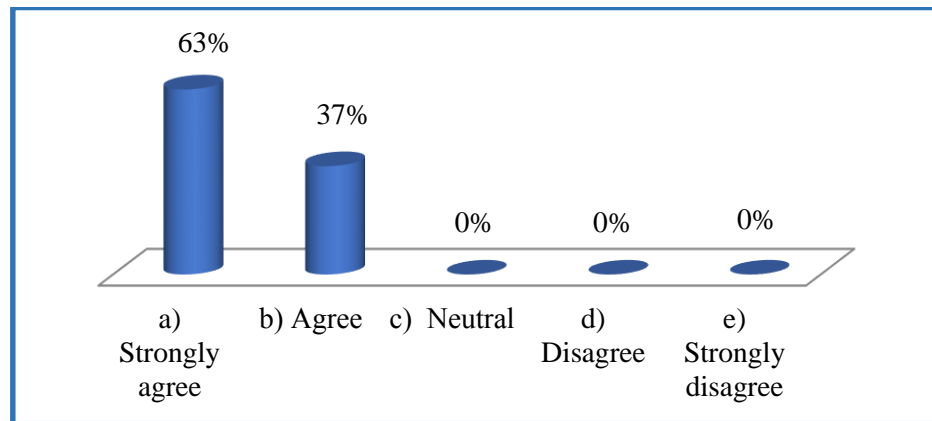


Figure 3. 21 teachers’ level of agreement on hiring trained ICT teachers for the English language.

As it is illustrated in Figure 3.21 above the majority of the teachers (63%) strongly agree with the statement and (37%) percent of the teachers choose the option “agree” to describe their opinion. However, none of them disagree about it.

Teachers’ justification:

As for the before mentioned statement, teachers’ responses were entirely affirmative. Namely, teachers A, B, C, and G strongly agreed along with accentuating different aspects to be considered. Teacher A highlighted the importance of needs analysis before designing a certain syllabus. That is, in order to avoid any inconveniences and identify potential gaps in students’ knowledge, the implementation needs analysis is necessary and inevitable. The careful consideration of students’ needs would contribute to the accurate representation of the right research style followed. Moreover, teacher G underscored the aspect of reliability stating that the misconduct of the suitable methodology can negatively affect it. Accordingly,

and as teacher C claimed, teachers' lack of awareness about the methodology that needs to be adopted by students will make the whole process time and effort consuming. Students will realize that they were not learning elements relevant to their research works. Thus, misinformation leads students to commit errors which in turn decreases the reliability of their research. As for teacher D, E, and H who agreed to the statement, they mainly regarded the ICT teacher as a guide. Teacher D mentioned the need for a cooperation between the RM teacher and the ICT teacher. He affirmed that the content of the syllabus that needs to be followed is the responsibility of the RM methodology teacher. Therefore, and as teacher H also affirmed, the ICT instructor is responsible for raising students' awareness guiding them through the research process by means of ICT. Accordingly, almost all the respondents were highly aware of the harmonization between the content presented and the ICT teacher's perception of the right research methodology followed by EFL students.

Item 18. To what extent do you agree with the following statements?

“The ICT teacher should do a need analysis before designing the course in order to know students' target needs.”

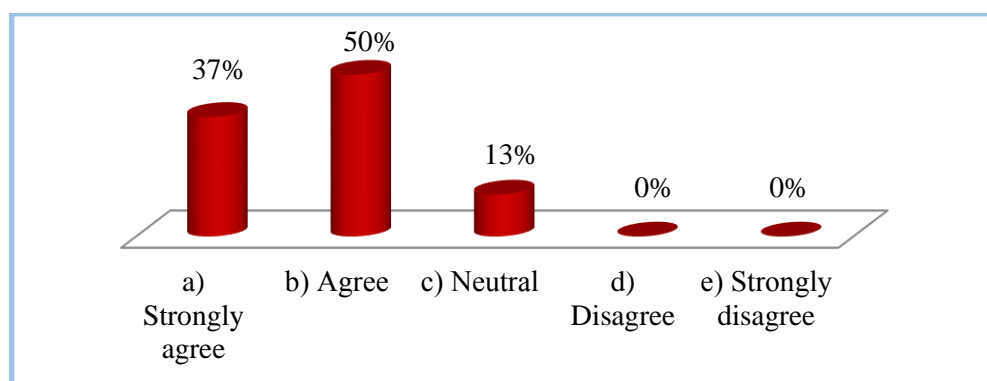


Figure 3. 172 teachers' level of agreement about the importance of conducting needs analysis by the ICT teachers

As it is illustrated on Figure 3.22 above half of the teachers, (50%) do agree with the statement above, (37%) strongly agree and 13% are neutral. However, none of the teachers disagree with the statement inserted.

Teachers' justifications:

a) For 'Strongly agree'

Teacher A: It is essential for any kind of teaching and specifically for ICT's teacher who are not aware of the prerequisites of students of English; their background knowledge and what can be facilitative for them to conduct research.

Teacher B: You gave the solution

Teacher C: So that the work on improving students needed skills

Teacher E: Teachers' knowledge is fundamental to successful supervision

b) For 'Agree'

Teacher D: In fact, it is the teacher of R. Methodology who is supposed to conduct a needs analysis, because this step is very important.

Teacher E: Needs analysis is a crucial stage before designing any course.

Teacher G: We have to check everything because this is teaching

Teacher H: This will help a lot. I think the problem is that the ICT teacher already has a syllabus that he should present. So, I think some sessions should be devoted to respond to learners' needs even if that was not mentioned in the syllabus

c) For 'Neutral'

Teacher F: Needs analysis is important. However, sometimes, and due to limited exposure to technology, students don't actually know what they need to conduct successful research. This might lead to focus on unnecessary tools. Therefore, the syllabus designer should cover

all of the basics in IT tools for research (or in our case, Computer-Assisted Language Research).

From the above item 18, item 19 we can conclude that the teachers agree that the ICT courses should be in harmony with the research methodology course. Moreover, they agree that the teachers should be trained, know the English methodology and conduct a need analysis before starting the course in order to serve students' needs.

Teachers' comments:

“What should be done in our institutions is first to limit the number of students/ Teaching methodology to a huge amount of students leads to inefficiency/ Supply equipped rooms/Train the teachers in the use of different technological tools/ Access and use of internet in teaching (rooms) Provide high-speed internet”.

3.4 Discussion and Summary of the Findings

The current study aimed to explore second-year master two students' target needs in using software applications during the target situation, which is the research journey. It mainly covers students' lacks, wants and necessities for a better implication of the different types of software used in research. To research the reach the aims of this exploratory, we obtained data through three types of tools that were interconnected where each one was somehow built from the results of the previous one in order to deeply cover the different aspects of the problem addressed. The students' questionnaire was the first data tool used in this study; it provided significant data regarding students' computer literacy, the factors affecting their use of software applications in addition to their attitudes towards the ICT courses. The students' focus group, the second data gathering tool, revealed more impressions and opinions about the issue and highlighted new sources of the problem discussed. Teachers' questionnaire was the last tool used to supplement the previous results.

It focused on students' needs since research methodology teachers are the ones who know exactly what the students need in order to perform better in the research process. The variety of data collection tools was a great benefit for this study that enable us to gather different perspectives about the research problem. There were three principal research questions addressed in this study in order to reach the general aim. The answers of the questions summarize the main points of this study results. Hence, the questions will be discussed in the subsequent section.

Research question 01: What are the factors affecting students use of the software applications during the research process?

Initially, the students' questionnaire revealed that they face difficulties on the level of computer literacy. Students at first did overestimate their computer literacy level in different software applications. However, after having asked them about some computer skills to see their level on various applications used in research, it was revealed that they do not know how to perform basic skills. Additionally, half of the students cannot use the different types of software by themselves and they need help with some applications due to their complexity, especially data analysis software.

Moreover, the results show that the main factor affecting the use of software applications by the students is the lack of knowledge of the existing software that can facilitate some research process steps. Students claim that the research methodology teachers are the ones who should provide them with the needed knowledge about the different software used in the research. In fact, they should at least open the door for practice during the session instead of studying some steps theoretically. Hence, we tried to investigate that problem and we asked the teachers if they integrate ICTs in their courses, the results were positive most of them did. However, all of the teachers used them to present the lectures

only not in order to make their students practice. The teachers agreed with the students that the integration of ICTs in the lectures enables them to practice and may improve their research skills. However, they cannot use them because of the overcrowded classrooms, lack of technical support, accessibility in addition to the fact that the research methodology is scheduled as a course.

In the same vein, students are not satisfied with the way research methodology is taught because the lessons are repetitive and they did not focus on the practical part of the research. Hence, they neither know how to analyze the gathered data nor use the software that can help them during the analysis. Moreover, they do not receive support from their supervisors about what they should use and how to use the different software applications. The teachers, on the other hand, confirmed that most of the students face difficulties in the analysis phase and suggest for their candidates to use some software that can facilitate the research process steps and provide them with the needed support. Moreover, supervisors declared that they are not responsible for increasing students' computer literacy, they have to rely on themselves in addition to the ICT's teacher's assistance. In fact, in the focus group, students blame themselves also and stated that they were not motivated nor aware of the importance of using the different software applications in their research. Consequently, they did not try to improve their computer literacy. On the other hand, the institution neglects the main academic source of computer skills, which is the ICT course that we consider as one of the main factors that cause the computer literacy gap among students.

Research Question 02: What are the students' perceptions and expectations toward the ICT courses?

The results revealed that 99% of them are not satisfied at all with the ICT courses they had at university as they neither have enough sessions in ICTs, nor have an appropriate

place to study in. The lectures were purely theoretical most of the time and they did not practice due to the lack of devices and the huge number of students. Moreover, the teacher of ICTs does not know students' needs, therefore, the right methodology that is to be adopted is inappropriate. Thus, they provide them with wrong feedback concerning research methodology that can affect their research paper negatively.

Students provided significant data regarding their wants and expectations. They assume that the ICT module is very important and they should study it at least for three years. Moreover, the content should be interesting and related to their needs presented by a qualified teacher who knows their needs. Students listed some software applications that are necessary to be included in the syllabus like statistical software, reference management software and qualitative data analysis software. They stated that they want to learn about any software that can help them in their research. As for the teachers' responses, they were affirmative and highlighted the importance of needs analysis before designing the ICT courses in order to meet students' needs, as well as it should be in harmony with the research methodology course.

Research Question 03: What can the institution do to cover students' needs on the level of computer literacy needed in research?

As revealed earlier, concerning the institution's support, we found out that the institution neglects both the ICT and research methodology courses. Both research methodology and statistics as well as the ICT course should be given more importance because they are the main sources of scientific computer knowledge and skills needed by the researchers. Teachers assume that the institution needs to schedule workshops, organize study days in order to train the students. Additionally, it should provide modern appliances and make them available for the students to use. On the other hand, students suggested to

the institution to hire trained teachers who are aware of the right methodology of English students and their main needs. Moreover, they pinpointed the importance of providing them with internet access, online library and university emails that make it easy for them to access different sources to do their research. Finally, an appropriate atmosphere where students can study and practice without problems is required, including computer labs, the needed materials and devices in addition to a logical number of students in the master level.

Conclusion

The present chapter presented and analyzed the results obtained from three tools mainly: the students' questionnaire, the students' focus group and the teachers' questionnaire with the purpose of detecting the main sources of students' problems on the level of computer literacy when conducting their research. This study's findings can be a kind of needs analysis that can help the institution to find solutions to the problem of the lack of computer literacy that affect negatively the research quality.

General Conclusion

General Conclusion and Recommendations

The present study was an attempt to raise EFL students' awareness about the importance of computing skills in research by exploring master students' target needs and wants in using the different software applications required in research. The study focused on the factors affecting the use of the different software applications. It also explored students' perceptions and expectations towards the ICT and methodology courses for the sake of provide solutions to this issue.

This dissertation is composed of three chapters. The first one shed light on the different research process steps provided by Kothari (2004) in addition to the relationship between research and computer. Besides, the second chapter is devoted to the different types of software that are available and special focus on put on the software applications needed in research. Moreover, the importance of being computer literate nowadays is stressed because of its importance in using the appropriate programs in the research process. The third chapter deals with the practical part of the study, devoted to the analysis and interpretation of the results. In order to gather data, three interconnected data collection tools were used: A semi-structured questionnaire with forty master two students, a focus group with five students from the same population in addition to another semi-structure questionnaire administered to eight research methodology teachers.

The results obtained from the three data gathering tools revealed that novice researchers face difficulties in research on the level of computer literacy. Students are lacking knowledge of the exciting software needed in research in addition to the lack of institutional support. Moreover, the students have negative attitudes toward both the ICTs and research methodology courses since they do not practice during the sessions and the lectures are repetitive. Moreover, the institution does not provide the students nor the teachers with the appropriate atmosphere for the successful integration of ICTs into the

courses. The lack of accessibilities, the needed devices and the overcrowded rooms affect negatively the quality of research. The most important result in this study was about ICT teachers. The students claim that they are untrained teachers and provide the students with incorrect feedback concerning the right methodology to be used by the English language students. Thus, misinformation leads students to commit errors, which in turn decreases the reliability of their research. The second important point revealed by all the data was that the main research step in which students face difficulties is the analysis phase and the software applications. They claim that they face difficulties in that phase because they did not study anything about the practical part of the research. Finally, teachers and students agreed that the institution do neglect both the ICT and research methodology courses as it does not provide them with the basics necessary for the success of research.

Recommendations and Pedagogical Implications

Based on the results of this research, some recommendations are deduce and can be future solutions to the issue under investigation. These recommendations concern teachers/supervisors, students/researchers and policy makers, with the aim of improving the researcher' computer skills and practices along the research journey:

Suggestions for learners

- Learners need to work hard to develop their computer literacy skills before undertaking research.
- They need to be responsible of acquiring modern computer skills because they play a vital role in research quality
- They often should practice using the different application software to improve their computer literacy.

- They should be knowledgeable about the function of each application in order to use it effectively.
- They should know how to deal with technical problems in order not to lose their work (thesis).
- They should always get access to the different software applications using Google account in order to avoid technical problems.
- They should take online or in person computer course in order to acquire the computer skills from professionals. This can be done through “Sci-Hub” to get free access to multiple academic sources.

Suggestions for Teachers/Supervisors.

- The integration of flipped learning in teaching research methodology.
- The integration of ICTs in research methodology courses.
- The exposure of the students to the different software applications by both research methodology teachers and supervisors that may help them in their research. This can be realized by the organizations of workshops.
- Continuous homework have to be given to students to make them practice using software applications.

Suggestions for Administrators/Policy Makers

- Providing the students with online libraries or university emails that enable them to access to the different academic sites will be a great benefits for the students.
- Organizing workshops from time to time to improve students computing skills.
- Reducing the number of master two students or to providing the university with more teachers and places to study.

- Providing the students with appropriate computer labs with the needed devices and internet access.
- Hiring qualified ICT teachers for English language students who should be aware of the English language methodology.
- Reconsidering the content of both ICT and research methodology courses.
- Giving importance more to statistics and ICT courses management because they are so important for the students in conducting research.
- Rewarding the candidates and supervisors who did a good job to motivate other students and supervisors to do better.

Limitations of the Study and Suggestions for Further Research

Like any study, the current one has limitations. The most important one is that this research intended to be quasi-experimental based on workshops and tests show the effect of a chosen software application on EFL master students' computer literacy; however, it was cancelled because of the COVID 19 circumstances. Similarly, the teachers' questionnaire was planned to be an interview, but due to the lack of time, it could not be done. Moreover, the lack of sources was another problem, especially the software applications and its use in research as most of the books were newly released and could not be reached. Finally, another limitation was that time constraints as I could not manage it because we changed the second variable to narrow down its scope. Hence, I started the second chapter from the beginning.

This study was general and did not focus on one software, thus we suggest to conduct research investigating the impact of one of the software on research quality.

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Appendices

Appendix 1: Students' Questionnaire

A Questionnaire for EFL Second-Year Master Students of Mohamed Kheider

University of Biskra

Dear student,

You are kindly invited to respond to the following questionnaire, which is a tool to collect data for the accomplishment of a master dissertation on "Students' Target Needs in Using the Software Applications during the Research Process". For each question, please mark your response with a tick or provide full statements where necessary. Be sure that your answers will be anonymous and will be used for research purpose only.

Prepared by:

Ikram HOUFANI

Supervised by:

Pr. Saliha CHELLI

Section One: General Information.

Q01: Have you conducted research before the master's graduation dissertation?

Yes No

Q02: Since you are dealing with your research, how did you find it?

An easy task A hard task

If it is a hard task, is that because: (you can select more than one option)

a) It is time consuming

b) It is effort consuming

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c) It requires the mastery of a considerable number of skills

If others, please specify:

Q03: In which research process phase did you use computer? (you can select more than one option).

Conceptual phase (literature review, formulating the problem)

Design and planning phase (deciding population sample, design the questionnaire...)

Empirical phase (Data collection)

Analytical phase (Data analysis)

Dissemination phase (Writing and present your work)

All of them

Q04: How would you rate your own computer literacy?

Below average

Average

Good

Excellent

Q05: How have you learned computer skills? (you can select more than one option).

A. in Formal class

B. Personal trial and errors

C. At University.

D. vocational training

If Others, Please specify:

.....

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Section Two: Software Applications.

Q06: Here are a number of software applications that you may or you may not apply in your research. For each type mark how much you are familiar with the software and if you are using it or not, following the likert scale below:

1. Not familiar at all.
2. slightly familiar (you know it but you do not know how to use it).
3. Moderately familiar and I am using it.
4. Moderately familiar so I did not use it.
5. Extremely familiar and I am using it.
6. Extremely familiar but I did not use it.

Software Applications	1	2	3	4	5	6
Search engine (Google..)						
Word process (Ms Word)						
Spreadsheet (ex: Excel)						
Presentation software						
Statistical software (ex: SPSS)						
Qualitative Software Analysis (ex: NVIVO..)						
Communication Applications.						
Online Survey Software (Google form, survey monkey..)						
Web conferencing Software (ex; Zoom)						
Audio Record software						
Graphics software						
Reference management software.(Mendeley...)						

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Writing support software (Grammar checker, Plagiarism detection)						
Project management Tools Software.(To do list)						

Section Four: Digital Competence.

Q07: Are you eligible to do the following tasks?

	No	Somewhat	Yes
I can solve most of the more frequent problems that arise when using digital technologies (ex: recover an unsaved word documents after restarting computer).			
I can send and receive emails without problems.			
I know how to protect myself against spam and junk mail			
I can judge the reliability of information found on the internet			
I am able to understand how I can use gathered information from the Internet without violating copyright law			
I am able to demonstrate an understanding of what constitutes plagiarism			
I know some of the webs cites that provide me with a free access to useful resources			
If I need new software, I install it by myself.			
I can use the auto fill for text, numbers and formatting in the Ms Excel.			
I know how to work with SPSS output and transfer tables/graphs to Microsoft Word.			
I can create/edit a questionnaire online.			

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I am able to participate in an online meeting and record it.			
I am able to create, save and/or edit videos, sounds, and images.			

Section five: Student's needs, wants, lacks in using the software applications during the research process.

Q08: Can you use all types of software applications by yourself or do you need others help?

A. Yes, I can.

B. No, I need help

If No, specify which type of software.

.....

.....

.....

Q09: In general, what are the factors affecting the use of software applications during your research process? (you can select more than one option).

Lack of the needed devices

Lack of computing skills

Lack of Time

Lack of knowledge of the existing software tools

The nature of some software applications (Complicated, cost..)

All of them

None of them

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Justify your answer:

.....
.....
.....

Q10: Did the ICT courses you had at university meet your needs and expectations?

Yes No

Please justify your answer

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.....

Q11: what were the things (lessons, tools and training) that you expected from the ICT classes but did not find them?

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.....
.....

Q12: In your opinion, what can your teachers/institution do to solve the problems that you face during your research on the level of computer literacy?.

.....
.....
.....

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Q13: Feel free to add any suggestions or comments concerning students' needs, wants and lacks in using the software applications during the research process?

.....

.....

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Appendix 2: Students' Focus Group

Second Year Master Two Students' Focus Group about their Target needs in Using the Software Applications During the Research Process

Dear students,

Thank you for your willingness to participate in our focus group. Since you are dealing with your research, we would like to hear your ideas and opinions about “master two students' target needs in using software applications during the research process” based on your experience. You will be in a group with 5 other students of the same year. You will be tape-recorded and your responses to the questions will be kept anonymous and will be used for research purposes only.

Prepared by:

Ikram HOUFANI

Supervised by:

Pr. Saliha CHELLI

Q01: Since you are dealing with your research, At which stage of the research process did you find difficulties?

.....
.....

Why?

.....
.....

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.....

Q02: How did you find the Research Methodology courses that you had at university?

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.....

Q03: How would you describe an ideal ICT course?

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.....
.....

Q04: What are the different problems/challenges that faced you while using software applications during your research journey?

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.....
.....

Q05: What do you think are the reasons behind the lack of computing skills gap among students?

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.....
.....
.....

Q06: In your opinion, what can your institution do to cover your needs?

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.....

.....

Q07: Is there anything you want to add?

.....

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.....

.....

Thank you for your collaboration

Appendix 3: Teachers' Questionnaire

Teacher's Questionnaire on Second Year Master Two Students' Target Needs in Using Software Applications during the Research Process

Dear Teachers,

You are kindly invited to respond to the following questionnaire, which is a tool to collect data for the accomplishment of a master dissertation on "Students' Target Needs in Using the Software Applications during the Research Process". For each question, please mark your response with a tick or provide full statements where necessary. Be sure that your answers will be anonymous and used for research purpose only.

Prepared by:

Ikram HOUFANI

Supervised by:

Pr. Saliha CHELLI

Section one: General knowledge

Q01: How long did you teach research methodology?

- a) 1 to 5 years
- b) 5 to 10 years
- c) More than 10 years

Q02: How do you find teaching Research methodology?

- a) Easy
- b) Challenging
- c) Difficult

Section Two: The Integration of ICTs into Research Methodology Courses

Q03: Do you use ICTs in your Research methodology courses?

- No
- yes

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Justify your answer

.....

.....

.....

Q04: Which of the following do you consider barriers to the successful integration of ICTs in the classroom?

Lack of confidence and competence in using ICTs.

Lack of time

Lack of technical support

Lack of accessibility

Others.....

Q05: To what extent do you agree with the following statements?

The integration of ICTs into Research Methodology courses has become a necessity in the 21st century.

Strongly agree Agree Neutral Disagree Strongly disagree

If some of the Research methodology courses take place in the computer lab to enable the students to see how to search, analyze and present the data, the students' research skills will be improved.

Strongly agree Agree Neutral Disagree Strongly disagree

Section Three: The Role of the Supervisor

Q06: As a supervisor, are you satisfied with your candidates' research practices along the research process?

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Yes No

Justify your answer

.....
.....

Q07: In general, at which stage of the research process did your students face difficulties?

.....
.....

...

Q08: As a supervisor, do you suggest for your students to use specific software applications that may help them in their research journey?

Yes No

If yes, could you give us some examples

.....
.....

Q09: As a supervisor, what kind of support do you usually give to the learners who face difficulties on the level of computing literacy?

.....
.....

.....

Section Four: master two students' target needs in using software applications during the research process

Q10: What do you think are the reasons behind the students' digital skills gap?

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Lack of personal training

Lack of institutional support

Lack of teachers support

All of the above

Other.....

Q11: To what extent do you think the following software applications are important to be used by in order to undertake their research?

	Not at all important	It may help	important	Very important
Search engines (Google..)				
MS word				
Spreadsheets (Excel..)				
Communication applications (Email..)				
Qualitative data analysis software (NVIVO...)				
Quantitative data analysis software (SPSS...)				
Online data collection software programs (Google form, Zoom...)				
Writing support software (Plagiarism checker, grammar checker).				
Project management software (time management, Notes..)				

Q12: Are there any software applications that are helpful for the students during their research but most of them do not know about their existence?

Yes no

If yes, give us examples:

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.....

Q13: Is there any common problem among the students during their research practices that can be solved by a software application? (Provide us with an example)

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.....
.....

Q14: What do you think students should do in order to use the software applications effectively in the research process?

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.....
.....
.....

Q15: In your opinion, what can the institution do to cover students' needs?

.....
.....
.....

Q16: To what extent do you agree with the following statements?

The ICT teacher should be aware of the right methodology followed by the English students during their research in order to give them correct feedback (ex: following the APA/MLA style).

Strongly agree Agree Neutral Disagree Strongly disagree

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Could you please justify your answer?

.....
.....
...

The ICT teacher should do a need analysis before designing the course in order to know students' target needs.

Strongly agree Agree Neutral Disagree Strongly disagree

Could you please justify your answer?

.....
.....
...

Q17: Is there anything you want to add?

.....
.....
.....

Thank you for your collaboration.

ملخص الدراسة

في عالم رقمي متزايد، تلعب تكنولوجيا المعلومات والاتصالات (ICT) دورًا مهمًا في البحث. لذلك امتلاك مهارات الحاسوب يصبح أحد خصائص الباحث الجيد. ومع ذلك، يواجه العديد من الطلاب صعوبات على مستوى المعرفة الحاسوبية التي قد تؤثر سلبيًا على جودة أطروحاتهم البحثية. ركزت الدراسة الحالية على استكشاف ضروريات ورغبات ونقائص تلاميذ الماجستير في استخدام تطبيقات البرامج المختلفة أثناء رحلة البحث الخاصة بهم. أي السعي إلى استكشاف احتياجات الطلاب المستهدفة بالإضافة إلى العوامل التي تؤثر على استخدامهم لتطبيقات البرامج بطريقة فعالة في إجراء أبحاثهم. لهذا الغرض، تم اعتماد نهج الأساليب المختلطة لجمع بيانات مختلفة تتعلق بوجهات نظر الطلاب وأساتذة المنهجية. من أجل جمع البيانات اللازمة. تم استخدام ثلاث أدوات بما في ذلك: استبيان الطلاب الذي شمل (العدد=40) طالب ماجستير في جامعة محمد خضر بسكرة، مجموعة مركزة من خمسة طلاب (العدد = 5) طلاب من نفس الفئة. بالإضافة إلى ذلك، تم إجراء استبيان لثمانية أساتذة (ن = 8) يدرسون منهجية البحث العلمي نظرًا لخبرتهم ومعرفتهم بالمهارات المطلوبة لطلاب الماجستير والباحثين المبتدئين. أظهرت النتائج أن الطلاب يفتقرون إلى مهارات الحوسبة إلى جانب نقص المعرفة بالبرامج الموجودة التي تسمح لهم بالقيام بمختلف الأعمال بسهولة في البحث. يمكن أن تشجع الدراسة الحالية الباحثين المقبلين على إيجاد حل للمشاكل التي تواجه طالب الماجستير في سياق البحث بالإضافة إلى أنها دعوة للمؤسسة لإبلاء المزيد من الاهتمام للقضية الحالية.