INVESTIGATION OF RESEARCH SKILLS IN GRADUATE STUDENTS (CASE STUDY: PAYAMENOOR UNIVERSITY)

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Abstract

The capabilities of conducting research and generating knowledge are the most prominent factors in developing any country and the key to their socioeconomic development. The academic communities, especially graduate students, play a critical role in this matter. So the aim of this study is investigation of research skills in graduate students. The method of this study is descriptive surveyand its statistical population consisted ofall male and female university students majoring in three academic departments of educational sciences, social sciences and economics of PayameNoor University of Isfahan 2014-2015.The sample consisted of 204. The research instruments includedresearcher-made questionnaire onassessment of research skills. Data were analyzed through One-sample t-test, Independent Samples Test, oneway ANOVA. The Findings demonstrated that there was a Students' proficiency in research skills was above average (3.61). Of the six research skills, the students' proficiency in writing research proposals (3.76), research methodology (4.13) and using library resources (3.84) was above average, their

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Net surfing skills oriented towards websites on scientific research (3.50) was about the average, and their statistical analysis skills (3.13) and expertise in documenting sources (citation) (3.28) was below average. Moreover, there were no significant differences between male and female students in terms of research skills, and no significant differences between students in all three academic groups.In general, the students' research skills stood at relatively favorable levels. However, further improvements of students' research skills should be placed high on the agenda of the framework of educational planning policies and curriculum development of higher education.

Keyword: Research skills, graduate, students, University

Introduction

In information societies, the education sector is considered as a pivotal factor for the socioeconomic growth and development of societies, because on one hand, the education systems produce the necessary skills and attitudes required for the economic growth and development, and on the other hand, they provide the required capabilities for compatibility and flexibility against the new approaches and social, cultural, technological changes. Today, to achieve the socioeconomic development in societies, research and development are of vital importance (Czarl&Belovecz, 2007). In fact, the assumption is that the technological changes and innovations have been guided by research and development in recent decades (United Nation Conference, 2005).

Concerning the higher education, Bowden & Marten (1998) proposed two pivotal issues known as "Education-centered University" and "Research-centered University". In effect, having relied on Pitter Senge's theory on learning organization, they named higher education 'the Learning University', and not only does this title see the combination of the two main functions of "education" and "research" as realized, but changes in attitudes towards education and research are also defined.

Given that lifelong education and learning are the basis on which all knowledge-based societies are developed; the roles, missions and functions of universities should be redefined in the third millennium. In practice, the major missions of universities are continuing education, research

and development of groundwork for training productive manpower with professional knowledge and skills used towards social development and long-standing development of sciences through the agency of research development (Luis et al, 2006).The new knowledge is produced and transferred through the advanced research and training in postgraduate universities and institutions (Wang, 2002).

Conducting advanced studies with the help of faculty members and students shows that countries that direct their development programs based on research and more to the point, help universities to achieve these objectives, a great deal of importance is placed upon the quality of postgraduate programs, especially the quality of doctoral programs. Masters and Ph.D. students make up the foundation of research-centered universities, and their roles have always been decisive in the quality of research.

Limited studies have so far been conducted on both research and students' research skills in Iran. To name some, in a study performed by Mizani et al (2011)it was concluded that the levels of master's students' scientific, practical abilities and the quality of their supervisors and advisors' guidance were rated moderate. Gravand et al. (2013) concluded that the status of students' research self-efficacy was not satisfactory. Furthermore, in studies conducted by Onwuegbuzie (1997) &Papanastasiou (2005), the results indicated that the majority of students had negative attitudes towards research. In particular, this negative attitude was more prevalent in research methodology and statistics courses. In studies conducted by Salazar &Almonte (2007), the results demonstrated that factors like time, belief in ongoing efforts to do research, positive group atmosphere, working conditions, organizational relationships, employment and involvement in science at universities were critical factors influencing the improvement of the culture of performing research at the universities in the Philippines.Trigwell&Godet (2005) showed that 74.8% of Oxford postgraduate students rated their research experiences as positive and high quality ones. In another study performed by Bennet& Turner (2013) on Oxford graduate students' research experiences, it was concluded that 82% of students were satisfied with the quality of research skills, supervision and guidance in the research process.

As part of the intellectual capital of countries, students are considered as the most important factor in identifying the challenges in societies, due to being possessed of research skills. Therefore, the present study aims to delve into the master's students' research skills.

Methodology

The present study was an applied research in terms of the goal, and it was a descriptive survey in terms of methodology. The statistical population consisted of all male and female university students majoring in three academic departments of educational sciences, social sciences and economics of PayameNoor University of Isfahan 2014-2015. The sample population was determined through Morgan's sample population table and stratified random sampling method (n=204). For data collection, the research instruments included researcher-made questionnaire on assessment of research skills. questionnaire consisting of 45 questions with Likert scaling (1=very little, 6= very much) was used, which examined six dimensions of skills in proposal writing, skills in research methodologies, skills in statistical analysis, skills in using websites on scientific research, skills in documenting sources (citation) and skills in using library resources. The six foregoing dimensions were collected through studying books on research methodologies, and the questions were designed with the help of professors teaching research methodology courses. The reliability of the questionnaire was calculated by Cronbach's alpha (α=0.85), and the content validity of the questionnaire was confirmed by several specialists in research methodology. To check the mean of research skills, the cut point was set at 3.5.Data were analyzed through One-sample t-test, Independent Samples Test, oneway ANOVA.

Results

Table 1: showing theFrequency and percent in three groups of students

Groups	Frequency	percent
Educational Sciences	76	37.3
Social sciences	46	22.5
Economics Sciences	82	40.2
Total	204	100.0
Men	96	47.1
Women	108	52.9

The results of Table 1 indicate that 3.37% of the students participating in the study were majoring in the educational sciences, 40.2% were majoring in the social sciences and 22.5% of them were majoring in economicsSciences. Furthermore, the results demonstrated that 47.1% of

the students participating in the study were female (96 students) and 52.9% were male (108 students).

Table 2: One sample t-test Research skills

Group	Skills Research	M	SD	t	df	Sig
Research Skills in three group	Research skills	3.61	0.54	2.976	203	0.003
	Writing research proposals skill	3.76	0.54	6.797	203	0.000
	Research methodology skill	4.13	1.04	8.692	203	0.000
	statistical analysis skill	3.13	0.78	-6.697	203	0.000
	websites on scientific search	3.50	0.74	0.142	203	0.887
	expertise in documenting sources (citation)	3.28	1.02	-2.986	203	0.000
	using library resources	3.84	0.82	5.961	203	0.000
Research Skills in Educational Sciences	Research skills skill	3.58	0.44	1.609	75	0.112
	Writing research proposals skill	3.76	0.50	4.636	75	0.000
	Research methodology skill	4.11	0.88	6.028	75	0.000
	statistical analysis skill	3.22	0.63	-3.843	75	0.000
	websites on scientific search	3.21	0.64	-3.780	75	0.000
	expertise in documenting sources (citation)	3.18	0.72	-3.771	75	0.000
	using library resources	3.97	0.70	5.963	75	0.000
Research Skills in social sciences	Research skills skill	3.75	0.56	3.070	45	0.004
	Writing research proposals skill	3.93	0.54	5.498	45	0.000
	Research methodology skill	4.52	1.34	5.156	45	0.000
	statistical analysis skill	3.28	0.77	-1.842	45	0.072
	websites on scientific search	3.65	0.54	1.969	45	0.055
	expertise in documenting sources (citation)	3.39	0.84	-0.844	45	0.403
	using library resources	3.73	0.83	1.869	45	0.068
Research Skills Economics Science	Research skills skill	3.52	0.61	0.398	81	0.692
	Writing research proposals skill	3.65	0.57	2.335	81	0.022
	Research methodology skill	3.87	0.92	3.512	81	0.001
	statistical analysis skill	2.94	0.90	-5.336	81	0.000
	websites on scientific search	3.71	0.81	2.303	81	0.024
	expertise in documenting sources (citation)	3.28	1.360	-1.337	81	0.172
	using library resources	3.69	0.85	1.985	81	0.051

The results demonstrated that there was aStudents' proficiency in research skills was above average (3.61). Of the six research skills, the students' proficiency in writing research proposals (3.76), research methodology (4.13) and using library resources (3.84) was above average, their Net surfing skills oriented towards websites on scientific research(3.50) was about the average, and their statistical analysis skills (3.13) and expertise in documenting sources (citation) (3.28) was below average.

Among the educational science majors, the highest mean was for skills in research Methodologies (4.11), and the lowest mean went for skills in documenting sources (citation) (3.18). Not to mention, as for the social sciences majors, the highest mean was for skills in research methodologies (4.52), and the lowest mean went for skills in statistical analysis (3.28). Finally, among the economics majors, the highest mean was for skills in research methodologies (3.87), and the lowest mean went for skills in statistical analysis (2.94).

Table 3: Independent Samples Test between tow sexes

Sex	N	M	SD	SE.M	Levens Test for Equality of Variances		MD	t	df	Sig
					Sig	F				
Men	96	3.68	0.540	0.055	0.933	0.007	0.133	1.741	202	0.083
Women	108	3.55	0.549	0.052						

The results of t test indicated that there were no significant differences between male and female students in terms of research skills (t= 1.741 sig= 0.083).

Table 4:Oneway ANOVA between three groups

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	1.212	2	0.606	2.038	0.133
within Groups	59.764	201	0.297	-	-
Total	60.976	203		-	-

Also, the results of ANOVA demonstrated that there were no significant differences between the educational sciences, social sciences and economics majors with regard to the value of F (F=2.038 sig= 0.133).

Conclusion

The results showed that the overall skills of students were above average. This finding was consistent with the results of studies conducted by Trigwell&Godet (2005) and Bennet& Turner (2013), and it was inconsistent with the results of studies performed by Mizani et al. (2011). Moreover, Of the six research skills, the students' proficiency in writing research proposals, research methodology and using library resources was above average, their Net surfing skills oriented towards websites on scientific research was about the average, and their statistical analysis skills and expertise in documenting sources (citation) was below average. Among the study, skills in writing research plan (proposal writing), methodology, use of library resources and skills above the average level of research Search on average, and in the skills and proficiency in statistical analysis source coding method is lower than the average level. The results of studies conducted by Mizani et al. (2011), Samadi (2003) and Rai& Dai(1998) about skills at searching websites and databases demonstrated that half of the students were not familiar with the scientific databases and were weak in searching for information in scientific websites. Therefore, the findings of the present study and those of others suggest that some measures should be taken in this regard, such as running workshops on familiarity with research databases in universities, allocation of part of the time available for the research methodology courses to introducing these databases and instructing students how to search the data banks, in such a manner that students will be able to gain the most information in the shortest span of time.

The findings of the present study relating to low levels of skills in statistical analysis were consistent with the results of studies conducted by Palizban (2007), Mizani et al. (2011), Refahi et al. (2001), but they were not consistent with the results of the present study in terms of research methodologies and writing research proposals. So, it is highly recommended that workshops on writing research proposals be held for newly arrived students entering master's programs. In addition, it is of prominent significant that the close correlation between the research methodologies and research subjects be correctly understood by students, and the

statistical analysis skills should be taught by professors who are highly competent at research methodologies, using common statistical software and focus more on functional materials.

Most scholars believe that majors that fall in the domain of the humanities are attached a lot of importance both in terms of recognizing affairs and changing them, because the humanities are tied up with the political, social, economic and cultural issues and are regarded as the dynamic and evolving minds of societies. Therefore, it is expected that the humanities graduates be well possessed of much higher thinking and research capabilities than other fields, and gain a correct understanding of their own communities' problems and scourges and cope with them effectively.

Today's world is moving towards knowledge orientation and knowledge production with speed. Additionally, reaching top positions in terms of producing universal knowledge is among the most important goals of Iran's development vision. Given the swift changes of societies, universities will forced to adapt themselves in line with the swift social changes, and considering the fact that a considerable portion of the gross domestic growth is allocated to the higher education systems, it is a national necessity that the universities' programs, functions and objectives be on the right track towards the overall formulated policies.

The most important challenge facing the development of science and technology in Iran is the creation of a creative, innovative, independent education and research structure in such a manner that lays the proper groundwork for the dynamic and continuous development of knowledge among all groups in the society based on the society's basic needs and priorities (AhoManesh, 2002).

To resolve the obstacles and difficulties facing the development of science and knowledge in Iran, it is necessary that the higher education curricula, especially the curricula of postgraduate students be changed with the aim of improving the master's and doctoral students' research skills, in such a way that the postgraduate curricula will provide the students with the required knowledge to conduct effective studies and change the passive learners into ones with independent thinking and learning capabilities, in such a way that their abilities and creativity are relied on to conduct studies. It is recommended that the research methodology course be further considered, a correct understanding of this course be created among students, and the course 'the philosophy of science' be added to the curriculum of all majors with the aim of understanding the intellectual-philosophical fundamentals of research methods. Since researchers, their

knowledge and skills are the main basis of the research systems and the process of knowledge creation, students should be possessed of the necessary capabilities to generate quality knowledge. In this regard, students can be equipped with the required knowledge, such as statistics, research methodology, English and information literacy skills. As for the ratio of students to facilities and information resources, the status of libraries and research centers can be addressed and shortages should be handled through the agency of information need assessments. In sum, 'the research-centered education', an essential issue in the development of higher education, should be considered by the higher education policy-makers in such a manner that answers the needs of other economic and social institutions.

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