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How Students at Ibri College in Oman Evaluate the Criteria Followed in Writing Scientific Research?

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Abstract

Not only does scientific research have an important role in the academic arena, but also in all matters that concern humanity. The scientific research helps in many things such as problem solving, decision making and taking, exploring the outer space, solving contemporary conflicts that happen between countries, especially what is related to science and development. In the higher education institutions, performing scientific research undergoes certain criteria with accurate measurement that depends on facts and statistics, not imagination, or fake and fabricated information. What makes researchers' job precise depends mainly on the "Research Question" which represents the backbone of the whole work. In order to get a complete idea about the importance of the Scientific Research, the researchers have distributed a questionnaire among (21) Information Technology (IT) majors at Ibri College of Applied Sciences in the Sultanate of Oman. What the researchers have found is that almost all students agree that the Scientific Research is essential for both, professors and students, and it should follow certain criteria that depend on accurate information and facts. Recommendations, discussion, and applications will be discussed in depth throughout the paper.

Keywords: backbone**,** criteria**,** explore, facts, humanity, imagination, research, statistics

Introduction

Scientific Research is highly appreciated for academicians who search for true and accurate ways to adopt in conducting research. They deal with facts and truth in their researches. So many letters, researches, books, etc. have highlighted this subject—Scientific Research, as it is essential for humanity. The role of universities is not only to teach and graduate teachers, but also to focus on some students to become researchers who enrich human knowledge by using the proper instruments in performing their job, bearing in mind that scientific research works with no prejudice against any subject at hand—all that depends on is: facts, truth, statistics, numbers, etc. This paper highlights the important role the Scientific Research plays in the academic arena in higher education – mainly focusing on students' and instructors' viewpoints regarding this matter.

Literature Review

The whole world is now boasting a tremendous leap in the field of technology and mainly in the Internet trend. Many kinds of technological development are due to curiosity and persistence from the side of eager scientists and their students alike. Without curiosity, old civilizations would not have been initiated and developed.

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With the help of scientific research, many diseases have been discovered and cured: cancer, chronic diseases, etc. The aim beyond all discoveries done by scientific research is pleasing humanity by offering them the best life style: health, education, clean environment, best infrastructure, clean water, pollution- free atmosphere, etc. To achieve the ultimate results of scientific research, there should be a so crucial requirement—ETHICS.

> A healthy ethics constitutes the essence of a civilized society, in other words the ethics is the foundation on which we build relations both in everyday life and in business. One can say that ethics does not refer to the links that you build with others, because all the people have relations with each other or some over others. It refers to the quality and integrity of these links. Regardless of the type of scientific research, it must not be carried out at random and must be rigorously designed, organized and planned. (Fantanariu & Ioan, 2012, Para.1).

In the field of health, the scientific research explores lots about the roots of certain diseases that some societies are plagued with. COVID-19, for example is spreading all over the world, and with no precise studies, treatment and researches, it would have killed-by now- huge numbers of people. Scientific Research is really a merit in our life—it propels our medical development in a fast pace.

> Conducting research is an important component for the development of scientific thinking. Research adds to the body of knowledge and propels our medical specialty forward. The process also allows the clinician to better understand the nuances of published research and more readily discern the strengths and weaknesses of journal articles. (Kim, (n.d), Para.2).

Pure and trustworthy scientific research should be of high value and fairness. The main characteristic while performing any study is “NO BIAS”. Bias spoils and pollutes the job of the researcher. Sometimes one cannot escape some bias due to some reasons like friendship or kinship, or obeying the funding institution, which is unacceptable at all, no matter what the reasons are. In the scientific arena, bias is utterly unacceptable and would be treated as crime.

> The scientific method attempts to minimize the influence of bias or prejudice in the experimenter. Even the best-intentioned scientists can't escape bias. It results from personal beliefs, as well as cultural beliefs, which means any human filters information based on his or her own experience. Unfortunately, this filtering process can cause a scientist to prefer one outcome over another. For someone trying to

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> solve a problem around the house, succumbing to these kinds of biases is not such a big deal. But in the scientific community, where results have to be reviewed and duplicated, bias must be avoided at all costs. (Harris, 2021, Para. 1).

When following the scientific method in conducting research, researchers can get objective results away from any kind of bias resulting from personal matters—facts talk.

> That's the job of the scientific method. It provides an objective, standardized approach to conducting experiments and, in doing so, improves their results. By using a standardized approach in their investigations, scientists can feel confident that they will stick to the facts and limit the influence of personal, preconceived notions. (Harris, 2021, Para. 2).

Scientific research is not conducted at random, or just as a waste of time; on the contrary, it should be performed in a way that all things at hand are studied, sifted, and done according to a scientific method and should lead to theories, not hypotheses.

> Most of the time, however, the scientific method works and works well. When a hypothesis or a group of related hypotheses have been confirmed through repeated experimental tests, it may become a theory, which can be thought of as the pot of gold at the end of the scientific method rainbow. (Harris, 2021, Para. 5).

Deeds, not words, as the proverb says. In the scientific research, actions speak louder than words, results are more apparent and clearer than just theories. “Scientific research is, first of all actions taken to produce and develop scientific knowledge” (Mamadou, (n.d), Para. 1).

Scientific researches are normally published in refereed journals created for that purpose. All articles are peer- reviewed and checked by specialists who have long experience in this field. Scientific discoveries and inventions have never been published or reported on social media such as Twitter, Facebook, or WhatsApp. The focus is on the results achieved by conducting such experiments.

> Are these scientific discoveries, inventions, and theories reported on Twitter, Facebook, WhatsApp, or any other social media platforms? No, of course not. These complex theories, discoveries, scientific inventions, theoretical and experimental results are generally reported in scientific research papers which are published in peer-reviewed scientific journals. (Rehmani, 2022, Para.1).

Scientific research should be approachable by the general public and written in simple language so as all people can read and understand all the study and its recommended results, bearing in mind that these researches should be of high caliber that attract both specialists and non-specialists. To keep prestigious, high standard, and distinguished, scientific researches should be published in domains that concentrate on ethical and fair means of publication.

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> In some European countries, it is essential for scientists and researchers to communicate their research in easy words to the general public and educate the masses. The same can be done here and this will result in scientific attitude development in our nation. We, as a nation, should encourage quality research and discourage unfair and unethical means of publishing scientific research papers. (Rehmani, 2022, Para.1).

Conducting a prestigious scientific research should be done in a series of projects and tries, and this idea is unanimously agreed upon and recommended by almost all researchers. Doing so, gives strength and power to the content published.

> In addition, researchers unanimously agree that a scientific research culture is not built on a one-off project but rather a continuous series of projects and policies intended to make research practice and output an entrenched value, belief and a singular part of the institution's personality and character (Kwarteng, 2021, Para. 21).

Researchers are human beings and do not necessarily know everything, even in their majors, which is normal, of course. No matter how clever and smart they are, they still have downfalls in performing or conducting research papers. If a researcher admits that he/she does not have a solution or answer for a certain point, it is not the end of the world; they feel humble regarding this behavior. In certain tries the researcher may fail in proving a certain matter and then tries again till he/she reaches a satisfying result. Sometimes professors apologize for not knowing certain points in their majors simply because they are not angels, or gods.

> I remember the day when Henry Taube (who won the Nobel Prize two years later) told me he didn't know how to solve the problem I was having in his area. I was a third-year graduate student and I figured that Taube knew about 1000 times more than I did (conservative estimate). If he didn't have the answer, nobody did. (Schwartz, 2008, Para.4).

Lack of credibility and false foundations and interpretation of results lead to failure, but adopting and following the scientific method and measurement is the best policy to get all desired results. When more than one researcher work together on the same project, there should be a complete sense of cooperation so as to secure sound credibility.

> In scientific research, credibility is of utmost importance. Data documentation and storage, and the "rigor, transparency, and attention we invest in designing, conducting, and reporting experiments" are part of ensuring sound credibility. Science can only progress if there is corroboration among colleagues, and reproducing research results can be difficult when the original study is lacking in areas such as unsound scientific methods, misinterpretation of results, or other issues that might have been purposely ignored to achieve the desired results. (Enago Academy, 2019, Para. 1).

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For junior, fresh, and new researchers, writing their reports might be overwhelming and totally excited, especially when they face that amount of information, data, statistics, etc. They might not know where or how to start. However, by adopting the scientific method of writing, they will excel and produce a cogent content for publication.

> For first-time authors, the prospect of writing their very own scientific research article may be both exciting and overwhelming. Faced with a mountain of data, notes, and other remnants of the research process, it may be difficult to figure out where and how to begin the manuscript writing process. However, if the research has been done well and the topic is appropriate for classroom submission or journal publication, authors will be off to a good start by approaching the writing process in a methodical way. (Enago Academy, 2021, Para.1)

Methodology

The researchers have distributed a questionnaire among (21) Information Technology (IT) students in the Fourth year at Ibri College who are very much familiar with research writing and its importance in their studies.

Population

The population of this study are (IT) majors in their final year at college. They are between 22-24 years of age. They come from different and diverse regions in the Sultanate of Oman: cities, towns, coastal places, etc.

Questionnaire Analysis

Table1

	Yes	No
Scientific research should be offered as a general requirement across all majors at higher education institutions.	19	2
	90.5%	9.5%

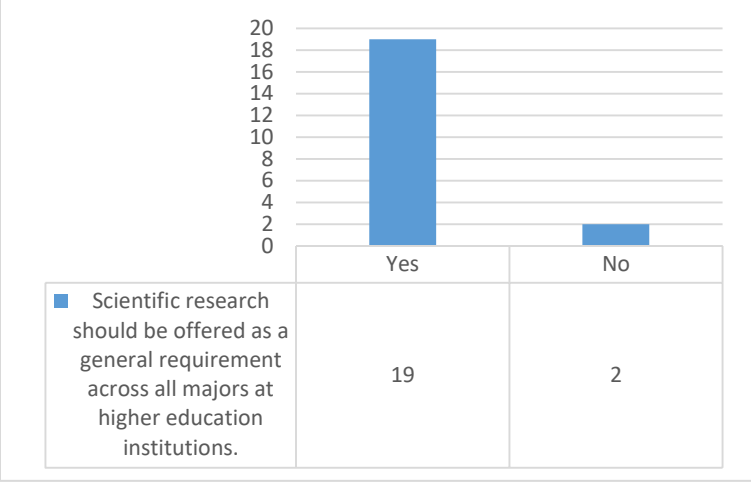

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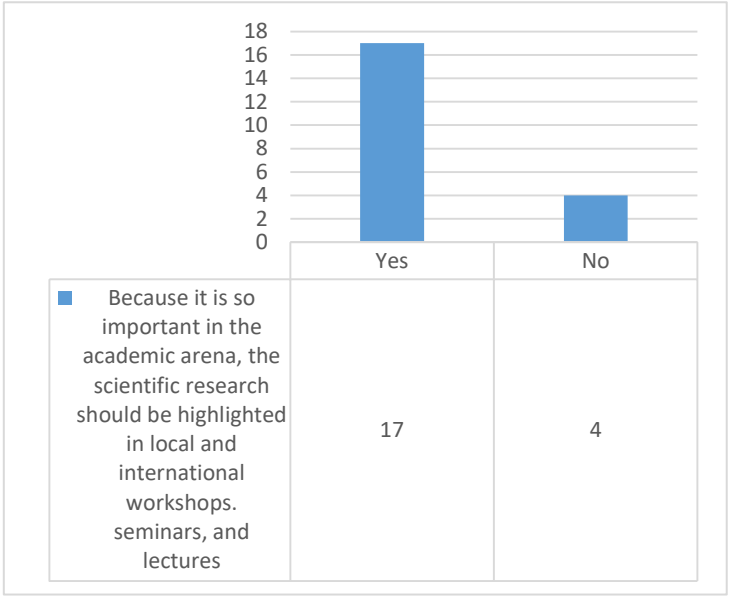
Table 1 shows that 90.5% of participants believe that Scientific Research should be offered as a general requirement across all majors at higher education institutions, while 9.5 percent do not. As demonstrated by the grade division that teachers follow when evaluating student projects, marks are awarded based on students' ability, or skill in writing scientific researches in accordance with professional standards in research preparation.

Table2

Because it is so important in the academic arena, the scientific research should be highlighted in local and international workshops. seminars, and lectures	Yes	No
	17	4
	81%	19%



According to (Table 2), 81% of students agree that scientific research is so important in the academic arena. It should be highlighted in local and international workshops, seminars, and lectures as a required skill for university students. Because of the lack of awareness of scientific research and its importance among students, 19% of students do not believe in its importance, and such workshops and seminars are urgently needed.

Table3

The Scientific Research deals with facts and truth, not imagination or guessing.	Yes	No
	20	1
	95.2%	4.8%

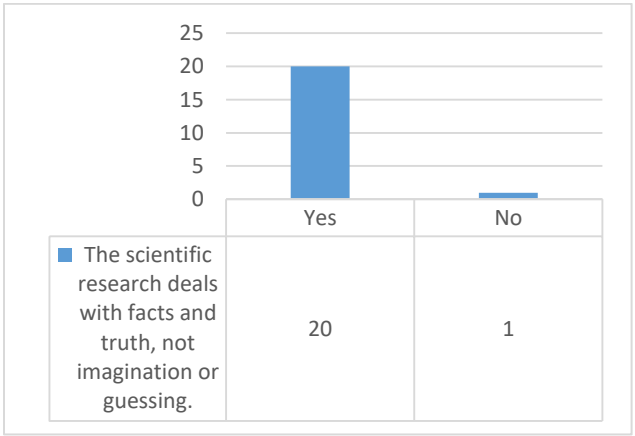


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Table 3 proves that the Scientific Research deals with facts and truth, not imagination or guessing, as evidenced by the high percentage of respondents, which reached 95.2%, and this indicates that there is some awareness among students that scientific research is based on scientific facts, not imagination and speculation, which means that students should acquire the necessary skills.

Table 4

Scientific research is essential for both professors and students alike.	Yes	No
	20	1
	95.2%	4.8%

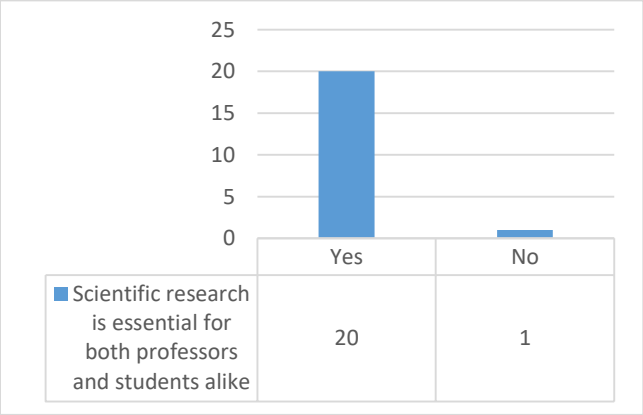
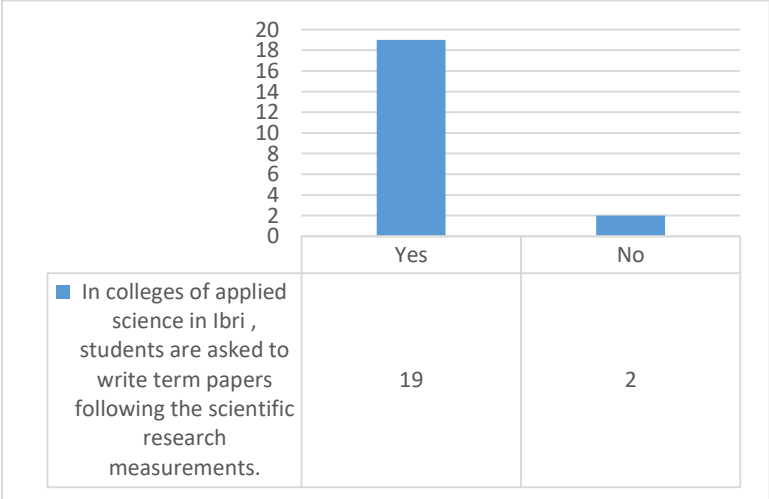


Table 4 show that the scientific research is essential for both professors and students alike. Scientific research represents a way solving problems and plays a major role in dealing with the challenges facing humanity. Hence, the respondents realize the importance of this, as this appears through the fact that 95.2% of the respondents consider scientific research of great importance to teachers and students who are part of the community.

Table 5

In the college of applied science - Ibri - , students are asked to write term papers following the scientific research measurements.	Yes	No
	19	2
	90.5%	9.5%



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According to the results(of Table 5), 95.5% of the students at the College of Applied Sciences in Ibri declare that they are asked to write term papers according to the correct scientific standards, while 9.5% are not interested in writing research papers scientifically. It is worth noting that these institutions have departments devoted to scientific research and have an interest in it.

Recommendations

-scientific research should be offered as a general requirement across all majors at higher education institutions.

-researchers should be paid for their work, as they spend much time and effort working on certain matters that benefit not only academic institutions, but also all humanity.

-scientific study should be done objectively, with no pressure from any authority, whatever, or whoever it is.

-researchers should not overlook the local and societal problems that affect the life of the society on one hand, and should have contacts with the policy makers on the other hand. A good contact with academic institutions, housing, agriculture, health, infrastructure departments is badly needed.

-the huge gap between higher education institutions and the local society should be bridged out. This means that all people share the same responsibility to carry out any scientific research needed for prosperity of the local society, and/or the whole country.

-university professors should encourage their students to look for any crucial problems around, academic or non-academic, and start researching about its causes, effects, results and solutions.

-there should be some initiatives to conduct workshops, seminars, or lectures about the ultimate ways of researching accurately.

-university professors who work on scientific researching should have some merits—reduced teaching load or financial support.

Conclusion

Scientific research has become a vital requirement in the academic arena, and should be promoted and developed to the maximum. The most important thing in the scientific research is that it depends on facts, truth, numbers and statistics. There is no way for prejudice of what so ever. Throughout the questionnaire given to our students at Ibri College of Applied Sciences in the Sultanate of Oman, almost all students agree that research study represents the backbone of the educational process in higher education and suggest that it should be taught as a general requirement across all majors.

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