

The Use of Information and Communication Technology in Academic Research: Is it possible to Realize Academic Integrity?

Hanane Rabahi

Department of Arabic Literature, Faculty of Letters and Foreign Languages
University of Maghnia, Tlemcen, Algeria.

Abstract

Realizing academic integrity in the digital age becomes a nightmare for universities and educational institutions in the entire globe. After the spread of Information and Communication Technology, dishonesty has replaced ethical considerations in research. The focal reasons behind this increasing dilemma are the researchers' attitudes and their different cultural perspectives. The spread of Information and Communication Technology provides avenues for academic dishonesty since detecting software products do not offer a real solution. As such, the incentive of this study is to scrutinize how Information and Communication Technology can help in attaining academic integrity. It also intends to see what is behind the backdrop of the academic misconduct, i.e., the motives that lead researchers to switch to e-dishonesty. The present survey seeks to bring the issue of Information and Communication Technology and academic integrity into the light to ensure honesty among the Algerian researchers. The researcher collected data through a questionnaire addressed to four Masterclasses in English studies at Mascara and Saida Universities supported by an interview with teachers. The findings revealed that most students used technology in cheating and plagiarism. The findings also revealed that universities and institutions can achieve integrity if the learners are aware of the positive side of Information and Communication Technology in academic research.

Keywords: Academic integrity, dishonesty in research, Information and Communication Technology, students' perception

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1. Introduction

In the last few decades, there was a tremendous increase in the use of technology not only for educational purposes but also in every aspect of human life. With the digital age, all people can have access to the network either for research or shopping and chatting. Technology brings benefits as a tool in hastening research through the availability of eBooks and research papers. However, students do not always use technology in the right path since it becomes a means of cheating during examinations and tests. Plagiarism has also taken the lion's share, even though universities and institutions have developed detecting materials and created penalties to achieve integrity. In the other side of the corner, the overuse of technologies has ravaged academic honesty and opened the gateway for different types of academic misconduct.

Several studies have demonstrated that there is increased use of Information and Communication Technologies (ICT) in academic fraud from secondary school, starting with cheating and then plagiarism (Bauer, 1995). Academic dishonesty increases due to the lack of scholarship. Besides, universities cannot depend on indigent literature that does not help researchers to realize integrity.

In this perspective, the current research under scrutiny pursues to shed light on how Information and Communication Technologies can be utilized to achieve academic integrity after their misuse. Therefore, this small scale study intends to put Information and Communication Technology (ICT) users in the right path, so that dishonesty in research in Algerian Universities will be no more a topic of discussion. More importantly, the present survey attempts to provide an inkle eye on the motives that encourage academic misconduct. In this vein, these research concerns give birth to the following peripheral research questions:

1. How teachers can raise students' awareness of the use of ICT to fulfill academic integrity?
2. How can ICT grow dishonesty in research?
3. Are there any strategies that diminish the students' academic misconduct?

The following research hypotheses spring from the research questions mentioned before:

1. Teachers and universities play crucial roles in raising students' awareness of the right use of ICT to promote integrity.
2. ICT paves the floor for researchers by providing all possibilities for all types of academic fraud like cheating during exams and plagiarism.
3. Teachers can reduce academic misconduct if they look after their students by checking their pieces of writing. Besides, all universities should provide strict penalties and laws by making ethics in research as an essential module to be taught.

Therefore, the present research work seeks to supply the field of academic research with possibilities and implications on how students can use ICT correctly to hearten honesty and integrity in research. Moreover, the researcher takes the sample from two universities hoping that it can open the gateway for more scholarship to enhance the quality of academic writing by putting integrity at the center of the researchers' concern.

2. Review of the Related Literature

a. *Technology and Education*

Studies reveal that ICT provides an active learning environment, while more recent research works show that the use of ICT becomes linked to the students' attitudes and their cultural backgrounds. According to Ching (2013), the easy access to materials through the net has developed positive attitudes towards cheating and plagiarism, although it becomes an important tool in education. In this regard, Ching (2013) maintains that "Internet use can unintentionally promote academic dishonesty. This result is quite disturbing since the use of the internet is already an inevitable part of the education today" (p. 84).

Significantly, technology smooths the laziness of the learners by supplying them with ready projects and pre-written essays; therefore, they make no efforts to improve their level and research. They depend on the net through copying down what they need without even selecting. Therefore, it opens the portal for cheating and various academic misconducts. In this regard, Renard (2000) observes that technology gives learners ways of dishonesty by promoting them with unethical techniques. Students think that they can take ideas from the net without identifying references, and they forget that academic institutions can use technology as a tool of punishment through detecting products.

Many scholars write on the benefits of technology on learning, but no study tries to deal with students' attitudes towards e-cheating and e-dishonesty in the academic community in general. For this reason, it remains an unfair judgment that needs reliability. As such, the question that imposes itself is: can we consider ICT as the only culprit of academic dishonesty? Most of the researchers agree that integrity becomes old-fashioned and the notion of ethics in research changes considerably with the emergence of Wikipedia, mashups and other sites. Accordingly, many scholars are afraid of the future of education, ethical considerations, and honesty in research with the catalyst spread of the net. In light of this idea, Woodmansee & Jaszi (1994, as cited in Spigelman, 2000, p. 160) write that:

A battle is shaping over the future of the Internet. On the one side are those who see its potential as a threat to traditional notions of individual proprietorship in information, and who perceive the vigorous extension of traditional copyright principles as the solution. On the other side are those who argue that the network environment may become a new cultural "common" which excessive or premature legal control may stifle. (p. 160)

One can add that institutions cannot preserve integrity in the digital age and they have to do too much to put learners on the right path since e-dishonesty starts to replace ethical considerations in research. In this regard, one cannot dig deeper without shedding light on the concept of integrity and academic dishonesty.

b. *Integrity and Academic Dishonesty*

The notion of integrity defers from one culture into another because it is a part of ethics and values. Indeed, the meaning of integrity is unified and is not only limited to research. It forms an important part of every aspect of human lives. For this reason, it is an essential ingredient, so that to build honest individuals who can lead their societies and guide them to the right gate. Being honest in

research means realizing integrity, which can be better understood through its opposite 'dishonesty' and academic fraud. According to Fang (2012), "Ethical lapses during one's education may carry over into a person's career and personal life", while ameliorating "academic integrity not only preserves the integrity of an assessment" or a class, a whole university, or the entire academic program, but also serves as part of an ongoing education that enables a person to grow as a learner, an employee, and a public citizen" (par, 1).

When talking about dishonesty in research, one has to explain the concept of academic misconduct. The latter involves different forms like cheating, fabrication, plagiarism, sabotage, bribery, and deception...etc. Cheating and plagiarism are the most known forms of misconduct in research and spread nowadays more than previous decades even though cheating is not a new subject in the field of education.

According to Ching (2013), the increasing nature of academic misconduct cannot be only limited to the misuse of technologies, but also other factors including "the perceived norms on cheating, on attitudes about cheating, and on knowledge of institutional policy regarding cheating behavior" (p. 84). Learners have previously developed positive attitudes towards different types of misconduct and ICT is only a means that increases the phenomenon of academic dishonesty. Stated various, many conducted types of research confirm that the net cannot be touted as the only means that increases misconduct especially plagiarism, but it provides "a space for those students plagiarizing to increase their plagiaristic activities" (p. 102). Warschauer (2004) pinpoints that researchers cannot take the net as the central factor of academic misconduct, but as a reason that encourages dishonesty. In this vein, Warschauer (2004, as cited in Sutherland-Smith, maintains 2008) that:

There is little doubt that the rapid diffusion and growth of the Internet facilitates students' plagiarism by making available millions of texts around the world for easy cutting and pasting, many of them commercially-provided and tailored to high school and college students' needs. Online plagiarism takes a variety of forms from the blatant and intentional (e.g., purchasing an essay online) to the accidental and ill-informed (e.g., quoting small amounts of online material without proper citation). (p. 103)

On the other stream, researchers claim that many people misunderstand the impact of the Internet because the first reason is the attitudes towards misconduct that some students share. In his part, Howard (2007) highlights that researchers should understand the net in terms of textual relationships, and not as a source for information, i.e., "The biggest threat posed by the Internet plagiarism is the widespread hysteria that it precipitates"; in fact, it is the role of teachers to subscribe "to plagiarism-detection services instead of connecting with their students through authentic pedagogy" (Howard, 2007, p. 12, as cited in Sutherland-Smith, 2008 p. 103).

Before proceeding further, it is helpful to talk about how ICT aids in increasing academic misconduct. According to Manly et al. (2015), technology has added to academic dishonesty "unauthorized representation, purchasing written papers, using unattributed secondary sources and cut and paste plagiarism" (as cited in Dernek & Parther, 2015, p. 15).

One should conclude that realizing integrity in the digital age becomes impossible because technology promotes all ways of dishonesty and cheating in research. Besides, engaging students in education about how to achieve integrity through the use of ICT becomes a necessity for teachers, universities, and educational institutions. Therefore, this research paper strives to raise students' awareness of the positive side of ICT.

3. Research Methodology and Design

a. Sampling and Population

The researcher selected the sample for the current study from the second- year Master level. She also chose four classes from Mascara and Saida Universities. The sample contains 120 students whom the researcher opted randomly. Details about the sampling are represented in table one as follows:

Table.1. *Sample presentation*

Universities	Field of Didactics	Field of Literature and Civilisation
Mascara	30	30
Saida	26	34
Total	56	64

b. Research Instruments

The researcher selected data quantitatively and qualitatively through a structured questionnaire. She retrieved the answers of the survey from the participants after one week from their distribution, which took place during the first semester. She also conducted an interview with fifteen teachers from both universities. All teachers have experience in teaching research methodology, and some of them have the opportunity to introduce ethics in research in their lectures.

C. Data Presentation and Analysis

i. Questionnaire

The questionnaire contains three essential sections. The first section involves personal information about the participants including age, gender, and the field of research. The second section was meant to test their ideas about the importance of technology in research. The researcher also asked them on whether they used it in cheating and plagiarism or not. The last section aims to raise their awareness about the possibility of using ICT to achieve academic integrity. The researcher also employed the Likert scale to test the learners' attitudes towards the option of using ICT to promote academic integrity to know their knowledge of ethical considerations. In this regard, the researcher picked out a set of questions from the questionnaire for presentation and discussion. These questions address the research problem of the present research work directly.

Question One: Is the use of ICT important in education?

- Yes
- No

Table.2. The importance of ICT in education

Answers	Students from Mascara	Students from Saida	Expressed in %
Yes	54	60	95%
No	06	00	5%
Total	60	60	100%

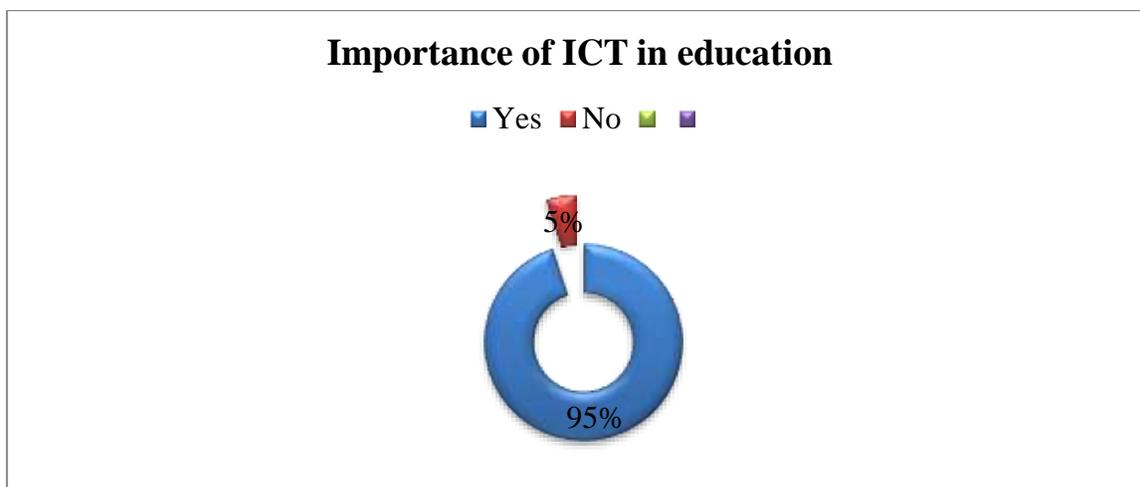
**Figure.1.** The importance of ICT in education

Table 2 and figure 1 demonstrate that all students recognize the importance of technology in education. They maintained that ICT becomes an integral part of learning and teaching because it gives easy access for eBooks, theses and exposes to do their assignments and write their dissertations. On the other hand, five percent of the informants highlighted that everything is available in the libraries and added that the overuse of ICT prevents their writing practices, and henceforth they will not be able to develop their writing competence.

Question Two: How do you take the information? Do you depend on ICT?

1. Through ICT, I copy down data as it is.
2. Through reading books, I learned how to reference, paraphrase, and summaries to avoid plagiarism.

Table.3. Ways for taking information

Answers	Students from Mascara	Students from Saida	Expressed %
Through ICT, I copy down information as it is	44	37	67.7%
Through reading books, I learnt how to reference, paraphrase and summarise in order to avoid plagiarism.	16	23	32.5%
Total	60	60	100%

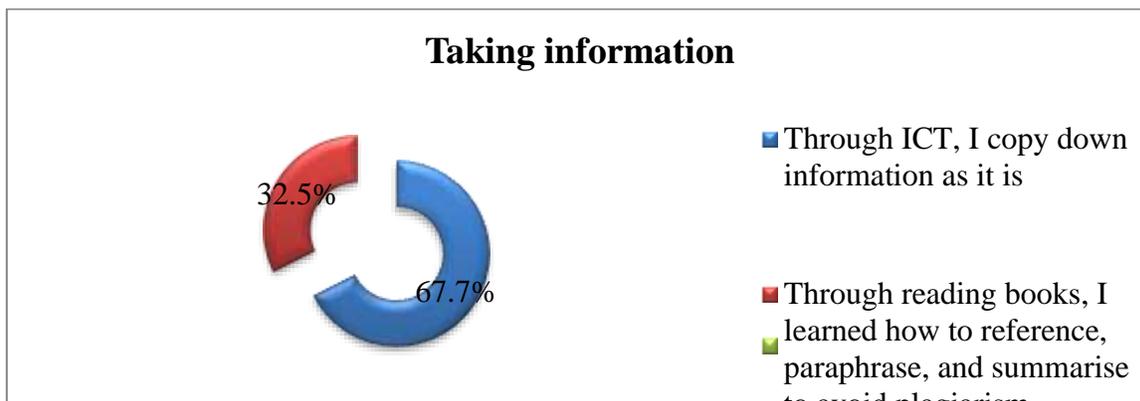


Figure.2. Ways for taking information

Figure and table two demonstrate that 67.7% of the students tend to copy down from the Internet information for their research proposals, exposes, and assignments for written expression, phonetics or linguistics as they found them in websites like Wikipedia. In contrast, 32.5% of the informants confirmed that they employ printed books and theses for information. They added that they tend to paraphrase and summarize techniques to attain integrity and honesty in conducting research.

Question Three: Do you consider copying information from the Internet without referencing a type of academic misconduct?

- Yes
- No

Table.4. Students' knowledge of academic misconduct

Answers	Students from Mascara	Students from Saida	Expressed in %
Yes	27	41	56.67%
No	33	19	43.33%
Total	60	60	100%

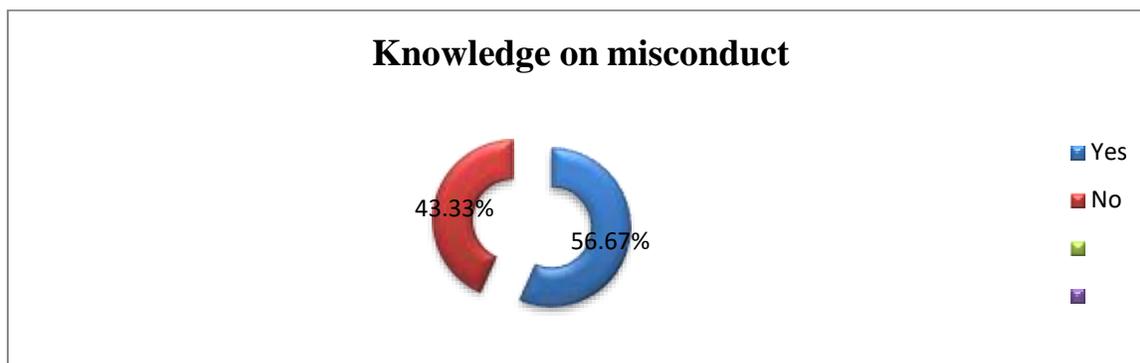


Figure.3. Students' knowledge of academic misconduct

About 56.67% of the respondents agreed on the point that copying down information from the net as they are is regarded as a part of academic misconduct, while about 43.33% of them highlighted that copying is not bad. They justified their answers claiming that their writing style is weak and have no idea about how to paraphrase and summarize. They further pinpointed that even though they are studying research methodology for years, they have no idea about the different types of academic misconduct. They also added that no importance on how to paraphrase and summarize.

Question Four: Did you conduct any unethical practices in your studies? If yes, is it:

- 1- Cheating
- 2- Plagiarism
- 3- Other forms of academic misconduct.

Table.5. Types of academic misconduct employed by students

Answers	Students from Mascara	Students from Saida	Expressed in %
Cheating	46	51	80.83%
Plagiarism	14	09	19.17%
Other forms of academic misconduct	/	/	/
Total	60	60	100%

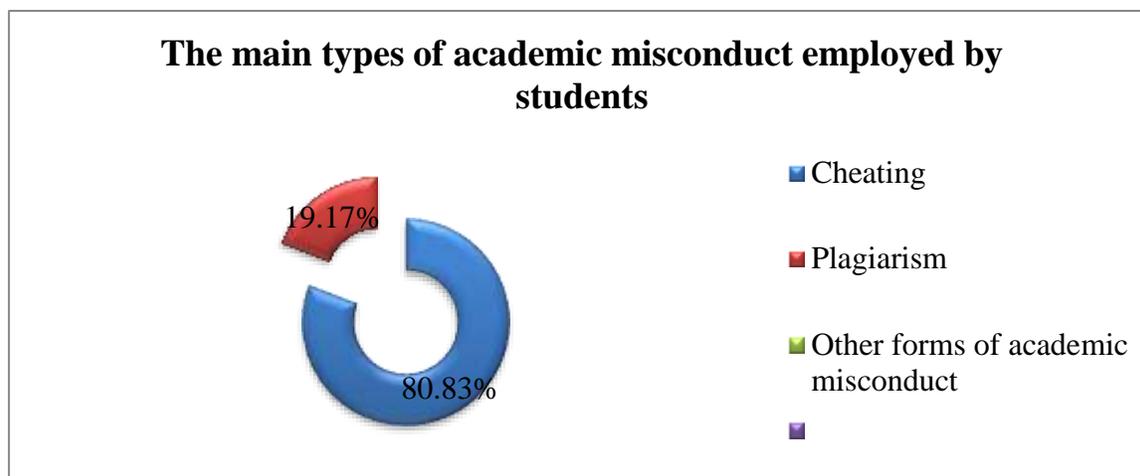


Figure.4. Types of academic misconduct employed by students

This question was susceptible, and the researcher faced difficulties to get answers; for this reason, they asked the participants to respond to the questionnaire anonymously. After convincing the informants about the importance of their solutions, they agreed to answer this question. The findings demonstrated that most of them made fraud. They added that they started to use e-cheating through phones and laptops because the university does not act regulations that punish them. In contrast, 19.17 % of the participants admitted that they commit plagiarism in their assignments, including exposes and research proposals because they have a weak knowledge of paraphrasing,

summarizing, and referencing. They justified their answers claiming that the syllabus of research methodology is too long and the teachers provide few activities with the lectures.

Question Five: ICT can be employed effectively to realize academic honesty and integrity.

- I strongly agree
- I agree
- I strongly disagree
- I disagree

Table.6. *Students' attitudes towards the use of ICT to implement academic integrity*

Answers	Students from Mascara	Students from Saida	Expressed in %
I strongly agree	25	07	26.67%
I agree	21	32	44.67%
I strongly disagree	10	11	17.5%
I disagree	04	10	11.67%
Total	60	60	100%

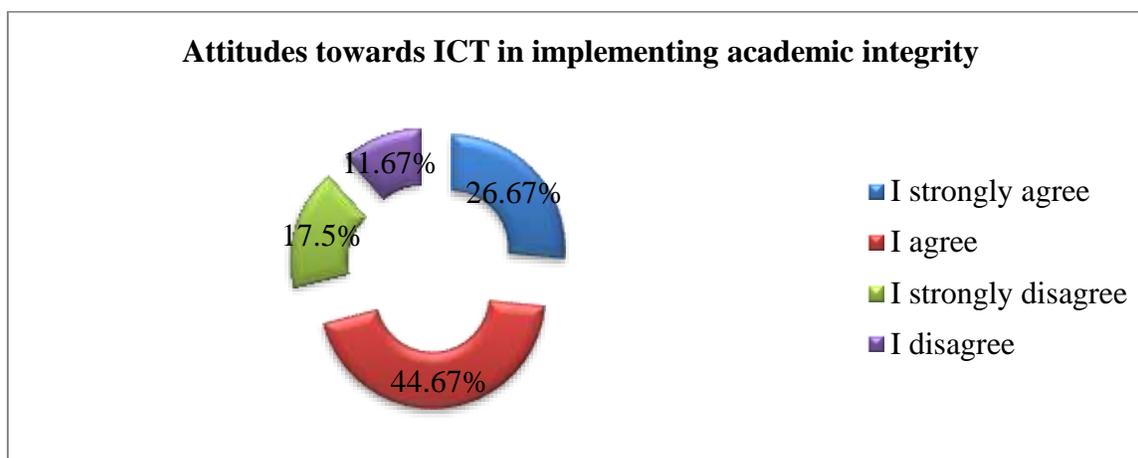


Figure.5. Students' attitudes towards ICT to implement academic integrity

The researcher's intention from this statement is to test the learners' knowledge about academic honesty and integrity and whether they see ICT as a means to put an end for academic fraud. The results reveal that about 26.67% strongly agree that technology is essential in academic honesty, while 44.67% of them decide on the point. On the other side, 17.5% of the participants claim that the net provides different ways for cheating and plagiarism; whereas 11.67% of them highlighting that ICT has a negative impact. They confirmed that they become incapable of depending on themselves to write a small essay because they do not read what they copy down.

c. Interview

The researcher selected fifteen teachers for the discussion from two English departments at Mascara and Saida Universities. Nine teachers are from Mascara, and six are from Saida. Most of those teachers have a good experience in teaching academic research as a module and research

methodology in general. The researcher chose a focus group interview where they gathered the informants in two groups. The first group represents teachers from Mascara, and the second one includes interviewees from Saida University. In this regard, the researcher asked questions and gave a statement and let teachers discuss them. The researcher recorded the interviews and analyzed them later on. The discussion on the subject of ICT and research integrity took four hours. The researchers summarized these statements in the most critical points.

1. In which level did you introduce the subject of academic integrity to your students? And how many sessions did it take? Did you provide them with practices on the subject?

All the teachers showed positive attitudes towards the subject of academic integrity and how they are suffering from their students not only in supervising but in all modules. Five teachers highlighted that they introduced the lecture of academic integrity during the second year in research methodology, while ten teachers claimed that they included the lecture with the students of the first. All teachers informed that students do not need practice in this lecture since they always evaluate completeness in their writings.

2. Are your students aware of dishonesty? Have they any idea about different types of academic misconduct? How do you raise their awareness of the negative impacts of academic fraud?

The discussion was fascinating and took about one hour. The teachers talked about the different types of academic misconduct that they are living with their students starting with cheating, which becomes a necessary ingredient in their research. They highlighted that about 90% of students cheat during tests and exams either through the traditional methods or ICT tools. They also added that fabrication also took place in addition to plagiarism, which took the lion's share in all students' writing activities. All teachers informed that they warn their students about the negative impact of dishonesty in research. In this regard, they maintained that they could not raise their awareness without laws that warn them at the level of the administration. Some teachers from Saida added that there is no place for the subject at the level of the administration, i.e., there are no punishing rules against cheating and plagiarism. They also acquainted that there are no plagiarism detecting tools at the level of the administration, and it is the duty of the teacher who has to punish students. In contrast, teachers from Mascara reported that the laws put by the administration are stringent and severe. Teachers raise students' awareness through seminars on the issue of academic fraud and honesty in research; for this reason, they succeed to diminish the rate of plagiarism in comparison to the previous years.

3. Do you believe that the central factor behind the increasing phenomena of plagiarism and cheating is ICT and its use in education?

The answer to the informants confirmed the researcher's assumptions about the fact that the learners consider ICT tools like mobile phones, social networks, and the Internet as spaces for cheating and plagiarizing. Through their experience, the teachers affirm that the learners are lazy in doing their assignments like essay writing and exposes. They tend to copy down information as they are from the net without using their own words. They claimed that the reason revolves around

their poor writing styles because the students grew up depending on copying and cheating. The interviewees also reported that learners do not employ ICT tools correctly. They claimed that ICT is used for chatting and cheating.

4. Do you think that institutions can use ICT to realize academic integrity?

All the interviewees agreed that ICT is a source or a way for academic integrity if students will be honest in conducting their research works. They added that teachers should change the students' attitudes through raising their awareness of the negative impact of cheating and plagiarism. They also informed that universities and institutions employ ICT as a tool to achieve academic integrity through plagiarism detecting products. The interviewees concluded that it is a problem of ethics, although teachers teach students about ethical considerations in research.

4. Discussion of the Main Results

The researcher endeavored to understand the reasons behind cheating and plagiarism. She summarizes these factors as follows:

- Gender and age,
- Negative attitudes towards integrity,
- Indigent knowledge on academic research (referencing, paraphrasing and summarizing),
- Weak writing styles,
- Time constraints for Master students,
- Students used to cheat in their middle and secondary schools,
- The need for academic success drives learners for cheating and plagiarizing,

The findings revealed that ethics' perception takes a permanent part in directing the learners' attitudes. School and family play a crucial role to raise the pupils' awareness towards honest in their own lives including behavior, study, and work. This means that politeness and ethics are the concerns of schools from the early age of the pupils' education.

Looking carefully and thoroughly on the first hypothesis, one can confirm the point that teachers, to some extent, are doing their best in raising their students' awareness. It is now the role of the administration through enacting rules that warn them, and the Algerian universities have not taken any procedures in diminishing academic dishonesty.

The results also affirmed that the use of ICT tools encourages e-cheating and plagiarism because the learners think that ICT promotes easy success. The last hypothesis is also confirmed because teachers do not look after their learners' pieces of writing and punish them if they copy without referencing.

5. Recommendations

To achieve the aims at hand and to diminish all types of academic fraud, the researcher suggested the following suggestions:

- Teachers can order their students to conduct their assignments in class, rather than doing them at home.

- They should provide their students with original subjects to develop their spirit on how to realize integrity. In this sense, they develop their students' critical thinking and love of research.
- If teachers face the problem of time constraints, they can ask them to carry their assignment at home and, then test their knowledge on the subject through questions.
- Teachers should encourage their students on how to use printed books, journals, and dictionaries which are better than what is on the websites. They have to raise their awareness that they should not take Wikipedia as a source of references.
- The student should provide oral reports after homework.
- A written summary of the homework or the assignment should be given by the student during class so that the teacher can be able to check whether the student uses ICT to plagiarize or not.
- Universities and institutions should provide teachers with ICT tools to detect plagiarism and train on their use.
- Administrations should act regulations to control the overuse of ICT tools in class so that students can depend on their competence to write their assignments.
- Universities should enact regulations and rules against e-cheating and plagiarism.

6. Conclusion

One can conclude that academic fraud becomes a catalyst that threatens the quality of research in the entire globe. Conducting an investigation in the Algerian Universities proves the assumptions of many researchers in the field of academic research, although the researcher cannot generalize the findings on all Algerian Universities. However, researchers can take these findings as a point of departure for more scholarship in fields of academic integrity and misconduct. Indeed, the issue at hand is the concern of all fields of research because these phenomena have invaded and influenced not only the academic arena but also the whole human lives.

The analysis revealed that students share positive attitudes towards ICT tools and their use in cheating and plagiarizing. Therefore, motivations towards ICT are driven by the students' positive attitudes towards cheating and plagiarism since they are recognizing their weaknesses in language competence and procedures of conducting research works. Hence, the use of ICT the ways students cheat and make it easier to do their home works and copy works as if they are own.

The findings also confirmed the point that both teachers and students welcomed the idea of using ICT to realize academic integrity, but no procedures are taken to achieve that aim. The results also marked the absence of the administration in preparing seminars and study days on academic integrity; in fact, the subject is totally neglected; for this reason, the researcher faced various problems in conducting this research and confirming the reliability of their hypotheses, especially the last one due to the point that we have first to talk about the status of ICT in the Algerian educational system, and then we try to conduct an investigation about its placement in the academic research.

To wrap it up, the issue of ICT and achieving integrity remains under investigation and application. In here, the first point that the researcher suggested is to develop a culture of integrity,

i.e., it is the attitudes of the researchers that have to be changed towards integrity, so that it can pave the way for using ICT correctly and putting research in the right path.

Therefore, integrity and honesty should be enhanced from the early years of the learners' schooling by their parents and schools until the university level, and this cannot be achieved overnight. Indeed, it is a challenge for the whole society to change the individual's attitude towards the placement of ethics, so that he will be able to build his ethical considerations not only in research but in his entire life which is affected by the profound impact of technology and globalization in general that have changed beliefs and attitudes and therefore ethical considerations.

About the Author:

Dr. Hanane Rabahi is an assistant professor of sociolinguistics at Maghnia University Centre, Tlemcen, Algeria. Her areas of interest include teaching sociolinguistics, research methodology, discourse analysis, grammar and linguistics. ORCID: <https://orcid.org/0000-0001-5708-2471>

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