

# **FACULTY MEMBERS' KNOWLEDGE DEGREE REGARDING RESEARCHGATE WEBSITE AND THEIR ESTIMATIONS FOR ITS EFFECT ON THE DEVELOPMENT OF SCIENTIFIC RESEARCH SKILLS OF INSTRUCTORS AND GRADUATE STUDENTS AT THE UNIVERSITY OF JORDAN**

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## **Abstract**

The current study aimed at exploring the awareness level of faculty members regarding ResearchGate website and the estimation of its effect on developing their research skills, and that of post graduate students at the University of Jordan. To achieve objectives of the study, the researcher developed research instrument, consisting of 28 items and two open-end questions. To answer questions of the study, averages, T-test and analysis of variance were calculated. Sample of study consisted of (135) members of faculty members.

Results implicated that unawareness level of the website by most faculty members was the basic barrier for not using it. Best benefits of using ResearchGate were found to be: interacting with other researchers and being informed with the latest published studies for researchers of similar interests or discipline. Results also revealed differences in developing research skills, in favor of frequent visitors of the site, and those who interact with introduced raised issues. Obvious statistical difference was in favor of faculty members at scientific faculties, to be the most frequent users of the website. According to results, the researcher recommended that the university should provide the necessary infrastructures to help more teaching staff with access to the website, and urge teaching staff for paying more effort to utilize the website, which as a result proved to be of academic benefits for all interested parties.

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**Keywords:** Faculty members, the University of Jordan. ResearchGate, research skills

## **Introduction**

Technological development and knowledge outbreak led to increase global and local interests in the field. Accordingly, new technological concepts emerged along with a variety of websites, among them social websites. This technological development directed researchers and the workers in the field of education towards employing several forms of technology, and benefitting from them in all aspects of life to achieve the desired cognitive, social, and recreational objectives.

Nowadays, Internet has become the center of change, because it empowers individuals to communicate with others and exchange, retrieve and transfer information without human intervention (Sari, 2005). What distinguishes such media is the independent work of the user to reach any wished data, which means that participation between the user and Internet allows the user to send and receive information (Al Shdeifat, 2009).

With a progressive, wide use of the Internet and the emergence of new fields each single day; there's a growing interest to use Internet in education, where users can exchange e-mails and data files (Alheleh and Merei, 2011). Also, individuals from different countries can conduct seminars through Internet and interactive TV, which contributed to the emergence of a set of concepts that describe learning types such as: E-Learning, Online Learning, and distant Learning (Alshboul and Elyian, 2013).

Social Media Websites (SMW) like Facebook, Twitter, LinkedIn and others are widely spread among all population, and specifically among students and researchers, where there are no restrictions on interactive users of certain groups or disciplines.

Communities were constructed by SMW that provide mutual communication and exchange of different ideas and information, allowing for fast and wide transfer of information (Haigh, 2010). "Social networks" include Forums, Plugs, and Wiki. Social media websites achieve two main objectives in the educational field: supporting teaching and learning process and building society (Kear, Rosewell & Williams, 2012).

Internet also allows easy access to various SMW available to all interested individuals. There were also certain specific websites concerned with academic research such as: ProQuest, Dissertation Abstract International (DAI), EBSCO.

Recently, more specific websites were established, which were limited to worldwide researchers from different education and research institutions. One of these academic websites is ResearchGate website that was established in 2008 by three faculty members, two of them were from Physics Department, and the third one was from Computer Science Department.

A noticeable increased number of interested researchers are visiting this website, with a number mounting to 6 million worldwide researchers to the date 17/3/2015 and rising continuously with a daily subscriptions of almost 10 000 new subscribers from different countries. About 2 million studies and research topics are loaded each month. In five days, about 500 000 mutual communication between researchers were located. Among subscribers, there are 45 researchers and scientists who hold Noble Prize (<https://www.researchgate.net/about>).

Number of subscribers varies according to disciplines and countries. The website provides all aspects of knowledge, enables user to ask and answer raised questions and present his/her ideas and academic researches. Further, it allows individuals to review and critique others' research works by posting comments and notes. Researcher may also ask for, or provide help for other researchers seeking it. Furthermore, this website offers researchers with specialized and distinguished services that are rarely offered in other websites. Through this website, specialists answer raised questions, and researcher's points of view are evaluated and adjusted by other researchers, being displayed for interlocutors with similar specialization or interests ([https://www.researchgate.net/aboutus .AboutUs.html](https://www.researchgate.net/aboutus>AboutUs.html)).

The website has a vision that seeks to facilitate communication between researchers of different interests, or with similar concerns, provide opportunities to enhance studies for any researcher by presenting his/her idea to be circulated among researchers and express their views and suggestions to improve research. The website includes more than 67 million summaries, and more than 14 million complete studies. The users of this website are from 193 countries, with free membership to members of the website, and the website is managed by 120 employees. ([https://www.researchgate.net/aboutus .AboutUs.html](https://www.researchgate.net/aboutus>AboutUs.html)).

Because subscribers of the website belong to accredited educational institutions or research centers; as the account of the user is based on the institution, university or research center. Users exchange views on fundamental and specialized research issues and raise questions in different fields of knowledge. Researchers from various educational institutions or research centers are expected to be highly informed about the website; especially since opening an account does not require a fee, or any certain official correspondence. Based on the previous knowledge , the current study is concerned with the faculty members' knowledge regarding Research Gate website and their estimations for its effect on the development of scientific research skills of instructors and graduate students at the University of Jordan.

## **Research Problem**

Using social networking is no longer limited to recreational aspect, but rather employs various aspects of life, while some users focus on recreation time, others are concerned with business. In the last decade, a great interest was directed towards education, with the emergence of social networks used by researchers at universities, or worldwide educational and research institutions. It appears necessary to explore how well researchers are aware of such websites, and to investigate its effect on their research skills. These websites compete with other specialized academic websites offered at universities and scientific research institutions, which provide all avenues of scientific research.

The current study attempts to answer the following questions:

- 1- What is the degree of knowledge of faculty members at the University of Jordan about ResearchGate website?
- 2- What is the effect of using ResearchGate Website, by faculty members, on the development of scientific research skills from their viewpoints?
- 3- What is the benefit that graduate students could gain from visiting ResearchGate website regarding the development of their scientific research skills from the perspective of faculty members?
- 4- Does the use of ResearchGate Website differentiate depending on the following variables: Gender, academic rank, experience, and the type of college?
- 5- What are the most important obstacles that prevent faculty members from using ResearchGate website based on their viewpoints?
- 6- : "What are the most important benefits that faculty members could gain from using ResearcGate website based on their viewpoints?

## **Purpose of the Study**

The study aimed at defining the level of awareness of the ResearchGate website by faculty members, and exploring their estimations of the effects of using this website on developing their research skills, also, this study aimed to draw the attention of researchers and faculty members to research topics and issues posed by researchers who interact through this website. This enhances forms of communication and participation of other researchers, as to enhance research cooperation and thus is reflected on the image of the university among abroad researchers.

## **Research Importance**

The study might contribute partially in increasing interactive relations of faculty members at the University of Jordan with colleagues of worldwide universities, hence; the study helps to realize the mission and vision of the

University of being an international one, and reflecting a good world image among other universities. The interactive communication of faculty members might also increase the chances of representing the university globally, which contribute to an increased rate of visits to the university and improve progress on its international ranking.

### **Limitations**

This study was limited to faculty members and researchers at the University of Jordan in the second semester of the academic year 2014/2015, generalizing the results of the study depends on the size and nature of sample, and study instrument and its psychometric features of reliability and validity.

### **Research Variables**

Independent variables: There are three independent variables:

1- Specialization of the student-teacher which has two levels: the classroom teacher, and early childhood education.

2- AGSSCE: Average in General secondary school certificate examination. In this study it has three levels: less than 75%, from 75% and less than 85%, and more than or equal 85%.

3- CA: Cumulative Average at University: the total cumulative average the students have at university level. For the purpose of this study it has three levels: less than 2.0 points, from 2.0 and less than 3.0 points, and more than or equal 3.0 points.

The dependent variables: there are two dependent variables: 1) the context of practicum practices, and 2) the challenges faced by student-teachers during practicum.

### **Research Procedural Definitions**

**ResearchGate website:** A website is available on Internet shared by a group of worldwide researchers of various disciplines and interests. To open the account, a user is required to belong to a research center or any academic institution. The website is intended for communication between students and faculty members as researches at universities, staff at scientific research centers.

**Users of ResearchGate:** Faculty members and researchers at the University of Jordan, who own an active account on the ResearchGate website, through using the server of the University of Jordan or that of other academic institution the researcher relates to. Their average will be measured by number of respondents on the study instrument constructed for this purpose.

**Research skills:** The skills a researcher must possess while conducting authentic, scientific research. In this study, such skills are

measured through averages of Faculty members' responses to items of the instrument.

**Type of college:** the cognitive branch of colleges distributed into Medicine, Engineering, Sciences, and Humanitarian colleges.

**Faculty member:** They are faculty members at the University of Jordan from various academic disciplines and different rankings of all faculties and deanships of the university.

**Obstacles to the use of ResearchGate:** conditions and applications that prevent researchers' access to the site, or limit their use and benefit from it.

### **Theoretical background**

Social networking started in the late nineties, starting with the website 'six degree" which enabled users to upload personal files on the website, comment on news, exchange messages and persona audio and video files, as in (facebook) and (myspace) (Alhelalat, 2013).

Some networks are related to the business world, connecting people belonging to the same profession, businesses and companies' owners, including personal files of the users, among them, such as (LinkedIn). Other sites provide extra feature like micro blogger as in (twitter). Social networks helped by solving educational problems through interactive participation of experts concerned with the learning-teaching process. It also attracts learners to be more active learners (Alenezi, 2013), and contributes to increase cooperation between students and teachers, as well as among students themselves to enhance exchange of ideas (Abu Seilek, 2012).

What distinguish ResearchGate website is its specialization and presentation of scientific research on one hand, and on the other hand, helping specialists and novice researchers to exchange experiences with other expert researchers, which make it of special importance for graduate students. In addition to the fact that such specialized website are not so popular as other public ones, which makes it limited to experts who focus deeply on mutual problems.

It is worth talking about ResearchGate, when mentioning specialized networks, while it represents a database, established in Germany in the year 2008 by two doctors and a computer scientist. After five years of launching the website, number of subscribers mounted to 2.9 million researchers using the website to present themselves, their research, contributions, cognitive and research interests and their various skills. The credibility of the website is obvious through its commitment to documentation of scientific researches and studies. It also declares the impact factor of the magazine, and introduces a number of services like mutual consultation and communication among researchers worldwide, posting researches and ease access to researches of

others, loading statistics about different points of view, and getting answers to raised questions from a group of experts and interested parties, and enables subscribers to search for a job. (<https://www.researchgate.net/aboutus>AboutUs.html>).

## **Literature Review**

Due to the importance of social networking in students' daily life, and the fact that it's spread widely; social networking receives attention on the Arab and international levels, that several researches and studies were conducted.; some of which aimed to evaluate or define the students' attitudes towards it, others aimed at defining their advantages and disadvantages on the academic life of students. Following are some previous studies, which dealt with related social networking topics.

Khader conducted a study (2009) aimed to define the motivations that drive Egyptian youth to use Facebook, and list activities performed by them on the webpage. The sample consisted of (136) university youth users of Facebook, (68) from University of Cairo and (68) from the British University. Results concluded that the most basic motives to use Facebook were as follows: for leisure and entertainment 75%, creating new friendships 48.5%, self-relieving 19.1%, and communicate with others 42.6%.

Abu Seilek(2012) conducted a study aimed to examine the effect of electronic social networking on the trends of students at the University of Jordan. The sample included (75 923) male and female students. Results revealed that students were motivated mostly to present themselves the way they like, give others the image they believe is ideal, to exchange personal and public information, to maintain close relationships with friends, to promote new friendships, leisure and entertainment through interactive games, or through social interaction and getting news and information.

Numar's study (2012) aimed at exploring the effect of using social networks in social relationships. The sample consisted of (280) Facebook users in Algiers, results pointed out that the males were more frequents users of Facebook than girls, and tend to spend more time using it. The motivations for using Facebook were as follows: communicating with friends and family members, to be well educated, to get information and knowledge, and for leisure and recreation.

As for Alshary's study (2013), it aimed at exploring use of Facebook by Saudi's secondary schools students and its effect on their academic achievement, through identifying how they use it, duration of use and its effect on students. The sample consisted of (400) male and female students. Results showed that 67% of them don't use Facebook for purpose of study, 78% students believe that Facebook adversely affect their achievements. The study results revealed that secondary school students of

Saudi Arabia use Facebook mainly for leisure, entertainment and communicating with friends.

The study of Shan and Khalifa (2010) aimed to identify the use of Facebook among university students in the United Arab Emirates, with a focus on the differences in the nature of the use between males and females. The study sample consisted of (128) male and female students. (70) Students responded to them, (35) males, and (35) females. Results showed that the most important motive to use Facebook was to strengthen the relationship with friends and relatives, and the main reasons that prevent them from expanding their social networks were loss of confident in unfamiliar users.

Hart (2011) conducted a study that aimed to examine the motives of secondary school students and university students to use the Facebook. The sample included (363) students from the mid-Atlantic university, and two secondary schools. Results revealed that the diversity of motives for the use of university students to Internet. % 84.3% of students used Internet mainly for e-mails. What motivated secondary school students to visit Facebook was to spend time and keep relationships. Also, the number of facebook friends of secondary schools students surpassed those of university students' friends. The most prominent motivation for university students to use facebook was to maintain relations.

The study of Hilton (2011) aimed to examine the effect of the use of Facebook on academic achievement. The study sample consisted of (199) male and female students; (89) male and (110) female students. Results found that students tend to believe that Facebook is part of their social life. The study supports the hypothesis that the habits of using Facebook can have a negative effect on students' cumulative average, and if you use Facebook as a mean of communication (chat), it consumes more time, which significantly affects the cumulative average. It was noted that cumulative average wasn't affected when Facebook was considered as a way to contact friends only.

The aim of Nejadat's (2014) study was to identify the Jordanian family uses of Facebook, their motives, and desires fulfilled by this use. A questionnaire was applied, which consisted of 14 questions, on (218) employee at the university. Results showed that (65.5%) of the respondents have a personal account on Facebook, and their motives were: contact old and new friends, enjoy entertainment and leisure time, and increase knowledge and access to the latest local and international events. The study also revealed that social contact fulfillment of respondents surpasses other interests with an average of (3.19) on the quadruple scale, when they use Facebook, which demonstrates the importance of this site to keep people in touch and interact with each other.

The aim of Alsawir's (2014) study was to investigate the motives of using facebook by university and school students. The study was applied



on 1200 students, distributed evenly over university and school students, who were chosen through stratification approach. Results revealed that "fun, entertainment, leisure time and follow events" were the prominent motivations for university students to use Facebook, and that was in favor of male students. While the main motives for school students to use Facebook were "searching for information, doing research and getting acquainted to modern technologies." University students used Facebook more frequently than school students, to follow-up developments. Results also showed an inverse correlation between the academic achievement of students and the motives of their use of social networking site Facebook for the purpose of entertainment and communication with friends and follow developments.

### **A commentary on the previous studies:**

By reviewing the above previous studies, I, as a researcher, noticed a common focus on social networking websites specially Facebook, and addressing the use of Facebook among university students in the United Arab Emirates, the nature of their use, motivations of Facebook use by secondary school students and university students, habits of this use, and its impact on their academic achievement. What distinguishes this current study, is that, as far as the researcher is informed, was the fact that it deals with a new website that wasn't discussed before in the local area, the selection of faculty members as representatives of the sample, the nature of the website itself, being a specialized website for researchers or academics, the nature of issues raised on the website and the information uploaded to it.

### **Methodology**

The current study approached the survey method, along with the analytical descriptive and qualitative method to be in consistency with their purposes.

### **Participants**

The study population consisted of all faculty members and researchers at the University of Jordan, reaching up to (1628) faculty member (Statistics of the University of Jordan for the year 2012/2013). With the support of the administration of the university, the study instrument was posted electronically to all faculty members and researchers, with 135 responses, which represent (8.3%) of the study population.

### **Instrument**

To achieve purposes of the study, the researcher developed a study instrument that consisted of (30) items. Answers of each item ranged between two to four alternatives, and included two open-ended questions,

where respondent was inquired about the obstacles and benefits of the website.

Items of the instruments were distributed into four categories:

**First category:** concerned with demographic information.

**Second category:** concerned with identifying the level of awareness of faculty members with ResearchGate website, represented through (12) items.

**Third category:** the importance of ResearchGate website for graduate students, represented by (16) items.

**Fourth category:** concerned with advantages gained by using ResearchGate website, and obstacles of using it, represented by open-ended question 29. 30.

### **Validity**

The initial copy of the questionnaire was displayed on a group of arbitrators from faculty members in Technology of Education, Measurement and Evaluation Departments at Jordanian universities. They were asked to determine the suitability and clarity of the items, adequate language, and if items were related to categories. They were also asked to make any adequate adjustments or proposal to items. Proposed amendments were carried out in light of the arbitrators' observations approved by more than 80% of them. After making the necessary amendments, the final form of the questionnaire consisted of (30) items.

### **Reliability**

To check reliability of the instrument, Cronbach's alpha coefficient was used for internal consistency, so that the tool was applied on a prospective sample consisting of 30 faculty members from outside the study sample. Cronbach's coefficient alpha for total field was (0.91), and Cronbach coefficients alpha for sub fields ranged between (0.84) and (0.87).

### **Statistical Treatment**

Descriptive statistics and inferential, analytical statistics were used to answer questions of the study. Qualitative analysis was also used to answer the fifth and sixth questions of the study. Descriptive statistics were used, specifically, to answer the first question of the study.

To answer the second question of the study, items 4 and 12 were used for the independent variable "use of the website". While items 13 to 20 related to the dependent variable "developing research skills of faculty member" and to identify the differences T-test was used.

Descriptive statistics were used to answer the third question, where items 21-27 represented "advantages of using the website by students, from the viewpoint of the faculty members.

The fourth question was related to the independent or taxonomic variable (sex, academic rank, years of experience, and type of faculty), while items 13- 20 represented the dependent variable "developing research skills of the faculty member". To define the significance of differences, variance analysis One Way ANOVA and T-test were used. I performed Scefte test For dimensional analogies, to be able to identify attributes of differences. To answer the fifth and sixth questions of the study we performed an analytical process for the two open-end questions to identify themes.

## Results and discussion of the study:

### Results related to the first question:

To answer the first question: What is degree of knowledge of faculty members at the University of Jordan about ResearchGate website? Averages and frequencies were calculated as seen in table of results (1).

Table (1) frequencies and averages of the responses of the sample on the items related to the participant's awareness of Researchgate website \*

Item	Response	Frequency	%
Have you heard about the website before? If yes continue to the following questions.	No	15	12.6
	Yes	103	86.6
How did you find out about the website?	From university	35	29.4
	From a colleague	51	42.9
	Accidentally	25	21.0
Do you have an account on the website?	No	32	26.9
	Yes	85	71.4
Do you think the information available on the website is characterized by modernity?	No	5	4.2
	Yes	89	74.8
Is the information available on the website reliable?	No	10	8.4
	Yes	87	73.1
Is the information available on the website well organized, and easy to interact?	No	15	12.6
	Yes	80	67.2
Does the website have a search engine that enables you to access content easily?	No	20	16.8
	Yes	77	64.7
Does the website offer the possibility for researchers to communicate with individuals that manage the website?	No	19	16.0
	Yes	80	67.2
Do you follow the process of the continuous development and modification of the site?	No	47	39.5
	Yes	55	46.2
Do you expect the average of interactive participants from education discipline exceeds other disciplines.	No	47	67.2
	Yes	55	14.3

\*The word website in the table means ResearchGate.

To be well informed about the awareness of faculty members with ResearchGate website, there were three items to reveal their general knowledge about the website, then followed by 8 items that explore their deep knowledge (actual practice). Through reviewing the repetitions in table (1) we know that 103 participant have common awareness of the site with an average of (86.6%) of the sample, which is considered a high rate. Viewing the source of the participants' information about the site reveals that 51 of them knew about it from their colleagues with an average of (42.9%), and 25 of faculty members were accidentally informed with an average of (21.0%) with a total of (76) participant and an average of (63.9%), which implicates the necessity of the university to urge faculty members towards the use of the site, because it provides the opportunity for cooperation of worldwide researchers with common interests and exchange of experiences and perspectives among them.

When reviewing items related to deep information connected with practice and as seen in table (1), the finding indicated that (89) participant equals (74.8%) think that uploaded information is characterized with modernity, and approximately same number think the information is reliable. As for the items concerning organized information, easy to interact with, and offers possibility of communication between researchers with managers of the site, (80) participant answered with "yes" with an average of (67.2%). They pointed out that the site is organized, it also increases opportunities of communication and consequently being acquainted with different universities of the researchers, and reflects a better image of the university, which add to its ranking among other universities according to global classification. (55) Participant equals (46.2%) declared that they continue to follow developments on the site, and their observation of the ever growing researcher's number of similar disciplines or research interests, which proves the significance of the site for researchers.

### **Results of second question:**

To answer the second question: What is the effect of using ResearchGate Website, by faculty members, on the development of scientific research skills from their viewpoints? the item (what is the nature of your contribution on the website ResearchGate) is considered as an independent variable, and development of research skills as a dependent variable. To identify the effects, averages and standard deviations were calculated as seen in table (2).

Table (2) averages, standard deviations, and results of T-test

Level of use	No	Average	Standard deviation	Rate of freedom	T value	Sig.
I browse the site in general, but do not interact with inquiries	69	12	82.4	96	-4.302	0.000 *
I raise questions, ask about research issues or interact with raised questions	29	14	51.6			

\*Of statistical significance at ( $\alpha = 0.05$ )

Table (2) shows statistically significant differences between the averages, where t-test value for independent samples reached (- 4302), which correspond to the level of significance (0.000), and that is in favor of faculty members who interact and raise questions, inquire about research issues or interact with raised questions, with an average of (14. 172) compared with those who only browse the site in general (12.015).

This result was attributed to the ability of the site to attract attention of researchers for ideas or questions raised by other colleague researchers on specific research issues, or procedures of developing instruments and statistical processes that are required to conduct a study, prompting interested researchers of the same discipline to interact with these questions.

If we were to adopt the independent variable "number of times to visit the site," and its affect on the development of research skills of faculty member, then second question was answered by calculating averages and standard deviations using analysis of variance One Way ANOVA. Table (3) represents averages and standard deviations of the responses of participants.

Table (3) Averages and standard deviations of the responses of participants

Frequency of visits	No	Average	Standard deviation
Less than 2 times	60	11.72	2.86
3-5 times	23	12.70	1.96
Daily	19	14.63	1.30
total	102	12.48	2.68

Results displayed in table (3), showed clear differences between averages that represent the faculty members' visits to the website. To identify the significance of the differences, variance analysis ANOVA was used for independent samples, as seen in table (4).

Table (4) results of variance analysis of the effect of faculty members' visits to the website ResearchGate on their research skills.

Area	Source of variance	Total of squares	Degree of freedom	Average of squares	Value of (F)	Sig.
Number of visits to the website	Between groups	123.987	2	61.993	10.238	*0.000
	Within	599.474	99	6.055		

	groups				
	total	723.461	101		

\*of statistical significance at ( $\alpha = 0.05$ )

As seen in table (4), there are differences of statistical significance at the level (0.05), where value of (f) was (10,238) which met the level of significance (0.000). To identify the attributes of the differences, Scheffe test was used for dimensional comparisons, as represented in table (5).

Table (5) results of Scheffe test for dimensional comparison between averages related to number of visits to the website.

		Less than 2 times (11.72)	3-5 times (12.72)
Frequency of visits to the site	Daily (14,63)	-2.91491*	1,93593*
	3-5 times	-.97899	

\*Of statistical significance at ( $\alpha = 0.05$ )

Results of Scheffe test reveals that faculty members having daily visits to the website have developed their research skills more that those visiting it only twice or from 3 three to five times. This confirms the positive effect of the site on research skills of faculty members, which increase by more frequent visits to the site. Result may seem logical because researchers' frequent visits to the site enable them to view work and ideas of others and raised questions, which motivates them to connect with other researchers with similar interests or research perspectives. This connection might contribute to a form of cooperation with other researchers and thus develop research skills. Viewing the former analyzes, it's clear that visiting the site develops research skills of faculty member, whether they visit it frequently or raise questions or view raised questions.

**Results of third question:**

To answer the third question: "What is the benefit that graduate students could gain from visiting ResearchGate website regarding the development of their scientific research skills from the perspective of faculty members? descriptive statistics were used; where repetitions and averages were calculated. Results are shown in Table 6.

Table (6) Frequencies and averages of the responses of the sample\*

Item	Very high rate		High rate		Week rate		Very week rate	
	R	%	R	%	R	%	R	%
The Website benefits Graduate students	31	26.1	56	47.1	14	11.8	2	1.7
The Website develops student's research skills	21	17.6	53	44.5	25	21.0	3	2.5
The Website helped my students to identify research difficulties	8	6.7	38	31.9	36	30.3	15	12.6
I urge Graduate students to have an account on the Website	24	20.2	57	47.9	12	10.1	7	5.9
I talked to my students about having an account on the site	9	7.6	34	28.6	26	21.8	30	83.2
The Website provides my students with previous studies for their researches	17	14.3	46	38.7	23	19.3	12	10.1
Once my students are familiar with the Website, how much are they interested?	12	10.1	48	40.3	24	20.2	14	11.8

\*the word Website in the table refers to ResearchGate; **R** refers to Repetition

Results displayed on table (6) assured that ResearchGate site is fruitful for graduate students' research. 26.1% of the sample thought that the site has high beneficial effects on Graduate students, while 47.1% thought the effect was very high and only 1.7% considered the effect to be very week. As for the area of research skills, 44.5% thought that visiting the site develops research skills of Graduate students with a very high rate; while 17.6% consider this effect to be very high, 2.5% others think of the effect to be very week.

In addition, the results revealed that 40.3% thought that once be graduate students get to know the site, they are highly interested in it, while 10.1% will be very highly interested in the site, in contrast to 11.8% though that students' interest will be very week. This result correlated with the average of 83.2% of faculty members who stated that they talk to their students about the site, which justifies the high rate of students interested in the site after knowing of it. 38.7% though the site was of benefits for students, where they could view previous studies for their own researches.

This might be attributed to the availability of uploaded studies on the site that can be easily accessed and for free. Students may also have the opportunity to contact the authors themselves to ask for their studies.

Students also have the opportunity to inquire and raise questions concerning problems of their researches or to get more information from expert researchers.

#### Results of fourth question:

To answer question four: " Does the use of ResearchGate website differentiate depending on the following variables: Gender, academic rank, experience, and the type of college? Averages and standard deviations were calculated, and variance analysis was used to identify the significance of differences between the averages, following ate the detailed results.

Table (7) averages and standard deviations for the participants' responses according to their academic ranking.

Area	Level of variable	No	Averages	Standard deviation
Academic rank	Professor	37	12.14	2.888
	Associate professor	39	12.80	2.805
	Others	29	12.21	2.305
	Total	105	12.39	2.698
Years of experience	Less than 5 years	20	11.90	2.337
	5-10 years	35	12.54	2.801
	More than 10 years	50	12.48	2.787
	Total	105	12.39	2.698
Type of faculty	Scientific	30	13.50	2.501
	Humanitarian	60	11.82	2.690
	Medical and Engineering	14	12.93	1.900
	Total	104	12.45	2.636

Table (7) reveals apparent very little differences between averages of the sample responses according to their academic ranking. To identify significance of the differences variant analysis was used. Results are displayed in table 8.

Table (8) Analysis of one way ANOVA to identify differences between averages of the responses of participants according to their academic rank

Area	Source of variance	Total of squares	Degree of freedom	Average of squares	Value of (f)	Sig.
Academic rank	Between groups	8.984	2	4.492	.613	0.544
	Within groups	748.006	102	7.333		
	Total	756.990	104			
Years of experience	Between groups	6.025	2	3.012	.409	0.665
	Within groups	750.966	102	7.362		
	Total	756.990	104			
Type of faculty	Between groups	60.348	2	30.174	4.650	0.012*
	Within	655.412	101	6.489		



	groups				
	total	715.760	103		

\*of statistical significance at ( $\alpha = 0.05$ )

Table (8) shows statistical differences for the use of the site ResearchGate attributed to the variable of type of faculty, where no statistical significances were found related to the variables years of experience and academic rank. To identify the attribute favor of differences, Scheffe test was used for dimensional comparison as displayed in table (9).

Table (9) results of Scheffe test for dimensional comparison of averages of responses according to type of faculty

		Humanitarian (11,82)	Medical or engineering (12,93)
Use of the site	scientific	1.68333*	.571430
	Humanitarian		-1.11190

\*of statistical significance at ( $\alpha = 0.05$ )

Scheffe test results showed that faculty members at science faculties tend to use the site more than their peers of humanitarian, medical or engineering faculties. This result might be attributed to the fact that topics of researches of science faculties deal with issues that are more beyond the local or regional interest, because it addresses scientific issues, rather than social or cultural ones, which characterizes their use of the site to be global, and this in itself motivates the researcher to continue using the site.

As for the variable of gender and to identify the differences between the averages of responses, T-test was used for independent samples, and Table (10) displays results.

Table (10) results of T-test for independent variables of responses according to gender

Gender	No	Averages	Standard deviation	Degree of freedom	Value of T	Sig.
Male	74	12.5676	2.81912	103	1.040	0.301
Female	31	11.9677	2.37324			

Results in table (10) shows that there were no statistical significant differences between the averages for the use of the site due to gender, as the value of (c) (1.040) correspond to the level of significance (0.301). This result is due to the fact that both genders have approximate research concerns, and their preoccupation in administrative work may prevent a full-time research at the site.

**Results of the fifth question**

To answer question 5:" What are the most important obstacles that prevent faculty members from using ResearchGate website based on their viewpoints? The open-end question was analyzed and the perspectives of

faculty members, participating in the study, have been classified. As table 11 displays the obstacles pointed out by participants.

Table (11) Viewpoints of faculty members about the obstacles that prevent them from using the website ResearchGate

Obstacles of using the site ResearchGate	Frequency	%
Many colleagues are not informed about the site	10	17.2
The basic need for internet (weakness of search engine or internet)	8	13.8
Researchers do not upload their researches on the site	6	10.3
Researchers have little time to follow up their correspondence	6	10.3
The site is confined only to English language	5	8.6
There are other competitive engines to the site	5	8.6
The small number of the involved researchers	4	6.9
The site does not contribute to upload researches of researchers with accounts on it	4	6.9
Some loaded researches are excluded to abstracts	3	5.2
The large number of personal correspondence	3	5.2
Doubt or fear of incoming messages to be a source of hacking or spreading viruses	2	3.4
Is not adaptable to the needs of faculty members	2	3.4
Total	58	

viewpoints of faculty members as shown in table (11) indicate that the strongest obstacle that prevent the use of the site was " Many colleagues are not informed about the site ", as the percentage of those who see it was (17.2%), followed by the " The basic need for internet (week search engine or internet" with a rate of (13.8%) of participants. Third obstacle was," the researchers do not upload their research studies on the website". and "Researchers have little time to follow up their correspondence ", with a percentage of (10.3%). Ranking last of the obstacles were "Doubt or fear of incoming messages to be a source of hacking or spreading viruses" and "Is not adaptable to the needs of faculty members" with a percentage of (3.4%).

Reviewing these obstacles, researcher found that some of them might be due to lack of interest of the university to motivate researchers to participate in the site, as being a site that connects researchers from around the world. In addition to weakness of the university potential in infrastructure due to the financial issues of the University of Jordan in particular and all universities in general, where many of faculty members lack offices and independent electronic equipments and computer servers at the University suffer from frequent breakdowns, while some need ongoing reforms. Some obstacles were represented with small averages despite their importance; it might be due to frequent correspondences, which increase doubts of hacking or viruses, especially when most of their work is reserved on the device

without backup copies of them, which forms suspicion about their needs for the site.

### Results of the sixth question:

To answer question 6: "What are the most important benefits that faculty members could gain from using ResearchGate website based on their viewpoints? the second open-ended question was analyzed, and classification of faculty members' perspectives were classified. Benefits, as viewed by participants are displayed in table (12).

Table (12) Faculty members' viewpoints regarding the benefits they gain from using ResearchGate

Benefits of using the ResearchGate site	Frequency	%
Interaction with expert researchers from around the world	30	26.55
View published researches for researchers of similar discipline or interests	19	16.81
Openness to the world and viewing educational developments	11	9.74
Enhances researchers' competences of research	10	8.85
Being informed of researchers quoting from my studies	9	7.97
Easy location of previous studies for the interest of research	8	7.08
Identify research difficulties	6	5.31
Save time, effort and money	4	3.54
View and identify prestigious and certified scientific journals	3	2.66
offers information about the university's proceeding toward global ranking, and world classifications for internationally accredited universities	3	2.66
Develops academic teaching performance	3	2.66
Identify placement or ranking of the researcher among other researchers	2	1.77
Enhance English language competency	2	1.77
The site benefits Graduate students with their research and by acquiring research skills	2	1.77
View research activities of the university	1	0.89
Total	113	

Viewpoints of participants in the study refer to a range of benefits to the use of the site. The biggest benefit was " Interaction with expert researchers from around the world " by an average of (26.55%). The statement in second place of interest was "View published researches for researchers of similar discipline or interests", with an average of (16.81%). The benefit of "Openness to the world and viewing educational developments" was on third place by an average of (9.4%). The least ranked benefit was "View research activities of the university" with an average of (0.89%).

The mentioned benefits might be logical, as the faculty members who interacted with the site reflected benefits of interacting with their peer researchers from around the world and from different disciplines and interests. Some of them were directed towards more interaction with researchers from the same interest or discipline, which indicate the importance of the benefits that an interactive faculty member might gain from using the site.

### **Recommendations**

In light of results of the current study, the researcher recommends the following:

- The university must provide the necessary infrastructure to enable faculty members to participate in the site, which will be reflected on the university's prestigious ranking, and on the researchers, through mutual exchange of experiences with global researchers.
- Urge faculty members to increase their interest to interact with the site and with involved researchers, because of its benefits for the university and the researcher himself as a result of participation.
- University should encourage faculty members to cooperate with other colleagues from outside the university, to form research groups and conduct comparative studies of research issues beyond the geographical boundaries.
- Encourage faculty members to upload their researches on the site; to increase opportunities for researchers from outside the university to view them, and to increase the chances of citation of researches.
- Encourage researchers from various academic ranks and of different experiences to participate in the site, because of the ease of access to uploaded studies, to share their experiences with fellow researchers from inside and outside the university, which will reflect on the image of the university.

### **Conclusion**

As technology evolves, researchers and academics are aware of the necessity and advantages of web-based research sources, among such sites is the core of our study "ResearchGate" website, which proved to bring added value to researchers. As assured by results of the current study, the site has many benefits, among them is the ability to gain access to the most current information, and possibilities of interactive contact with researchers from around the world, which increases the effectiveness of researches and develop research skills. Thus, universities should pay more attention for such sources, and to provide the proper infrastructure to make such sites more available for faculty members and Graduate students, and other

interested researchers. Giving a proper focus on such academic websites can provide a significant impact on higher education institutions locally and internationally.

### **Acknowledgement**

I would like to express my special appreciation and thanks to Mrs. San'a Bushnaq; the linguistic expert who reviewed the accuracy of the language and the article readability. Her help is highly appreciated.

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