

Weighing Research Competency of Undergraduates: An Empirical Study

Dr. Shadma Iffat

(Department of English, College of Science and Arts/ King Khalid University, KSA)

Abstract:

Background: Writing a scientific research is a very influential segment of the graduation program in King Khalid University (KKU). The purpose of the study is to investigate the research competency of the college students from KKU and to find out the factors that come in between their successful accomplishment of research tasks.

Materials and Methods: The present research is an empirical study, essentially based on the qualitative approach. The study sample consisted of 70 students studying in different Colleges of King Khalid University. The data is obtained through a survey questionnaire to assess the students' attitude towards research. The results are displayed in bar graph with a mean value for each set of five items. Furthermore, the result of the observational study carried out in research classroom during three semester of the graduate program, is also presented.

Results: The data shows that students' inefficiency in writing skills and their indifferent attitude towards research processes are some of the factors that are the root cause of their ineptitude to produce an authentic and coherent writing. Other factors that influence their research potentials extrinsically or intrinsically are; the limited time duration, their study habits, overburdened with other subjects, and to some extent, their inadequate knowledge about research ethics.

Conclusion: The study concludes that with the provision of knowledge for research ethics with some related facilities to students for writing a good research proposal, there would be a positive impact on students' motivation level.

Key Word: Undergraduates; Research Activities; Research Attitude; Academic Environment

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I. Introduction

It's a matter of great concern for any institution if its young learners, specifically undergraduates remain indifferent towards scientific researches. King Khalid University aims to provide a conducive learning environment, to promote scientific research and in particular, to enable students to produce effective and authentic researches. The primary goal of the university is to work effectively for the research progress that focuses on the development of the research competence in students. The development of research competency comprises of numerous progressive activities. In this arena, the students are required to do is to understand the concept of research and the research process, writing the literature, gathering data, analyzing data, and writing the paper with correct grammar. Using an empirical approach, this study tries to investigate students' research capability and the underlying factors affecting their research development. Research competence on the part of students meant the level of proficiency to carry out their research tasks in an effective way.

Teaching research courses to female undergraduate students is a quite challenging task not only for a teacher (to motivate their students) but for the students as well; perhaps because the students encounter various complexities in jotting down their ideas in the language they are not proficient in. The students' performance differs from being an independent learner to being a part of a group working collaboratively, where they are able to produce more coherent writing. This idea is supported by Coe et al. (Coe, Rycroft, Ernest 1983) in his book where he clarifies that working in a group enables a learner to 'contribute all the elements necessary to produce clear writing'. Regarding college students as being a researcher, Kincheloe (1998) observed: "Teachers and educational leaders dedicated to promoting student research must thoroughly understand the context of such scientific schooling, its epistemological assumptions and its discomfort with students exploring the world around them".

The most predominant factors affecting the development of students writing skills involve their motivation level and their deep interest in that subject. To analyze the underlying factor behind the failure to produce authentic and coherent writing, particularly, research writing, we have to delve deep into the root cause of the students' innate aptitude for writing skills. The education ministry in Saudi Arabia is putting immense

effort to promote the research arena. Many institutions offer funding for researchers to encourage them, yet the faculty members, as well as the student researchers, are least inclined in taking the research projects. They allege that they are discouraged with the unavailability of proper funding, and being overburdened with their workloads, that Alrahlah (2016) affirms with his exploratory research that inefficient funding and support of the institution with the unavailability of research facilities to accomplish various research projects are the barriers for the faculty members. He also asserts that a number of faculty members in dental colleges are least motivated to execute any new research. In a similar context, a study conducted on medical students, Khalid AlGhamdi (2014) notices few obstacles that prevented the students from conducting research are; lack of professional supervisors, lack of training courses, lack of time, and lack of funding. It might be the reason for the students not taking up multiple research activities more than one which is integrated as a mandatory subject in the curriculum. In this case, it can be said that the academic environment as an extrinsic factor, plays a vital role in motivating the researcher, either a student of a faculty member. On the part of undergraduates, it assists in fostering their research potential and displaying their aptitude for the learning. When a better learning environment is produced, there are higher chances of achieving educational goals. A learning environment involves many distinct circumstances and cultures, and can also be referred to in a pedagogical context. It provides students with more active and self-regulated performance in their learning. In this term, it also refers to the cultural environment which the students belong to or come to interact with them, to facilitate learning in various ways to fulfill the diverse needs of students. Contrarily, in a stressful environment, the learners tend to have lower learning that affects their attitude and their overall achievements negatively.

Numerous studies have been carried out on assessing students' attitudes towards research from different perspectives. As we engage students in research work, we want them to develop a higher level of understanding and critical literacy. Students and teachers should work collaboratively to tackle the obstacles that block the achievement of their goals and dreams (Kincheloe 2001).

After reviewing the previous studies, some prominent findings are discussed here to focus on the factors responsible for writing the research process and the activities related to it. According to Al-Khairi (2013), the participants of his study scored 'the highest mean value (3.8)' which indicates that the major problems faced by them are their use of inappropriate vocabulary in their academic writing. He also revealed that 'insufficient number of language courses at Taif University' is the most significant reason behind their poor academic performance. The least important reasons identified by the participants for their weak writing were their low English proficiency, teachers' lack of interest in writing tasks, and insufficient use of dictionaries. The findings of this empirical study further support the general assumption that Saudi students are very weak in writing skills and commit countless errors in their academic writings. In the study of Al-Asadi (2015), a low percentages (20%) of participants were able to "demonstrate 'Adequate' performance in all criteria and showed the ability to write competent argumentative essays". Some students faced difficulty in extending their thought patterns beyond those pertaining to their mother tongue (Arabic). He concluded his study with his viewpoints that "Unlike commonly long-held views on contrastive rhetoric, Arab students' poor competence in academic writing may be explained by a combination of traditional syllabus constraints and teaching methodology".

Reviewing the semester-end course evaluations of Research Methods done by the students themselves to assess their opinions regarding the research course, it is concluded that the students regard this course as the least relevant for their future academic career. This negative concept is approved by Li (2012) that possessing a negative attitude towards research methods affects the learners in a way that they seem to be least interested in putting extra effort into studying the subject. On the other hand, possessing a positive attitude might result in an increase of their motivation level, taking interest in putting their effort into studying the subject, especially practicing research activities.

The study of Al-Fadda (2012) claims that ESL students face many difficulties and stresses in their academic writing, including those caused by the distinction between spoken and written styles in English texts; perhaps because the grammatical structure in Arabic language is quite different from that of English language in both its spoken and written forms; such as differences in alphabets and differences in writing styles, because there are more metaphoric phrases and lengthier sentences in Arabic language. In another study to assess the research potential of medical students, Iskraa & Moskvichevab (2013) found 'negative interrelations between motivational component of research potential and following values in medical students'; and estimated that if the students are loaded with high research potential, they seem to be more interested in 'self-development, self-assurance, and creativity'. It is agreed on their findings that the intensity of students' active participation in research activities is positively correlated with their academic achievements.

One of the pertaining factors is knowledge of research ethics. While Memarpour et al. (2015) in their study, mentions the main obstacle to research writing as "inadequate financial support followed by the preference for academic instruction over research, limited time and lack of research skills". They carried out research on Medical science students, in three schools of medicine, dentistry, and pharmacy, showed a favorable

knowledge of research, but their attitude toward the research process ranked below moderate. Female students are said to have a better knowledge of research as compared to male students.

On the basis of the self-efficacy theory of Bandura (1991), it is assumed that students who possessed a positive study attitude were more likely to demonstrate higher academic performance as compared to those with negative attitudes towards their studies. His findings revealed that attitude towards research methods as well as academic self-efficacy of students can significantly predict their effort. Students with a high self-efficacy towards research methods and statistics, tend to put more effort into studying the subject.

The motivation factors play a very substantial role to support research activities of undergraduates where they can demonstrate the innate creative abilities and their original ideas. Kostromina et al. (2014) supports this point with their study results that the three components of research; such as students' motivation, cognitive aspects of students, and self-regulation, provide 'personality control' of the entire process of researching, evaluating data and reviewing, affect the research process of students at most. Moreover, an effective research paper needs will power, determination and setting of goals on the part of the students. They can perform better by setting a goal and master their writing skill and possess a good vocabulary. In this case, it is appropriate to mention Vroom's theory (Miner 2015) that starts with the idea that people tend to prefer certain goals or outcomes over others.

The present study is an attempt to explore the following questions:

- What are the factors that influence the research potential of the undergraduates?
- What are the reasons that make the undergraduates least interested in research activities?
- Is there any significant difference between boys' attitude for research and girls' attitude for research paper writing?

II. Material And Methods

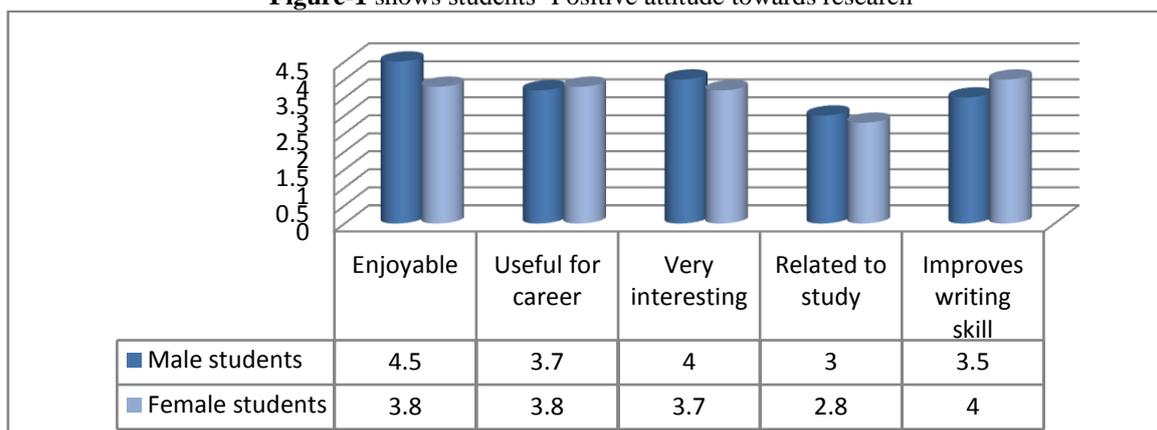
In our study we have executed both qualitative and quantitative methods. The qualitative approach includes an empirical study (observations, interviews, tests, the research activities, and the evaluation process of the students' final manuscripts which were taken as a sample of study to examine their performance). For quantitative study, a survey is conducted on a sample of 70 students from different colleges in King Khalid University, out of which 45 are female students and 25 from male colleges who study the 'Research Methods' as a mandatory course in their curriculum. The participants are those students who either have completed the Research Methods as a mandatory course as a part of their graduate program or yet to complete. To explore the predominant causes affecting college students' research tasks, three sets of questionnaires based on a five point Likert scale was prepared. Each set consists of five questions assessing students' attitude, motivation, and interest level. Altogether there are 15 items on the scale that are analyzed to display with a mean value for each item. Their average age is 19. For a comparative study, the questionnaire were sent to boys campus to obtain their data, to assess their attitude towards research activities, its value in the future, and how much it affects their overall achievements. The data obtained from the female participants are compared with those received from male counterparts from another college of King Khalid University.

In addition, all the female students studying the course from upper levels were being interviewed with semi-structured questions, and their opinions were recorded regarding research interest and the difficulties faced by them during the research process. Besides, an observational study was carried out for three semesters consecutively in the female section where the researcher has been teaching for seven years. During the observation period, the teacher recorded the students' participation in research classroom activities as well as assigned projects, marking their enthusiasm for writing research proposals, collecting notes, and analyzing them.

III. Result

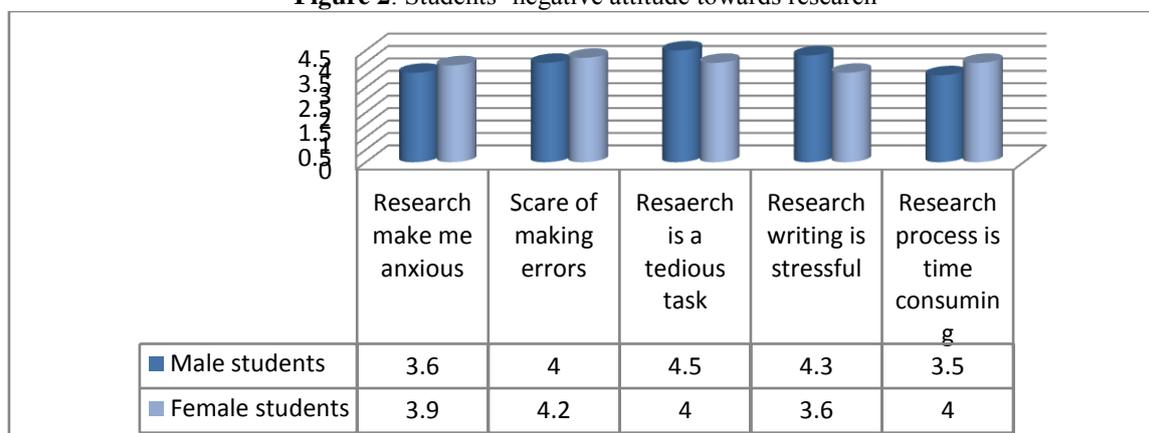
Being an empirical study, the research design includes both qualitative and quantitative approaches used in getting the data to assess their interest and attitude for research methodology as a subject and carrying out the work within three months of one semester. To collect their responses, they were given a questionnaire that consisted of 15 questions divided into three sections: positive attitude, negative attitude; and attitude towards other affecting factors. The figure-1 below displays the mean value of students' responses on each item. The data is compared to the responses of male students and those of female students. Figure 1 reveals the students' positive attitude towards research activities, while figure-2 shows their negative perception of research.

Figure-1 shows students' Positive attitude towards research



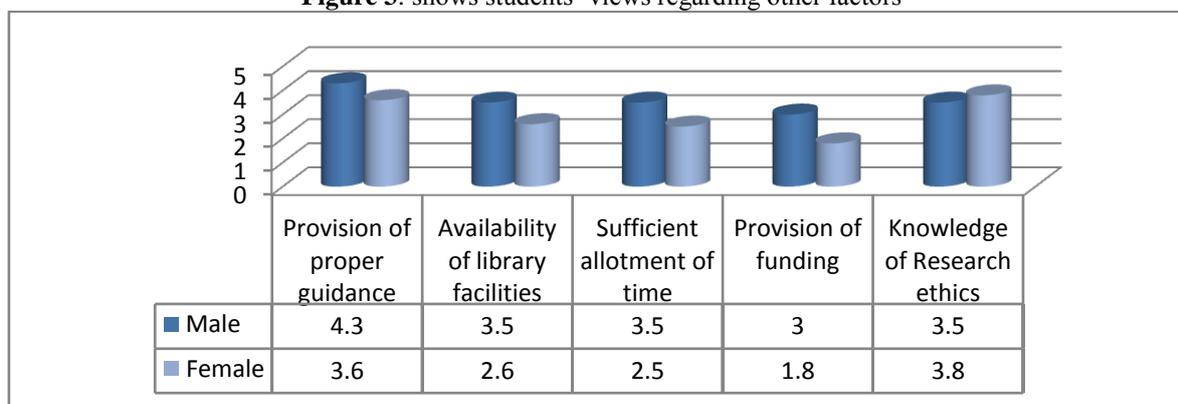
Boys find research activities more interesting (M=4) than girls (M=3.7) while both of them visualize research as useful for their career. The male respondents anticipate that research activities affect their achievement positively, whereas female students disagree at this point.

Figure 2: Students' negative attitude towards research



In figure-2 above, the result reveals the great variance between the male and female students' responses to research activities regarding their ineptitude. Though the female students agree on understanding the concept of research, they still find the research task very stressful and complicated. They both appear to be more afraid to commit mistakes while writing the research paper as the data shows with females (M=4.2) and males (M=4).

Figure 3: shows students' views regarding other factors



The above figure explains the positive aspect of students' speculation regarding institution funding, their supervisors, non-availability of research materials, knowledge of research process, and availability of sufficient time. The result shows the percentage of those students who agreed on these criteria. In Figure 3,

female students seem to be less satisfied (M=3.6) with the guidance provided by their supervisors than the male students who strongly agreed on the provision of better guidance (M=4.3). Similarly, the boys have more library facilities than girls on their campuses. There is the least difference between the responses of both genders regarding the awareness of the research ethics, yet the graph shows the more percentage of females (M=3.8) than those of males (M=3.5). Regarding the provision of funding from the institution, the majority of girls disagree on this point, while the male students appear to be satisfied to a degree (M=3) or not concerned with it. Another factor, that the allotted time duration to accomplish the research project is not sufficient as they seem to be dissatisfied with it. The results also show their disagreement on the availability of research materials easily.

Figure-4 displays the course evaluation results

Items	Periods (2018-19)	No. of responses	Mean value(M)	Average Percentage
What I learned in this course is important and will benefit me in the future.	Sem-3	27	3.7	74%
	Sem-2	8	4.13	73.4%
	Sem-1	4	3.5	70%
This course helped me improve my critical thinking and problem solving skills	Sem-3	27	3.59	71.8%
	Sem-2	8	4.13	73.4%
	Sem-1	4	3.5	65%
This course helped me improve my teamwork skills.	Sem-3	27	3.7	74%
	Sem-2	8	4.13	73.4%
	Sem-1	4	3.5	70%
This course helped me improve my ability to communicate effectively.	Sem-3	27	3.52	70.4%
	Sem-2	8	4.13	73.4%
	Sem-1	4	3.5	70%

The above table (Figure-4) provides the result from female college only. Though the result of those semesters with low number of respondents in the course evaluation cannot be generalized for all research students, the findings display the moderate level of understanding of the course. From the actual result, about 42% (Sem-3; M=3.7) are in between the points of agree and disagree. Almost in all results, majority give point to 'don't know'. We find significant difference between the course evaluation results of all three semesters in almost all items. The result with low respondents have similar findings with M=3.5 (Sem-1) and M=3.7 (sem-2).

IV. Discussion

The observational study reveals the pathetic situation of the female students which is evident with their inactive participation in classroom activities, their procrastination of assigned tasks and practicing plagiarism in their final submission; all shows the inept writing skill of the students. It is assumed that a positive attitude towards research activities can have a positive effect on their academic performance. Some underlying factors that influence students' negative or positive attitudes towards their writing deficiency are their fear of committing errors, lack of critical thinking and a favorable learning environment, etc.. Their research potentiality is somewhat related to their lack of knowledge of the subject makes them least motivated to accomplish their tasks. During the observational study carried out in the female section, it is estimated that the students struggle hard to make their writing coherent because of the predominating native language. In many cases, they are found to 'stumble over' expressing their ideas in writing which is "a deliberate, conscious process, which can and should be planned and organized" (Coe *et al.* 1983)

In one of the numerous studies performed on Arab learners to assess their writing issues, Javid & Umar(2014) reported from the findings of their study conducted on students of Taif University, that the language learners in EFL classroom face crucial problems in their academic writings because they are unable to use appropriate lexical items and organize their ideas with proper use of grammatical structure. He suggested that the major reason for their weak academic writing is the limited opportunities they find to practice L2 outside the classroom.

In another survey, Seimen (2010) observed in his article, that the time was seen to be a significant barrier in pursuing research during medical school as only 31% of all respondents felt there was adequate allotted time for research endeavors. He also observed that another perceived barrier to participation in research was the difficulty in attaining research supervisors with only 44% of respondents agreeing that it was relatively easy to find a research mentor. The study explains that the allotted time for research is a significant barrier (M=2.3), corresponding to another study (Jabali 2018) which declares that contemplating on time slot specified for research activities in the student curriculum might be very favorable in reducing the barrier of heavy workloads as is evident in this research too with students complaining of limited time duration (Memarpour et

al. 2015). There is a significant difference between this influencing factor for boys with (M=2.5) and girls (M=3.4). Therefore, it can be determined that the time duration does not obstruct the research activities in all situations. The result might be different in accordance with the students' learning circumstances.

We have done a descriptive evaluative analysis of students' final research project submitted at the end of the semester for final grading and the result. Their works exhibit incoherence and plagiarized as a result of insufficient knowledge of subject and writing deficiency, as clarified by Widagdo(2017) that the students do not feel confident to express their ideas in writing. It was hypothesized that the principal cause of the students' lack of interest in the research writing might be their low motivation level and writing incompetence. There is a significant difference between their actual performances in the classroom activities and the final submissions of their research projects. After assessing their script it is also assumed that these students are very weak in writing skills and apprehensively commit lots of errors. Concerning the issues of plagiarized work of students, Alghamdi (2018) asserts that "students are plagiarizing because of the heavy project loads and that their teachers do not check for plagiarism". His finding indicates the college students' reluctance to take a large amount of research assignments because of this pertaining factor.

There are some other factors found to be taken as important as those above mentioned, remarkably affecting the female students achievement are: overburdening with many subjects which they take up for one semester, stress of exam preparation, submission of assignments, their household liabilities and responsibilities, insufficient resources, lack of confidence, and lack of cooperation with group members, etc. Giving their views on what hinders them to be active in research program, they asserted that the subject is very tiresome and boring as they do not any other benefit except getting the grades in the final examination. A majority of female respondents confessed that as they are preoccupied with their domestic affairs, burdened with various responsibilities, they hardly get enough time to search authentic materials for their research writing due to the unavailability of reference materials in the college campus library. They observed that the research writing process is very time-consuming. They reasoned that if they focus on only one subject, they cannot spare enough time for other subjects. Furthermore, if they somehow manage to find books in their native language, it needs to be translated into English and that seems to be a hectic job for them. It is observed that Arab young learners have an underlying tendency to find the shortest way to study a subject, thence they finally end up in practicing plagiarism. Some students complained of being afraid of committing mistakes while trying to write down their opinions and losing their grades as well.

V. Conclusion

Efficiency in academic writing contributes to the organization of ideas in an effective way to produce an authentic research. This paper identifies students' both positive and negative attitudes towards research activities which they are obliged to accomplish at the seventh level of four years graduation program. Through the study on 70 college students, it was calculated that the undergraduates' attitude for research writing activities is at a moderate level. The results show a significant difference in the attitude of male students and female students towards research activities. In our findings, boys are found to be more interested in research activities than their female counterparts as they enjoy better facilities in their institutions. On the other hand, female students complained of many hardships they have to face during their learning period including those restrictions imposed on them. In Saudi Arabia, women's education is on high progress, yet to get excellence in scientific research it needs to grab the attention of the concerned authorities for its betterment.

VI. Limitations

The study has some limitations as it shows only the result of few institutions only with a limited number of male and female students, it cannot be generalized for all Arab students taking Research subjects in other colleges of King Khalid University. A further study need to be done on a broader terms.

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