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**Challenges that affect acquisition of scientific
research skills and its relationships to the research
opportunities among college students in
Najran University**

By

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Abstract

The educational system in Saudi Arabia has improved but the research infrastructure and teaching methods are still not ideal. The students in Saudi Arabia lack research-based skills. A survey was conducted on 95 respondents in Najran University to investigate the challenges that are responsible for lack of scientific research skills and whether any significant link with research opportunities exists. The responses suggest that institutions provide a medium level of research opportunities for the students; however, the students lack ability and competency for research skills. The students' ability was found to be the greatest factor that affected their acquisition of scientific research skills. The institutional barriers seem to affect less as compared to personal barriers in students. The study also found a strong correlation among barriers (personal and institutional) and research competency. The study suggests that institutions should offer workshop training and seminars to make students aware of the significance of research skills and more importantly, the students must make an extra effort to participate in research opportunities provided by the institution.

Keywords: research skills, research opportunities, barriers, college students, University, Najran University

1. Introduction

The need for scientific research now is urgent, as it is a major factor in the educational, economic and social renaissance for the country, while the world is racing to access the greatest possible knowledge. By conducting diligent research, universities play an important role in identifying economic and social problems in the community (Hassan, 2007). The scientific research in universities is a major factor in raising the quality of education through the extent to which college students master scientific research skills and develop these skills to help them research systematically to solve the academic and educational problems that contribute to the development of state institutions. This is consistent with the National Qualification Framework, which acknowledged the need for the development of cognitive skills as one of the fields of learning outcomes for college students to be developed during their study through the development of their scientific research skills (Al-Ali, 2015; Kelly, 2011; Al-Asmari, 2010);

According to study by Illescas et al., (2014) titled “Research skills in psychology students at University of Guayaquil, Ecuador, Alterida”, the twenty-first century university is increasingly needed to meet the challenges that contemporary society imposes related to production and transmission of culture and the training of professionals who demand a high preparation from the scientific and research communities (Illescas, Bravo, & Tolozano, 2014). The development of scientific research skills among college students can help them acquire those skills. Universities are working to make students show their scientific research potential by collecting information and scientifically presenting it in a clear framework that conveys the capability of the students to follow the correct methods and steps in scientific research (Abbas, 2009). This will have a great impact on the quality of the educational work and achieving the best rates in progress and development.

However, a study done by Al-Muqbil (2012) indicated that the level of scientific research skills is low among university students, showing that all the participants were not good at writing scientific research and did not know how to search for sources and references, and the results also showed that all programs of the College of Education at Taibah University did not allocate any courses for scientific research (Al-muqbil, 2012). If educational institutions do not play a greater role in developing teacher research capabilities, this will be negatively reflected on the educational process. Education then becomes a tool for memorization and indoctrination, not a tool for development and change, which will reflect negatively on the students, who received information without effort, research or survey of knowledge to be mastered. The result is that they are lacking scientific research skills, which will have a negative impact on the development of the country. The author of this paper presents a set of theoretical reflections on helping to understand the barriers behind college students' failure to acquire scientific research skills during their study.

Statement of the problem

The education system is struggling with numerous issues when it comes to quality; managing the international standards in this field is crucial. There has been a debate over the factors that lead to a diminishing quality of education. Several studies have tried to discover the exact cause behind the affected quality of education. A report by Working Group of Undergraduate Education (2006) suggested that unnecessary regulations, ineffective teaching approaches, lack of resources and incentives have led to a decline in the quality of education (WGUE, 2006). The quality of education has been affected to the point that students are now being prepared for their examinations, but they do not have the required set of skills related to intellectual development, language competence and research work. Some studies have suggested blaming the institutions for their lack of resources and facilities necessary for conducting research, for instance, the Internet.

A study by Mapolisa and Mafa (2012) indicated that most institutions did not include research-based material in course curricula and there is poor access to computer and research material (Mapolisa & Mafa, 2012). Additionally, institutions do not focus on increasing workshop trainings which are thought to be best for skill acquirement. All of these factors play a great role in producing a negative environment for the students, having a direct impact on their ability to gain research-based skills, inquiry and their healthy cognitive development. When students are not provided with required resources, the challenges they face influence their motivation level for conducting research.

A study by Ayuob et al. (2016) found that integration of research-based material in course curricula helps in increasing and promoting a study environment that motivates the students to acquire research-based skills (Ayuob, Banjari, AlMarghoub, AlQulayti, & Eldeek, 2016). This leads to increased postgraduate research productivity in the students. The education system in Saudi Arabia acknowledges this fact, as the same study suggested; however, more action must be taken in order to fully integrate the research-based material in course curriculum. The education system in Saudi Arabia currently lacks exposure to scientific research opportunities for students. This has resulted in a lack of confidence and motivation by students toward research-based scientific learning procedures. It is quite necessary for the education system to make sure that students are exposed to research opportunities in order to acquire the necessary set of research-based skills.

The researcher of the current study found, through teaching in the College of Education in Najran University, that students lack many of the basic scientific research skills for writing research papers properly. These inadequate research skills will raise questions as to their competencies in their professions in the future.

Research Objectives

1. To identify the availability of research opportunities for college students in Najran University.
2. To evaluate the level of research ability and competence acquired by college students in Najran University.
3. To recognize the institutional and personal barriers impacting the development of research skills among college students in Najran University.
4. To identify the relationships between the scientific research skills and institutional and personal barriers among college students in Najran University.

Research Questions

The research questions developed relating to the research objectives are below:

1. What is the availability of research opportunities for college students in Najran University?
2. What is the level of research skills acquired by college students in Najran University?
3. What are the relationships between research opportunities and challenges among college students in Najran University?
4. What is the relationship between the research skills acquired and challenges among college students in Najran University?

Hypothesis

Hypothesis 1: there is a statistically significant relationship at the level of significance ($p \leq 0.05$) between research opportunities and institutional challenges among college students in Najran university.

Hypothesis 1a: There is a statistically significant relationship at the level of significance ($p \leq 0.05$) between research opportunities and personal challenges among college students in Najran University.

Hypothesis 2: There is a statistically significant relationship at the level of significance ($p \leq 0.05$) between the research skills acquired and the institutional challenges.

Hypothesis 2a: There is a statistically significant relationship at the level of significance ($p \leq 0.05$) between the research skills acquired and the personal challenges.

Literature review

Scientific research is defined by Abidat (2010) as a step-by-step systematic procedure that is conducted per fixed methodology in an educational field. The purpose of a research is to look for solutions to problems that are proposed in the form of hypotheses to be tested and verified through proper investigation and analysis. There are many types of researches. Research activities are conducted in many fields, such as knowledge, professional, economic, and social. There are different types of researches serving different purposes and specializations; however, there are some basic elements that apply in all: problem area, statement of the problem, collecting relevant data, developing hypothesis and design of tests, and finally the results and discussion section. It is not crucial that these elements are followed in a sequence in every research paper; these are overlapping steps rather than separate sections. (Susan & Karsten, 2013; Green et al., 2009; Al-Asmari, 2010; Al-Weziani, 2007; Al-Saati & Al-Saati, 2006; Boqs, 2002).

Asiri (2012) found that postgraduate students face challenges in writing master's theses that include comprehensive research and suggested students must be trained in order to develop and acquire basic research skills in the study area. The students must be familiar with literature review, theoretical frameworks, methodologies and documentation. In addition, students must know the purpose and use of references and citations. Furthermore, Cameron and Collie (2013) pointed to scientific research as an attainment dependent upon scientific basis and individual and joint efforts. Students obtain knowledge and the ability to locate appropriate primary literature and explore appropriate data regarding research processes (Gilmore & Feldon, 2010).

Recent studies suggest that the educational system in Saudi Arabia has experienced significant improvements. A study by Abdulrahman (2016) suggests that the quality of education in Saudi Arabia has improved, though the infrastructure for research development is not ideal. This study concludes that Saudi Arabia has been improving when it comes to quality of areas such as educational approach and student outcomes, but the research-based opportunities still require focus. The education system in Saudi Arabia seems to lack the basic resources necessary for research development and research opportunities for students. Institutions lack resources and Internet facilities have poor access to computers and technology, and lack workshops and seminars on the related subject. Even in institutes where research opportunities are provided by the institutions, students still lack ability and interest in participating in those research-based opportunities.

Studies by Al-Ghamdi et al. (2014) and Al-Hilali et al. (2016) indicate that less than half of the undergraduates in Saudi Arabia display positive attitudes toward research-based activities. Thus, these studies suggest that students are solely to be blamed for their inefficiency and lack of interest in research-based work. It seems that the students in Saudi Arabia are reluctant to participate in the research-based opportunities provided by the institutions (Al-Ghamdi, Moussa, Al-Essa, Al-Othimeen, & Al-Saud, 2014). Another study by Kharraz et al. (2016) confirms the previous findings by indicating shortcomings and inadequacies in the level of competency among students in Saudi Arabia. In addition to competency level, the research ability level is also subpar in Saudi Arabian undergraduate students (Kharraz et al., 2016). The reason for this lack of interest and ability has not been clearly suggested by these studies; however, there are various factors that might be related to students' inability to participate in research opportunities.

A study by Allamnakhrah (2013) stressed the importance of critical thinking while making educational reforms in order to improve the quality of the education system in Saudi Arabia. The research included a quantitative analysis which highlighted a high level of rote memorization in Arab Open University and King Abdul Aziz University (Allamnakhrah, 2013). Rote memorization is a technique to memorize something by repeating it an adequate number of times. It implies that the education system in Saudi Arabia needs improvement because students are solely being prepared for examinations. Critical thinking is not being taught even though it is a necessary skill, as it is the basis of research work. Research involves analysis of the arguments, presenting suggestions via reasoning and solving problems and making decisions; thus, all of these skills are necessary for undergraduate students to acquire (Lai, 2011).

The study by Allamnakhrah (2013) found that students mostly held negative views about their education system, finding their teaching approaches boring and uninteresting. The students also claimed that the course curricula focused more on the quantity of the material than the quality of the material. The teaching approaches used in Saudi Arabia are outdated and inefficient. It can be concluded from these findings that Saudi Arabia's education system is not targeting the international standards for improving their education system; rather, they are only preparing their students for examinations through rote memorization and other outdated methods of teaching.

Challenges in Student Education at the College Level

Research has indicated more than one reason for the poor and unsatisfying performance of college students in Saudi Arabia regarding research development skills and execution. Alshehry (2014) pointed out several challenges that exist, such as limited access to knowledge-based resources and failure to emphasize research knowledge and skills as preconditions for college students. A study conducted by De Wit et al. (2014) mentioned that development of research skills is affected by both personal and institutional barriers. These barriers seem to have a negative impact upon the learning ability of college students that subsequently results in a negative effect on their educational performance.

The institutional barriers have been mentioned by Kujan et al. (2015) and Rachdan (2015), whose studies suggest students' inability to access academic resources and effective student training facilities contributes to poor academic performance, high failure rates and low grades among college students of most Saudi Arabian universities. Additionally, a lack of attention by the teachers toward students' questions and concerns was noted; poor web-based facilities have also tempered the communication between students and teachers. Atkins and Brown (2002) explained that students face challenges in choosing and defining a research topic as they are not able to narrow down their scope without the teacher's help.

Head (2007) identified that students face challenges in accessing resource materials, are unable to narrow the scope of research topics and make them manageable (59%) and become overwhelmed by the overabundance of resources available to them (60%). Furthermore, about 85% students were aware they lacked knowledge and information to conduct a research. The research of Al-Hattami et al. (2013) states that lack of information and training by professors in Saudi Arabian colleges is a major barrier to research skill development of college students.

Feldon et al. (2011) and Tenopir et al. (2013) found that educational curricula, course material and credits, lack of interest by the students and negative attitudes toward curricula are also significant factors. Mismanagement by institutions has contributed to disinterest in students for research development and execution. On the other hand, Feldon et al. (2011) argued that mandatory learning initiatives and teacher training increase graduate students' interest in developing research-based skills. However, other institutional barriers seem to have low or no significance and only moderate effects on students' ability to conduct a research (Gilmore & Feldon, 2010; Meerah et al., 2012).

As far as personal barriers are concerned, lack of interest and management has led to low or no research competencies among college students (O'Clair, 2013; Tenopir et al., 2013). Cumming et al. (2009) and Meerah et al. (2012) confirmed that management and communication skills are very crucial for research competencies and abilities to conduct and compile a quality research. Similar investigations by Alrabai (2016) also confirm that learning barriers also affect the learning process, leading to unsatisfactory and poor performance among college students. Other factors include overcrowded classrooms, lack of instruction by teacher and no supervision of students, ineffective teaching methods and low technological infrastructure or curriculum.

Gilmore and Feldon (2010) and Meerah et al. (2012) found that challenges such as knowledge of statistical skills, communication skills, problem solving, avoidance of critical researches and time issues led to lack of research-based skills among college and undergraduate students. Further, personal barriers such as negative behavior and views addition to ignorance of students toward complicated researches were strongly significant. This indicates that students themselves are to be blamed for their lack of effort and ignorance toward development of research skills and execution.

The above studies have stressed students' ability play a greater role as compared to institutional challenges in lack of research-based skills. Thus, the relationship between the personal and institutional challenges and the level of research skills among students in Saudi Arabia seems to be imperative and noteworthy. The education system needs to be reformed to focus on research skills development for students and gaining the best results when it comes to overall quality of education, so as to match the international standards of education. The international standards for the educational system are not being fully met by Saudi Arabia. The education system might have improved compared to the past, but the essential educational needs are still not being met.

Methodology

A survey was designed corresponding to the purpose of this research. The survey is organized into three parts. The first part contains questions about the opportunities for scientific researches; the responses are in the form of a Likert scale from 1 to 3, Disagree to Agree, respectively. The mean, medium and high averages are set as 1 to 1.66 for mean average, 1.66 to less than 2.32 as medium average and 2.32 to 3 indicates a high score. The second part consists of the factors determining the research ability, requisite research competency, institutional challenges, and personal challenges. This part also uses a Likert scale format for responses from 1 to 5, strongly disagree to strongly agree, respectively. The mean average for these scales ranges between 2.33 to 3.66 whereas the ranges for high score are 3.66 to 5. A quantitative analysis was conducted on the collected data using statistical procedures. The collected data was numerically coded via MS Excel and converted to SPSS spreadsheet format. The participants were included in the study after their consent was recorded; their personal information was kept confidential.

Reliability of the Instrument

To examine the reliability of the developed instrument, the researcher used Cronbach's alpha to measure the stability of the measuring tool. At the independent and dependent variables with all dimensions level, the Cronbach's alpha was as shown in the following table:

Table 1.**Coefficient of internal consistency of Cronbach's alpha**

Variables	Dimension	Internal consistency
Research Skills	Research opportunities	.81
	Ability	.85
	Efficiency	.76
Challenges	Institutional Challenges	.82
	Personal Challenges	.80

The results showed that all the values of Cronbach's alpha for the selected constructs are acceptable, as they range from 0.76 to 0.85: research opportunities (0.81), research skills ability (0.85), research skills efficiency (0.76), institutional challenges (0.82), and personal challenges (0.80). Overall, it was found that the values of composite reliability are acceptable (more than 0.70). Looking at these results, it can be said that the reliability assumptions are fulfilled because all values exceeded the minimum cut-off point of 0.70 as recommended by Daud et al. (2018).

Sampling

About 95 undergraduate students belonging to Najran University in Saudi Arabia were included in the sample population for the study. These students were in their last undergraduate years. Of the 95 participants, 33.7% (32) were male and 66.3% (63) were female. Among the participants, 54.3% were enrolled in humanities and educational related fields, and 45.5% were enrolled in science-related fields. The demographic profile of the participants was considered in the study for it to be more diverse.

Table 2.

Frequencies and Percentiles according to study variables

Variable	Categories	Frequencies	Percent
Sex	Female	63	66.3%
	Male	32	33.7 %
Major	Educational and Humanities	52	54.7 %
	Science-related studies	43	45.3%
	Total	95	100%

Research Findings

A detailed presentation and discussion of the study's findings follows:

To answer the first question, "**What is the availability of research opportunities among college students at Najran University?**" the mean and standard deviations were calculated for the study sample at the level of each item, as explained in the following table.

Table 3.
The means and standard deviations for the availability of research opportunities

Item No.	Rank	items	Mean	SD	Level
1	4	University provides adequate research opportunities for students to participate in research papers.	2.03	.67	Medium
2	1	University requests a research paper be prepared by each student at all levels.	2.65	.71	High
3	6	Research methods are applied in a sufficiently practical way.	1.64	.83	Low
4	3	Doing the research required by the university improves your learning process.	2.33	.88	High
5	2	I think I need to develop my research skills to improve my academic performance.	2.39	.85	High
6	5	The University imposes disciplinary sanctions when submitting a stolen research paper or written by someone else.	2.04	.71	Medium
		Total	2.18	.34	Medium

The results shown in Table 3 indicate that the average overall availability of the research opportunities among the college students in Najran University is at medium level ($M = 2.18$ and $SD = 0.34$). The results show that the items 2,5 and 4 have a high degree of approval as compared to the others. Item (3) has a low degree of approval. The findings of the study indicate that the students in Najran University have adequate exposure to research development opportunities, but their ability level seems to be low. The students are required to make extra effort to participate in high quality research work. It is thus recommended the students gain more skills through learning and training; also, their writing skills should be improved as they need to know how they can

induce teaching in a practical manner that will lead to improve their writing skills. Thus, institutions should arrange workshops and seminars to increase awareness regarding the importance of research-based skills. The students must understand that the education system highly appreciates a good quality research paper. Furthermore, it is very important that students are aware of the penalties for plagiarized work and poorly written research papers.

These findings agree with those of the Abdulrahman study (2016) that showed the quality of education in Saudi Arabia has improved and has adequate research infrastructure, but still lacks opportunities. Moreover, the studies by Al-Ghamdi, Moussa, Al-Essa, Al-Othimeen, and Al-Saud (2014) and Al-Hilali et al. (2016) found that students in Saudi Arabia are less interested and less motivated when it comes to participating in research work. Less than half of the students displayed positive attitudes toward taking an initiative in research work. This implies that more than half of the undergraduates in Saudi Arabia are less interested in participating in activities related to research-based skills. The studies also suggested that the students are reluctant and less motivated to participate in the research opportunities provided by the institutions. This confirmed that some institutions in Saudi Arabia provide adequate exposure to research-based activities, but the students are less motivated and less interested in participating in research-based activities. Thus, the research courses should focus more on the practical research methods. It can be recommended that the assimilation of increased writing practices within the curriculum through informal activities would boost the academic and research writing skills among the students.

the second question was: **"What is the level of research skills acquired by college students at Najran University?"** To answer this question, the researcher computed the means and standard deviations for the level of acquired research skills in research ability and competence as explained in the following table:

Table 4.

The means and standard deviations of the level of research skills acquired by college students at Najran University.

No.	Rank	Item	Mean	SD	Level
1.	5	Effective listening	3.23	1.09	Medium
2.	3	Reading and understanding	3.64	1.03	Medium
3.	7	Critical thinking	2.76	1.01	Medium
4.	4	Judgment and decision-making	3.34	.91	Medium
5.	2	Know basic research methods	3.69	.95	High
6.	6	Complex problem solving	2.86	1.07	Medium
7.	1	Select the search title	3.82	.96	High
-	-	Research skills ability overall	3.33	.60	Medium
1	5	Dependability	2.75	1.05	Medium
2	6	Attention to detail	2.67	.96	Medium
3	7	Scientific integrity	2.54	1.09	Medium
4	1	Cooperation and initiative	3.94	.86	High
5	4	Stress tolerance	3.34	1.08	Medium
6	3	Adaptability / flexibility	3.75	.86	High
7	2	Stability and persistence	3.82	.94	High
-	-	Research skills competence overall	3.25	.49	Medium

Table 4 shows that a medium level of overall research skills and the research competence required were $M= 3.33$ and $SD = 0.60$; $M = 3.25$ and $SD=0.49$, respectively. The results correlate with the findings of the study conducted by Kharraz et al. (2016) that there are shortcomings among the levels of competency and research abilities of Saudi Arabian undergraduate students that make them reluctant to participate in research.

For research skills, the findings of the study reveal that the college students have the ability to select research topics; they also know how to choose among the research methods for conducting a study. However, the students don't have an adequate ability to critically solve the research problems; improvements are needed in this area. The results agree with a study done by Allamnakhrah (2013) on the necessity for educational reforms based on critical thinking, which helps elevate the quality of education. Critical thinking serves as the basis of research owing to its

composition of analyzing arguments; presenting inferences using inductive and deductive reasoning, problem solving, and decision-making skills leads to elevating the quality of education. Moreover, studies by Abbas (2009) and Asiri (2012) indicated that universities are working to make students display their scientific research potential by collecting information and scientifically presenting it in a clear framework that conveys the competence of the students in following the correct methods and steps for scientific research.

Regarding research skill competencies, according to the students surveyed, skills such as cooperation and initiative, stability and persistence, and adaptability/flexibility showed the highest levels of acquired competence. However, scientific integrity and attention to detail were found to be the lowest acquired skills for the students. This indicates that college students have scientific research competence and ability strategies but adopt only a dependent cooperation and initiative with researchers to develop their research skills. However, factors such as dependability and scientific integrity are identified as requisite for research competence under scientific research proficiency.

Research question 3 asks what is the relationship at the level of significance ($\alpha \leq 0.05$) between research opportunities and institutional and personal barriers among college students in Najran University?

To answer this question, Pearson's correlation coefficient was calculated and the results are shown in the following table.

Table 5.

Pearson's correlation coefficient of the relationship study variables

Research Opportunities	Institutional challenges	Personal challenges	Total
Total	.166	.204*	.224*

* Statistical significance at the level of (0.05 α)

The results shown in Table 5 indicate that the correlation relationship between institutional and personal challenges and research opportunities was significant, as the value is less than 0.05. Specifically, there is a significant relationship between research opportunities and personal challenges. The value of the personal challenges is higher than institutional challenges, which shows that personal challenges are comparatively more significant than institutional challenges, in relation to research opportunities. The conclusion, then, based in these findings, is that institutions particularly are not to be blamed for the lack of resources or lack of research-based opportunities for the students. However, the fact cannot be ignored that there is lack of resources in institutions of Saudi Arabia, even though it has been confirmed by the literature review that students have adequate amounts of research-based opportunities, but their ability level is questionable. The research found that students need to increase their performance and ability by being involved in research development training opportunities provided by the institute. The studies imply that students are not taking a keen interest in developing their research, nor are they attending the workshops or seminars arranged by institutes for them.

Additionally, a significant relationship exists between personal barriers and research opportunities, indicating that students resist participating in research opportunities due to personal barriers. The findings also confirmed that personal skills such as communication and management skills are very necessary for students toward the development of research competencies and abilities, as discussed by O'Clair (2013), Tenopir et al. (2013), Kiley and Thomas (2009), and Meerah et al. (2012). Personal barriers seem to play a greater role than organizational barriers, thus students are required to make an extra effort in order to increase their academic performance along with scientific research based skills. If students work harder to develop their personal skills as mentioned above, the likelihood increases that they will improve the quality of writing on research papers and be able to conduct a research properly.

Question 4 was What is the relationship between the research skills acquired (the research ability and the research competence) and the institutional and personal challenges?

Table 6.

Pearson's correlation coefficient of the relationship between research skills and each of its dimensions, institutional and personal challenges and each dimension

Research skills acquired	Institutional Challenges	Personal Challenges	Total
Research ability	.258*	.286*	.329*
Research competence	.299*	.424*	.438*
Total	.316*	.398*	.433*

*** Statistical significance at the level of (0.05 α)**

Table 6 displays a significant correlation between research ability, research competency and institutional and personal challenges. A statistical significance of 0.433* has been noted among these factors. The statistical value for personal barriers seems to be higher as compared to the institutional barriers; the values for both are 0.398* and 0.316*, respectively. This value indicates that personal barriers seem to play greater role than institutional barriers. In other words, there seems to be an adequate amount of evidence to suggest that personal challenges such as writing skills, communication skills, lack of time, difficulties in research and other factors have greater roles in influencing student's ability to conduct a research.

These challenges play a role in making the task challenging. Cumming, Kiley, and Thomas (2009) and Meerah et al. (2012) also claimed that communication and management skills are very necessary for the development of effective research competencies and capabilities in students. This seems to be true for correlation between institutional challenges such as lack of resources on campus, lack of Internet access and students' ability to conduct research, though a weak relation exists compared to research competence.

The table also displays that institutional challenges have a comparatively stronger association with research competencies than research ability (the statistical significance has been found to be 0.258* among the two). The research ability in this matter has less significance, with a value of 0.299*. Similarly, the personal barriers are more significantly associated with research competencies (with a statistical significance of 0.424*) than research abilities (with value of 0.286*). This suggests that institutional and personal factors that act as challenges to acquiring research skills are more important for research competencies than the ability to conduct a research paper. The literature review also supports these findings because research outcomes by De Wit, Heerwegh, and Verhoeven (2014) revealed that development of research skills is affected by both the personal and institutional barriers. The study links the two by suggesting that institutional barriers have adverse affects on the students' personal skills, thus leading them to be inefficient. This as a result has a negative impact on students' writing research papers as well as their academic performance.

Furthermore, high significance was found for personal barriers such as negative attitudes by students toward complicated researches; this suggests that college students are equally or somehow more responsible for their poor personal skills affecting their ability for scientific research. Institutional barriers are found to have low significance, or it can be said that institutional factors moderately impact students' research skills (Gilmore & Feldon, 2010; Meerah et al., 2012). The personal barriers, on the other hand, play a much larger role in influencing the development of research skills and thereby impacting college education preparation among college students at Najran University.

Conclusion

The purpose of this research was to investigate and determine the factors that affect the acquisition of research-based skills in students of Saudi Arabia. The responses from the survey were analyzed for the results. It has been found that student ability plays a greater role in affecting the acquisition of research skills. The research finds that institutions provide adequate exposure to research opportunities; however, the students in Saudi Arabia are reluctant to participate in the research-based opportunities.

The student's inability to participate in research-based activity has been linked with institutional challenges and personal challenges, with a greater impact from personal challenges. Further, a significant link was seen among personal challenges and institutional challenges and research competency in the students of Najran University. It has been confirmed through responses gathered by survey that not only are institutions to be blamed for students' inability to participate in research work but also personal challenges. However, the literature review suggests that the education system of Saudi Arabia needs improvement when it comes to research infrastructure. The students are being taught using traditional methods, which are found to be boring and unchallenging by the students in Saudi Arabia.

The educational system in Saudi Arabia is viewed negatively by the students; this perception needs to be changed and for that, educational reforms by the government must be undertaken. The rote-memorization technique should be avoided, and students must be made aware of the significance of research skills in the professional world. The students must be involved in workshop trainings and seminars to increase their motivation level, in addition to reforms that might alter students' negative perception of the education system of Saudi Arabia. Most importantly, this study suggests that students must make an extra effort to participate in the research opportunities provided by the institutions. The students must work hard to increase their academic performance in addition to acquiring research-based skills.

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