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Full Length Research Paper

Library and information science in distance education: Advantages and disadvantages in view of the students of the major

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Based on the viewpoints of the Library and Information Science students in Payame Noor University, this study aims to identify both goodness and difficulties of Library and Information Science in distance education. A survey method was used to carry out the study in which the data was collected by two questionnaires distributed within two rounds. Student-based education, free-attendance classes and in turn, the possibility to find chances for other favorites, self-reliance ability in students owing to absence of full-time access to lecturers in comparison with the students of traditional system, achievement of high level of learning due to the existent general behavioral targets along with the practices provided in textbooks and ignorance of negative points in multiple-choice questions were of the most remarkable advantages introduced by the students. The most important disadvantages of distance education in view of the respondents were insufficient practical rehearsal on the site as well as inadequate students' knowledge about library e-resources, lack of practical capabilities due to the very few number of sessions made up during each semester, limited access to lecturers, inadequate students' information on their specific text resources and taking difficult final tests of the courses.

Key words: Advantages, disadvantages, distance education, library and information science, Payame Noor University.

INTRODUCTION

The studies at both national and international levels on development perspectives show that worldwide development in different aspects such as economics, social affairs, culture and education relies heavily on the technological advancements achieved during recent decades. Among such technologies, World Wide Web has dramatically affected various dimensions of the world educational development. The technologies of telephone, film, tapes, slides and compact discs along with the facilities provided through WWW such as video conferences have paved the way to overcome the time limits for implementation of distance education at all educational levels.

Distance education, as a matter of fact, is a modern educational method recently, which has demonstrated its vital role on both education and social developments. The basic target followed by such a kind of education is actually to set up an educational system for those suffering from time and place difficulties. Therefore, the vital role of distance education in globalization of higher education and generalization of education and development and provision of its required facilities should be taken into deep consideration. Moni'ee (2003) introduces the following items as the main reasons for making use and development of distance education:

The Growth in the number of potential applicants of higher education, an increase in applications for higher education, an increase in the applicants of life-long learning, the quality of higher education, making the grounds for parallel access to higher education, financial resources and the creation of the educational system devoid of qualification are descent but useful for more

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applicants through lower expenses.

As a result, recognition and definition of different dimensions surrounding distance education could contribute to its improvement and development. The main points in the previous researchers' definitions on distance education are place and time as well as the relationship between the learner and the teacher. Among the essential factors existent in distance education, the learners and the educational attitude taken towards them within the provision of the required quality and quantity remain the matter of greatest importance which deserve deep discussions and investigations.

After centuries, although distance education, in some educational centers, has worked in line with technological advancements, there are still centers providing distance education in a semi-traditional way. Payame Noor University is a higher education center providing a kind of distance educational system in Iran. This University is mostly to balance the traditional methods with the modern principles. The curricula at Payame Noor University extensively conform to the attitudes of traditional universities and their syllabi. Of course, distance education needs first to understand its capabilities and then, offer the majors being in more coordination with its educational characteristics. In this case, identification of advantages and disadvantages of each major offered through distance education requires a high level of attention. Considering the standards of distance education, this study is to do such identification on Library and Information Science as a recently-implemented major in Payame Noor University based on the view points of its students.

Objectives and potential results of the study

This study basically aims to identify the problems of Library and Information Science in Payame Noor University and to find their priorities and importance so that it would be possible to arrive at practical solutions. Moreover, identification of the advantages of distance education for Library and Information Science would empower the existent strengths and direct more attention on current advantages. Future studies could be conducted in the same way on other university majors and comparisons among the results could distinguish which majors, in practice, best fit the distance educational system.

Research questions

This study will attempt to answer the following questions:

1. What do the students of Library and Information Science in Payame Noor University introduce as the deficiencies?
2. What are the advantages of Library and Information Science in Payame Noor University in view of the students of the major?
3. How is the priority and importance of the advantages of Library and Information Science in Payame Noor University appointed by the students of the major?
4. How do the students appoint the priority and importance of each of the existent advantages in LIS through Payame Noor University?

Operational definitions

Brief definitions of the concepts used in the study will be presented.

Distance education

Distance education, through this study, is meant as a kind of education implemented in Iran by Payame Noor University in both semi-attendance and free-of-attendance modes. Payame Noor University has not yet provided its distance education with electronic facilities. Students, through the free-of-attendance mode, will select their units and take the final exams under no obligation to attend at class sessions during each semester. Within the semi-attendance mode, students are provided with a distinct number of sessions at which their attendance is optional for theoretical units but obligatory for practical courses.

LIS students

LIS students are those students of Payame Noor University in Iran who have passed their first semester education and have registered for next the semesters.

METHODOLOGY

This study, within a descriptive-survey method, aims to offer a description of an experimental perception on the current conditions of LIS in Payame Noor University. In other words, the researchers are going to collect required data and accurate information to analyze the current circumstances of LIS in Payame Noor University.

Data collection tools and analysis method

The data, here, were collected by two questionnaires disseminated during two rounds to the LIS students of Payame Noor University. The first questionnaire included two open questions on the advantages and disadvantages of LIS in distance education. Then, the data gathered through the first questionnaire were used and classified to arrange the second questionnaire based on the current standards and quality definitions in distance education. This second questionnaire was designed according to the Likert scales including the five items of "complete agreement = 5", "agreement = 4", "no

comment = 3", "disagreement = 2" and "complete disagreement = 1". The latter questionnaire aimed to find the data useful in appointing the priority and importance of the so-called advantages and disadvantages. The assumed maximum score, minimum score and the mean of scores were respectively 180, 36, and 3. The SPSS software was applied to analyze the data.

Using the descriptive statistic method, the descriptive data related to the respondents and also related to the items investigated within the research were illustrated through statistical tables. Then, the important degree of the choices, designed for each item was identified by means of ranking and the single-variable t-test was used to compare the mean of each item with the assumed mean of 3. After that, the research items were ranked by the use of Hotelling's T-Squared Test. Finally, the Manova Test was used to compare the attributes of respondents such as their gender, university, and year of education.

Before dissemination of the first questionnaire, 31 persons of the statistical population received the questionnaire with the calculated 0.70 Cronbach's Alpha, which appeared to be the reliability of the questionnaire. The Cronbach's Alpha of 0.84 was achieved after the complete dissemination of the questionnaire to the whole population of the study which demonstrated a high amount of reliability for the questionnaire. The validity of the questionnaire was also approved by some of the subject specialist masters and the experts of statistics.

Statistical population and sample

The population of the study consisted of 3552 LIS students from Payame Noor University, who have passed their first term of education and have registered for next semesters. The first half of the education year of 2009/2010 was selected as the time to distribute the questionnaires in. As it was apparently assumed that the newly-accepted LIS students experiencing their first educational term have not yet come to a complete perception of LIS major in distance education, this 909 group of students were deducted from the total number of 4461 LIS students of Payame Noor Universities in Iran. The statistical sample of the study included the 1829 LIS students of the Payame Noor Universities located in the central cities of Iran's provinces such as Tabriz, Urumaie, Isfahan, Tehran, Mashhad, Zahedan, Shiraz, Qom, Kerman, Kermanshah, Sari and Arak among which the Payame Noor Universities of Isfahan, Shiraz, Mashhad, Kermanshah, Sari, and Zahedan were selected as the relatively strong and weak Iran Payame Noor Universities regarding the criteria such as the number of students, background of LIS and available facilities. Finally, the Cochran formula was used to distribute the two questionnaires within 312 persons out of 975 LIS students of the latter 6 Payame Noor Universities. Only 300 questionnaires were given back out of which 31 were answered only on the items related to the advantages. Therefore, the items regarding the disadvantages were taken into analysis as the no-comment answers. As the attributes of the selected sample represent a huge amount of the whole characteristics, the results could be generalized to the whole population of the study.

Questionnaires

As it was mentioned, the first questionnaire included two open questions by which the comments of LIS students were discovered on the advantages and disadvantages of LIS in Payame Noor University. The second questionnaire was designed based on the current standards on the quality of education as well as the comments of the students offered through the first questionnaire. Based on the appointed criteria on educational quality assessment, the introduced advantages and disadvantages were categorized in the latter questionnaire into 5 items of learning, time of classes, professors, educational resources and tests.

Research history

Previous studies on distance education focus more on electronic education based on making use of Internet but none of them has concentrated on a specific major. There will be brief introduction of the most important studies of the past.

Truman (1995), through his study on distance education, concludes that distance education may not consider the importance of document delivery systems, but the technical methods useful in implementation of such an education, especially those that have solved the communicative problems of classic education students, is the matter of greatest importance. The most remarkable barriers investigated by Truman were money, personnel equipments, time, students' perception of information and perception of how technology can achieve required information for distinguishing relevant information from irrelevant one.

Galusha (2001) considers distance education as a solution for adult education and introduces low motivation from students in learning due to absence of face-to-face communication, the longer time spent for education, and lack of supportive services from faculty members as some of the important problems towards distance education.

Muilenburg and Berge (2001) analyzing the data resulted from their research, investigates the sub-structures of the problems related to faculty members, staff and directors in distance education. In this regard, they outlined ten factors such as executive structures, organizational changes, technical experts, social interactions and its quality, the rewards specified to the faculty members, technological threat, legal matters, assessment/performance and provision of access and supportive services for students.

Cucek (2001) conducted a study in Boise State University to assess the students' satisfaction on distance education and divided the main problems of distance education students as compared with the students of traditional universities into the 5 groups of major, time, person itself, the management method from the institutes holding distance education and technology.

Zirkle (2001) categorizes the distance education problems into two groups of organizational problems and students' problems. Amongst the organizational problems, he first points to the lack of attendance classes and lack of access to library and then, the use of modern technologies such as computer. According to the mean scores gained, the other organizational problems estimated by Zirkle in distance education are respectively the lack of instant consultancy, absence of specific units during each term, lack of back-up forces contributing to the different problems of students in university such as the financial and administrative ones, insufficient required access to educational resources, lack of continuous contact with university environment, inadequate information of students on the available programs and activities in the university, educational expenses, unaware of enrollment method and its difficulties and the problems towards getting aware of the points (scores) and other information related to the student.

Berge (2002) points to the obstacles in distance education. His believes is such that barriers refer to the experience, capability and capacity of the institute holding distance education and education based on research activities.

Barrett (2002) introduces two cases of the problems in distance education: lack of contact among the individuals and their absence, low speed from lecturers in providing students' questions with required answers and sometimes low knowledge of lecturers in answering questions. Isman and Fahme (2003) have also investigated the communicative problems in distance education. They discuss that lack of motivation for learning resulted from the absence of face-to-face contact among the students themselves

Table 1. Respondents' frequency distribution separated by gender.

Gender	Number	Percentage (%)
Female	255	85
Male	45	15
Total	300	100

Table 2. Respondents' frequency distribution separated by university.

University	Number	Percentage (%)
Isfahan PM.U.	64	21.3
Shiraz PM.U.	50	16.7
Mashhad PM.U.	63	21
Kermanshah PM.U.	53	17.7
Sari PM.U.	60	20
Zahedan PM.U.	10	3.3
Total	300	100

and between the student lecturers, expenses and lack of supportive services from faculty members are the barriers towards successful learning in distance education. They have categorized the communicative problems into the main groups of technological, physical, psychological and semantic problems.

Isman and Altinay (2005) have conducted a study on the communicative problems of distance education via Internet in the eastern Mediterranean Universities. The results also have demonstrated the problem related to the face-to-face communication. They have divided communications in distance education into the contacts between students and students, students and lecturers, lecturers and lectures, and students and faculty members. They have also discussed those problems of students regarding technology and language.

Studying in the open universities and distance education, Ostad (2002) argues that one of the most important points directing distance education to accomplishment is the availability of supportive systems including a set made up of learners, ease of access to lecturers via telephone, regular contacts with lecturers through regular meetings, efficient post service system and the sessions made up at weekends and holidays.

Issazadeh (2003) studies the preferences of distance education as compared to its relatively low expenses, suitable time and place, presentation of teaching methods or enjoyment of faculty members' knowledge, enhancing the quality of education, flexibility and browsing previous lessons.

Kiani (2007) believes that the problems of distance education in Iran is derived from the problems in economics, social affairs, culture, and politics and divides the current deficiencies of distance education into 7 groups:

1) Unbalanced geographical location of the institutes holding distance education;
2) Low quality and suitability of side-educational facilities such as library, workshop, laboratory, and consulting centers for selective dissemination of information and document delivery services;
3) Insufficient interactions between students and lecturers;
4) Insufficient validity for the educational certificates issued by distance education centers in view of the government and non-government institutes;
5) Undeveloped required equipments for provision of the facilities related to distance communication;
6) Inadequate supports from educational institutes in favor of students and
7) The high expenses imposed on students for tuition fee, preparing educational and side-educational resources, etc.

DATA ANALYSIS

Respondents' descriptive data

There will be investigated the demographic information of respondents. Table 1 shows the frequency distribution of respondents separated by gender. As it is seen, 255 persons (85% of respondents) are females and the rest (15%) are males.

The frequency distribution of respondents in different universities (Table 2) shows that Isfahan Payame Noor University with 21.3% and Zahedan Payame Noor University with 3.3% have offered the highest and the lowest amount of answers to the questions. As the statistical sample of the study was calculated based on Cuchran formula, such an amount of answers was predictable. Moreover, 12 of those questionnaires which were not received by the researchers were those questionnaires delivered to Mashhad Payame Noor University.

In order to investigate the frequency distribution of respondents due separated by term and make a more logical analysis on this group of data, the educational terms were divided based on the educational year due to the trend of disseminating the questionnaires through the students of term 2 and more. Table 3 includes the data on the educational years of the respondents' displays that the most number of respondents are the students of the terms 3 and 4 (37.3%).

Table 3. Respondents' frequency distribution separated by year of education.

Year of education	Number	Percentage (%)
1st year (2nd semester)	6	2
2nd year (3rd and 4th semesters)	112	37.3
3rd year (5th and 6th semesters)	99	33
4th year (7th and 8th semesters)	83	27.7
Total	300	100

Second questionnaire data analysis

As you know, the second questionnaire used the advantages and disadvantages introduced within the first questionnaire and arranged based on the 5 main items of learning, class hours, professors, educational resources and exams in order to rank the results of the research. The data analysis of the second questionnaire will be given below based on the Likert scale. It should be noted that the average mean score calculated in this study for ranking the latter questionnaire is 3.

Learning

Advantages

The frequency distribution and percentage resulted from the responses related to the advantages of learning component shows that the highest point refers to the choice of "student-centered item in learning" with the average point of 3.97 and the least point refers to the choice of "provision of learning possibilities in anywhere" with the average point of 2.75. Therefore, the ranking of the advantages related to the component of learning in LIS through distance education shows that the first priority of advantages is given by LIS students to the student-centered item and after that comes the items of enhancing the learning skills of the students in theoretical units, improving the abilities related to self-learning, learning how to learn in distance education, increasing learning abilities in distance education, making up the classes for meeting the individual problems, enhancing the practical abilities of students in both theoretical and practical units and provision of educational facilities anytime, anywhere (Table 4).

The single-variable T- test was used to measure the amount of advantages in learning. The results of this test show that the observed T at the error level of $p \leq 0.05$ is more than the critical quantity of the table (± 1.64). Therefore, the amount of learning advantages is more than the average level; that is, the so-called advantages of learning an item, in view of the population of the study, has been placed higher than the average level (Table 5).

Disadvantages

The frequency distribution and percentage resulted from the responses related to the disadvantages of learning component shows that the highest point refers to the choice of "low practical rehearsal on the site and inadequate awareness of library e-resources in distance education" with the average point of 4.12 and the least point refers to the choice of "decrease in student's learning within distance education" with the average point of 3.42. Therefore, the ranking of the disadvantages related to the component of learning in LIS through distance education shows that the first priority of disadvantages is given by LIS students to "low practical rehears on the site and inadequate awareness of library e-resources in distance education" and after that come the items of inadequate practical familiarity with the databases available on distance education, insufficiency of distance education for practical units, inadequate practical learning on the courses of reference resources and organization, meeting not all of the questions of students, not achieving all required practical skills in different courses by the student, inadequate theoretical units and/or the theoretical parts of practical-theoretical units, and a decrease in student's learning via distance education (Table 6).

The single-variable T test was used to measure the amount of disadvantages in learning. The results of this test show that the observed T at the error level of $p \leq 0.05$ is greater than the critical quantity of the table (± 1.64). Therefore, the amount of learning disadvantages is more than the average level; that is, the so-called disadvantages on the learning item, in view of the population of the study, has been placed higher than the average level (Table 7).

Class hours

Advantages

The frequency distribution and percentage resulted from the responses related to the advantages of class hours component shows that the highest point refers to the choice of "lack of any force for students in attending classes and finding the chance for participating in their other favorites" with the average point of 3.44 and the least point refers to the choice of "no necessity to the physical attendance of the professor and students in the university" with the average point of 2.32. Therefore, the

Table 4. Frequency and percentage distribution of the responses related to learning advantages.

Statements / Scales		Complete disagreement	Disagreement	No comment	Agreement	Complete agreement	Mean	Standard deviation	Variance coefficient
Students enjoy self-reliance ability in learning	Frequency	8	36	15	138	103	3.97	1.05	26.44
	Percentage	2.7	12	5	46	34.3			
Students' learning abilities enhance through distance education	Frequency	21	71	60	114	344	3.23	1.14	35.29
	Percentage	7	23.7	20	38	11.3			
Self-learning ability enhances through distance education	Frequency	20	45	89	114	32	3.31	1.06	32.024
	Percentage	6.7	15	29.7	38	10.7			
Students, in distance education, learn how to learn	Frequency	12	47	111	102	28	3.29	0.974	29.6
	Percentage	4	15.7	37	34	9.3			
Students' practical learning skills in both practical and theoretical units improve in distance education	Frequency	40	79	53	104	24	2.97	1.21	40.74
	Percentage	13.3	26.3	17.7	34.7	8			
Students' theoretical learning skills improve in distance education	Frequency	19	61	60	126	34	3.31	1.11	33.53
	Percentage	6.3	20.3	20	42	11.3			
It is an advantage to make up sessions to meet the students' text problems	Frequency	34	66	74	89	37	3.09	1.20	38.83
	Percentage	11.3	22	24.7	29.7	12.3			
Distance education makes education possible at anytime	Frequency	36	114	51	84	15	2.76	1.13	40.94
	Percentage	12	38	17	28	5			
Distance education makes education possible at anywhere	Frequency	45	105	49	80	21	2.75	1.2	43.63
	Percentage	15	35	16.3	26.7	7			

Table 5. Comparison between the average score of "learning" advantages and the assumed mean of 3.

Component	Average	Standard deviation	Standard error	T
Learning	3.19	0.622	0.035	5.28

Table 6. Frequency and percentage distribution of the responses related to learning disadvantages.

Statements	Scales	Complete disagreement	Disagreement	No comment	Agreement	Complete agreement	Mean	Standard deviation	Variance coefficient
The level of Students' learning reduces in distance education	Frequency	12	64	59	115	50	4.23	11.1	4.532
	Percentage	7.16	3.38	7.19	3.21	4			
Students' text questions will not be completely answered in distance education	Frequency	6	22	56	147	69	3.83	90.3	24.28
	Percentage	2	7.3	18.7	49	23			
Distance education does not satisfy the practical units of LIS	Frequency	7	17	60	87	129	4.04	1.03	25.49
	Percentage	2.3	5.7	20	29	43			
Distance education does not provide an acceptable level of practical learning in the course of "References"	Frequency	4	30	59	95	112	3.93	1.04	26.46
	Percentage	1.3	10	19.7	31.7	37.3			
Distance education does not provide an acceptable level of practical learning in the course of "Organization"	Frequency	7	27	57	98	111	3.93	1.06	26.97
	Percentage	2.3	9	19	32.7	37			
Distance education does not provide an acceptable level of practical familiarity with databases	Frequency	4	21	62	81	132	4.05	1.02	25.18
	Percentage	1.3	7	20.7	27	44			
Practical rehears at site and familiarity with library e-resources is insufficient in distance education	Frequency	4	12	58	95	131	4.12	0.94	22.81
	Percentage	1.3	4	19.3	31.7	43.7			
Distance education does not provide students with required practical skills in different courses	Frequency	4	35	67	119	75	3.75	1.001	26.69
	Percentage	1.3	11.7	22.3	39.7	25			
Inadequate learning of theoretical units and the theoretical parts of practical-theoretical units in distance education	Frequency	7	53	73	99	68	3.56	1.09	30.61

Table 7. Comparison between the average score of "learning" disadvantages and the assumed mean of 3.

Component	Average	Standard deviation	Standard error	T
Learning	3.85	0.697	0.0402	21.14

Table 8. Frequency and percentage distribution of the responses related to the advantages of class hours.

Statements	Scales	Complete disagreement	Disagreement	No comment	Agreement	Complete agreement	Mean	Standard deviation	Variance coefficient
Classes, in distance education are free of the presence-absence system	Frequency	35	55	34	109	67	3.39	1.32	38.93
	Percentage	11.7	18.3	11.3	36.3	22.3			
Distance education provides lessons in the self-study mode	Frequency	42	95	31	86	46	2.99	1.33	44.48
	Percentage	14	31.7	10.3	28.7	15.3			
Professors and students, in distance education, both do not need to physically attend the university	Frequency	87	113	37	41	22	2.32	1.23	53.01
	Percentage	29	37.7	12.3	13.7	7.3			
The very few class hours will avoid students' waste of time for attending classes	Frequency	36	73	50	102	39	3.11	1.25	40.19
	Percentage	12	24.3	16.7	34	13			
No obligation for attending classes provides students with chances for their other favorites	Frequency	26	48	45	130	51	3.44	1.19	34.59
	Percentage	8.7	16	15	43.3	17			
It is an advantage in distance education to make up classes during holidays	Frequency	103	83	43	48	23	2.35	1.30	55.31
	Percentage	34.3	27.7	14.3	16	7.7			

Table 9. Comparison between the average score of "class hours" advantages and the assumed mean of 3.

Component	Average	Standard deviation	Standard error	T
Class hours	2.93	0.833	0.048	-1.30

ranking of the advantages related to the class hours of LIS in distance education shows that the first priority of advantages is given by LIS students to "lack of any force for students in attending classes and finding the chance to participate in their other favorites" and after that come the items of availability of present-absent system for classes, prevention of wasting the time of students for attending the classes, self-study mode of presenting units, making up the classes at holidays, and no necessity to the physical attendance of the professor and students in the university (Table 8).

The single-variable T-test was used to measure the amount of advantages in class hours' component. The results of this test show that the observed T at the error level of $p \leq 0.05$ is smaller than the critical quantity of the table (± 1.64). Therefore, the amount of class hours' advantages is less than the average level; that is, the so-called advantages on the class hours item, in view of the population of the study, has been placed lower than the average level (Table 9).

Disadvantages

The frequency distribution and percentage resulted from the responses related to the disadvantages of class hours component shows that the highest point refers to the choice of "lack of practical abilities in students such as making use of computers, the Internet, databases, software, etc. due to few number of made up sessions" with the average point of 4.006 and the least point refers to the choice of "decrease in students' learning due to no

Table 10. Frequency and percentage distribution of the responses related to the disadvantages of class hours.

Statements / Scales		Complete disagreement	Disagreement	No comment	Agreement	Complete agreement	Mean	Standard deviation	Variance coefficient
The very few number of classes causes decrease in social interactions among students	Frequency	11	35	79	99	76	3.64	1.092	30
	Percentage	3.7	11.7	26.3	33	25.3			
The very few number of classes causes a decrease in the students' verbal abilities such as giving lectures and etc	Frequency	8	26	65	117	84	3.81	1.025	26.90
	Percentage	2.7	8.7	21.7	39	28			
The few number of class hours causes students not to sufficiently experience practical skills such as use of computer, Internet, databases, software and etc	Frequency	8	23	50	97	122	4.006	1.06	26.46
	Percentage	2.7	7.7	16.7	32.3	40.7			
The few theoretical hours will decrease the students' theoretical learning	Frequency	16	67	70	98	49	3.32	1.14	34.33
	Percentage	5.3	22.3	23.3	32.7	16.3			
The few theoretical hours in practical units will decrease the students' practical learning	Frequency	8	34	64	113	81	3.75	1.057	28.18
	Percentage	2.7	11.3	21.3	37.7	27			
No obligation for theoretical classes will decrease the level of students' learning	Frequency	26	66	80	79	49	3.19	1.20	37.61
	Percentage	8.7	22	26.7	26.3	16.3			

Table 11. Comparison between the average score of "class hours" disadvantages and the assumed mean of 3.

Component	Average	Standard deviation	Standard error	T
Class hours	3.62	0.769	0.044	14.01

force for attending theoretical classes" with the average point of 3.19. Therefore, the ranking of the disadvantages related to the class hours of LIS in distance education shows that the first priority of disadvantages is given by LIS students to "lack of practical abilities in students such as making use of computers, the Internet, databases, software, etc. due to few number of made up sessions" and after that come the items of decrease in the verbal capabilities of students due to the few number of class hours, decrease in the verbal learning because of insufficient theoretical classes, and decrease in students' learning due to no force for attending theoretical classes (Table 10).

The single-variable T test was used to measure the amount of disadvantages in class hours' component. The results of this test show that the observed T at the error level of $p \leq 0.05$ is greater than the critical quantity of the table (± 1.64). Therefore, the amount of class hours' disadvantages is more than the average level; that is, the so-called disadvantages on the class hours item, in view of the population of the study, has been placed higher than the average level (Table 11).

Professors

Advantages

The frequency distribution and percentage resulted from the responses related to the advantages of professors shows that the highest point refers to the choice of "becoming a self-centered student due to lack of full-time professors and obtaining more experience as compared to the classical students" with the average point of 3.24

Table 12. Frequency and percentage distribution of the responses related to the advantages of professors.

Statements / Scales		Complete disagreement	Disagreement	No comment	Agreement	Complete agreement	Mean	Standard deviation	Variance coefficient
Distance education students, due to lack of full-time professors, will select the self-study method and as a result, will gain more experiences as compared to the conventional students	Frequency	27	61	64	108	40	3.24	1.18	36.41
	Percentage	9	20.3	21.3	36	13.3			
Due to the short time of attendance-classes, professors attempt to make the best use of time	Frequency	54	95	45	94	12	2.71	1.19	43.91
	Percentage	18	31.7	15	31.3	4			
Professors present a complete knowledge of textbooks during the sessions made up for meeting students' text problems	Frequency	36	91	67	94	12	2.85	1.11	38.94
	Percentage	12	30.3	22.3	31.3	4			
Students make optimum use of professors at attendance-classes	Frequency	27	68	54	116	35	3.21	1.18	36.76
	Percentage	9	22.7	18	38.7	11.7			
Due to the short time of classes, professors act as a guidance to direct students' learning process	Frequency	22	60	73	128	17	3.19	1.05	32.91
	Percentage	7.3	20	24.3	42.7	5.7			

Table 13. Comparison between the average score of "professors" advantages and the assumed mean of 3.

Component	Average	Standard deviation	Standard error	T
professors	3.04	0.725	0.041	1.03

and the least point refers to the choice of "making complete use of classes by the professors due to the short time of the make-up classes" with the average point of 2.71. Therefore, the ranking of the advantages related to the professors of LIS in distance education shows that the first priority of advantages is given by LIS students to "becoming a self-centered student due to lack of full-time professors and obtaining more experience as compared to the classical students" and after that come the items of making maximum use of the classes by students, the guiding role of professors due to the short time of the classes, comprehensive knowledge of professors on whole of the textbooks, and appropriate use of the time of classes by the professors (Table 12). The variance coefficient calculated within the data analysis shows that the advantageous item of "the professors' leading role on the students' learning" with the minimum variance dispersion of 32.91 amongst the responses offered on this item profits from the most cohesion and the least dispersion. This represents that these responses get the most quantity of homogeneity. While the item related to the appropriate use of the time of classes by the professors has got the most variance dispersion (43/91).

The single-variable T-test was used to measure the amount of advantages in the component of professors the results of which show that the observed T at the error level of $p \leq 0.05$ is smaller than the critical quantity of the table (± 1.64). Therefore, the amount of the advantages related to professors is less than the average level; that is, the so-called advantages on the professor item, in view of the population of the study, has been placed lower than the average level (Table 13).

Disadvantages

The frequency distribution and percentage resulted from the responses related to the disadvantages of professors

show that the highest point refers to the choice of "students' limited access to professors in distance education" with the average point of 3.86 and the least point refers to the choice of "incomplete knowledge of the invited professors in distance education" with the average point of 2.98. Therefore, the ranking of the disadvantages related to the professors of LIS in distance education shows that the first priority of disadvantages is given by LIS students to "students' limited access to professors in distance education" and after that come the items of inability of some of the professors in offering complete guidance to the students, inefficient classes made up by some of the professors, incomplete awareness of most of invited professors on the educational system in distance education, making insufficient engagement of students in the apprenticeship classes by professors, inability of professors in creation of enjoyment in the students and within classes, lack of required interaction between students and the invited professors, and inability of professors in transferring their knowledge to the students (Table 14).

The single-variable T-test was used to measure the amount of disadvantages in the component of professors the results of which show that the observed T at the error level of $p \leq 0.05$ is greater than the critical quantity of the table (± 1.64). Therefore, the amount of the disadvantages related to professors is more than the average level; that is, the so-called disadvantages on the professor item, in view of the population of the study, has been placed higher than the average level (Table 15).

Educational resources

Advantages

The frequency distribution and percentage resulted from the responses related to the advantages of "educational resources" shows that the highest point refers to the choice of "increase in the amount of the students' learning owing to the general behavioral objectives and the practices offered in the text books" with the average point of 3.5 and the least point refers to the choice of "very few printed mistakes in the text books" with the average point of 2.8. Therefore, the ranking of the advantages related to "educational resources" of LIS in distance education shows that the first priority of advantages is given by LIS students to "increase in the amount of the students' learning owing to the general behavioral objectives and the practices offered in the text books" and after that come the items of scientific explanation of the concepts offered within the text books, creating learning motivation in students by studying the available educational resources, enough solidity of the statements provided in the textbooks, easy-understanding and expressive concepts written in the textbooks, self-learning textbooks, up to date statements provided in educational resources, bolding the important statements of the educational resources, enough explanations for presenting educational statements, and presence of few printed mistakes in the educational resources (Table 16).

The single-variable T-test was used to measure the amount of advantages in the component of "educational resources" the results of which show that the observed T at the error level of $p \leq 0.05$ is greater than the critical quantity of the table (± 1.64). Therefore, the amount of the advantages related to educational resources is more than the average level; that is, the so-called advantages on the educational resources item, in view of the population of the study, has been placed higher than the average level (Table 17).

Disadvantages

The frequency distribution and percentage resulted from the responses related to the disadvantages of educational resources show that the highest point refers to the choice of "insufficient awareness of students about the specific resources of their major" with the average point of 3.75 and the least point refers to the choice of "small-bulk educational resources" with the average point of 2.47. Therefore, the ranking of the disadvantages related to the professors of LIS in distance education shows that the first priority of disadvantages is given by LIS students to "insufficient awareness of students about the specific resources of their major" and after that come the items of difficulties for students in preparing educational resources, large-bulk educational resources, lack of students' access to the resources of practical units, difficulties in understanding the content of the educational resources without classes, inadequate students' knowledge of the determined educational resources, lack of coordination in the determined educational resources with the modern knowledge and information, and the small-bulk educational resources (Table 18).

The single-variable T test was used to measure the amount of disadvantages in the component of educational resources the results of which show that the observed T at the error level of $p \leq 0.05$ is greater than the critical quantity of the table (± 1.64). Therefore, the amount of the disadvantages related to educational resources is more than the average level; that is, the so-called disadvantages on the educational resources item, in view of the population of the study, has been placed higher than the average level (Table 19).

Examinations

Advantages

The frequency distribution and percentage resulted from the responses related to the advantages of

Table 14. Frequency and percentage distribution of the responses related to the disadvantages of professors.

Statements \ Scales		Complete disagreement	Disagreement	No comment	Agreement	Complete agreement	Mean	Standard deviation	Variance coefficient
Distance education students have limited accesses to professors	Frequency	5	20	67	126	82	3.86	0.94	24.35
	Percentage	1.7	6.7	22.3	42	27.3			
The invited professors –those not being of faculty members of PNU– have not comprehensively perceive the distance education system	Frequency	9	35	118	90	48	3.44	0.99	28.77
	Percentage	3	11.7	39.3	30	16			
The invited professors are not able to create enjoyment in students within classes	Frequency	14	54	113	78	41	3.26	1.05	32.20
	Percentage	4.7	18	37.7	26	13.7			
Some of the invited professors are not able to well direct students in learning	Frequency	4	29	99	119	49	3.60	0.91	25.27
	Percentage	1.3	9.7	33	39.7	16.3			
Some of the invited professors cannot make up useful classes	Frequency	6	31	101	113	49	3.56	0.95	26.68
	Percentage	2	10.3	33.7	37.7	16.3			
making insufficient engagement of students in the apprenticeship classes by professors	Frequency	11	61	109	73	46	3.27	1.06	32.41
	Percentage	3.7	20.3	36.3	24.3	15.3			
The invited professors are not acceptably knowledgeable	Frequency	19	75	129	46	31	2.98	1.036	34.76
	Percentage	6.3	25	43	15.3	10.3			
Inability of invited professors in transferring their knowledge to the students	Frequency	7	69	118	75	31	3.18	0.978	30.75
	Percentage	2.3	23	39.3	25	10.3			
Lack of required interaction between students and the invited professors	Frequency	15	63	103	84	35	3.20	1.057	33.03
	Percentage	2.3	17.7	24.3	33	22.7			

Table 15. Comparison between the average score of "professors" disadvantages and the assumed mean of 3.

Component	Average	Standard deviation	Standard error	T
Professors	3.37	0.648	0.037	9.99

"examinations" show that the highest point refers to the advantageous item of "disregarding negative scores from the multiple-choice exams" with the average point of 4.54 and the least point refers to the choice of "acceptable assessment of the students' scientific status by the scores attained through the final exams" with the average point of 2.86. Therefore, the ranking of the advantages related to "examinations" of LIS in distance education shows that the first priority of advantages is given by LIS students to "disregarding negative scores from the multiple-choice exams" and after that come the items of centralized examining, regarding the positive scientific sores for the final score of the theory-practical units, regarding the share for mid-term score, independency of the scores attained through the multiple-choice exams from professors' interference, acceptable assessment of

Table 16. Frequency and percentage distribution of the responses related to the advantages of educational resources.

Statements \ Scales		Complete disagreement	Disagreement	No comment	Agreement	Complete agreement	Mean	Standard deviation	Variance coefficient
Up to date contents of educational resources	Frequency	41	62	72	99	26	3.02	1.19	39.40
	Percentage	13.7	20.7	24	33	8.7			
Presence of self-learning textbooks which provide students with useful information	Frequency	25	76	61	117	21	3.11	1.11	35.69
	Percentage	8.3	25.3	20.3	39	7			
Sufficient interpretation and explanation of the concepts offered within the text books	Frequency	23	107	60	92	18	2.91	1.09	37.45
	Percentage	7.7	35.7	20	30.7	6			
Creating motivation in students for learning by studying the available educational resources	Frequency	26	64	73	111	26	3.15	1.12	35.55
	Percentage	8.7	21.3	24.3	37	8.7			
Few printed mistakes occur in the educational resources	Frequency	52	85	53	91	19	2.80	1.22	43.57
	Percentage	17.3	28.3	17.7	30.3	6.3			
Bolding the parts of the educational resources seemingly more important	Frequency	32	78	80	99	11	2.93	1.07	36.51
	Percentage	10.7	26	26.7	33	3.7			
Increase in the amount of the students' learning owing to the general behavioral objectives and the practices offered in the text books	Frequency	13	35	78	135	39	3.50	1	28.57
	Percentage	4.3	11.7	26	45	13			
Presence of enough solidity amongst different parts within the textbooks	Frequency	21	64	85	114	16	3.13	1.03	32.91
	Percentage	7	21.3	28.3	38	5.3			
Scientific explanation of the concepts offered within the text books	Frequency	24	48	87	127	14	3.19	1.02	31.97
	Percentage	8	16	29	42.3	4.7			
Easy-understanding and expressive concepts written in the textbooks	Frequency	30	71	57	119	23	3.11	1.15	36.97
	Percentage	10	23.7	19	39.7	7.7			

Table 17. Comparison between the average score of "educational resources" advantages and the assumed mean of 3.

Component	Average	Standard deviation	Standard error	T
Professors	3.08	0.652	0.037	2.35

the students' scientific status by the scores attained through the final exams (Table 20).

The single-variable T test was used to measure the amount of advantages in the component of "examinations" the results of which show that the observed T at the error level of $p \leq 0.05$ is greater than the critical quantity of the table (± 1.64). Therefore, the amount of the advantages related to exams is more than the average level; that is, the so-called advantages on the item of examinations, in view of the population of the study, has been placed higher than the average level (Table 21).

Table 18. Frequency and percentage distribution of the responses related to the disadvantages of educational resources.

Statements \ Scales		Complete disagreement	Disagreement	No comment	Agreement	Complete agreement	Mean	Standard deviation	Variance coefficient
Difficulties in understanding the content of the educational resources without classes	Frequency	18	66	63	99	54	3.35	1.17	34.92
	Percentage	6	22	21	33	18			
Inadequate students' knowledge obtained from the determined educational resources	Frequency	7	69	86	106	32	3.29	1.01	30.69
	Percentage	2.3	23	28.7	35.3	10.7			
Lack of coordination in the determined educational resources with the modern knowledge and information	Frequency	12	65	104	85	34	3.21	1.035	32.24
	Percentage	4	21.7	34.7	28.3	11.3			
Large-bulk educational resources	Frequency	13	35	78	87	87	3.66	1.14	31.14
	Percentage	4.3	11.7	26	29	29			
The small-bulk educational resources	Frequency	72	83	96	29	20	2.47	1.15	46.55
	Percentage	24	27.7	32	9.7	6.7			
Lack of students' access to the resources of practical units such as Classification, Subject Headings and References	Frequency	11	58	63	79	89	3.59	1.20	33.42
	Percentage	3.7	19.3	21	26.3	29.7			
Difficulties for students in preparing educational resources	Frequency	11	37	58	108	86	3.73	1.11	29.75
	Percentage	3.7	12.3	19.3	36	28.7			
Insufficient awareness of students about the specific resources of their major	Frequency	9	30	69	107	84	3.75	1.06	28.26
	Percentage	3	10	23	35.7	5.3			

Table 19. Comparison between the average score of "educational resources" disadvantages and the assumed mean of 3.

Component	Average	Standard deviation	Standard error	T
Professors	3.38	0.566	0.032	11.74

Disadvantages

The frequency distribution and percentage resulted from the responses related to the disadvantages of examinations shows that the highest point refers to the choice of "the high level of difficulty of exams' questions" with the average point of 3.36 and the least point refers to the choice of "centralized examining in distance education" with the average point of 2.73. Therefore, the ranking of the disadvantages related to the examinations of LIS in distance education shows that the first priority of disadvantages is given by LIS students to "the high level of difficulty of exams' questions" and after that come the items of presence of content mistakes in the exam questions, unacceptable measurement of the students' knowledge by the exam questions, presence of spelling mistakes in the exam questions, absence of acceptable scientific assessment of students by the multiple-choice exams, the differences between the exam questions and the content of the textbooks, and centralize examining (Table 22).

The single-variable T-test was used to measure the

Table 20. Frequency and percentage distribution of the responses related to the advantages of examinations.

Statements \ Scales		Complete disagreement	Disagreement	No comment	Agreement	Complete agreement	Mean	Standard deviation	Variance coefficient
disregarding negative scores from the multiple-choice exams	Frequency	10	8	9	35	228	5.54	0.96	21.14
	Percentage	3.3	2.7	6.3	11.7	76			
Centralized examining makes the grounds for identically examining the students of whole centers	Frequency	10	19	50	99	122	4.01	1.06	26.43
	Percentage	3.3	6.3	16.7	33	40.7			
Centralized examining is an advantage of distance education	Frequency	14	17	64	118	87	3.82	1.05	27.48
	Percentage	4.7	5.7	21.3	39.3	29			
Acceptable assessment of the students' scientific status by the scores attained through the final exams	Frequency	48	78	58	98	18	2.86	1.20	41.95
	Percentage	16	26	19.3	32.7	6			
Regarding a 6-score share for mid-term exam and 14 scores for final exam	Frequency	43	38	57	88	74	3.37	1.35	40.05
	Percentage	14.3	12.7	19	29.3	24.7			
Use of computer in calculating the scores to keep the independency for multiple-choice exams and avoid any interference from professors	Frequency	50	60	74	70	46	3	1.31	43.66
	Percentage	16.7	20	24.7	23.3	15.3			
Adding the scientific sores to the final score of the theory-practical units	Frequency	17	19	25	133	106	3.97	1.09	27.45
	Percentage	5.7	6.3	8.3	44.3	35.3			

Table 21. Comparison between the average score of "examination" advantages and the assumed mean of 3.

Component	Average	Standard deviation	Standard error	T
Professors	3.65	0.589	0.34	19.303

amount of disadvantages in the component of examinations the results of which show that the observed T at the error level of $p \leq 0.05$ is smaller than the critical quantity of the table (± 1.64). Therefore, the amount of the disadvantages related to exams is less than the average level; that is, the so-called disadvantages on the item of examinations, in view of the population of the study, has been placed lower than the average level (Table 23).

Ranking the components of the study

The Hotelling's T-Squared Test was used to make the rankings of the study components based on the structure of the questionnaires. The results related to the advantages of LIS in distance education (Table 24) demonstrate that the significant amount of F at $p \leq 0/05$ represents a significant difference among the components of the study; that is, the most of advantages refer to examinations and the least of those relate to class hours. Moreover, the results of the disadvantages of LIS in distance education (Table 25) show the significance of F at $p \leq 0/05$, which represents a significant difference among the study components; that is, the most of disadvantages refer to learning and the least of disadvantages refer to examinations.

Conclusion

The necessity for creation of suitable chances of worldwide education has resulted in creation of a kind of education from far distances and without class

Table 22. Frequency and percentage distribution of the responses related to the disadvantages of examinations.

Statements / Scales		Complete disagreement	Disagreement	No comment	Agreement	Complete agreement	Mean	Standard deviation	Variance coefficient
Centralized examining is a disadvantage in distance education	Frequency	33	101	102	41	23	2.73	1.07	39.19
	Percentage	11	33.7	34	13.7	7.7			
The differences between the exam questions and the content of the textbooks	Frequency	23	128	71	52	26	2.76	1.09	39.49
	Percentage	7.7	42.7	23.7	17.3	8.7			
The high level of difficulty of exams' questions	Frequency	14	56	85	96	49	3.36	1.102	32.79
	Percentage	4.7	18.7	28.3	32	16.3			
Unacceptable scientific assessment of students by the multiple-choice exams	Frequency	30	73	80	71	46	3.10	1.21	39.03
	Percentage	10	24.3	26.7	23.7	15.3			
Unacceptable measurement of the students' knowledge by the exam questions	Frequency	47	74	75	66	38	2.91	1.26	43.29
	Percentage	15.7	24.7	25	22	12.7			
Presence of spelling mistakes in the exam questions	Frequency	17	96	91	65	31	2.99	1.086	36.32
	Percentage	5.7	32	30.3	21.7	10.3			
Presence of content mistakes in the exam questions	Frequency	15	60	88	87	49	3.31	1.11	33.53
	Percentage	5	20	29.6	29	16.3			

Table 23. Comparison between the average score of "examination" disadvantages and the assumed mean of 3.

Component	Average	Standard deviation	Standard error	T
Professors	3.02	0.658	0.038	0.702

Table 24. The results of the Hotelling test amongst the advantages of research components.

Research components	Mean	Standard deviation	f	Df1	Df2	p
Examinations	3.65	0.589				
Learning	3.19	0.622				
Educational resources	3.088	0.652	67.65	4	296	%
Professors	3.043	0.725				
Class hours	2.93	0.833				

attendance. On the other hand, as the higher education involves special requirements for scientific growth of specialists and such requirements may not be achieved through distance education, recognition of advantages and disadvantages of different majors in distance education as well as the recognition of the majors best fit

Table 25. The results of Hotelling test amongst the disadvantages of research components.

Research components	Mean	Standard deviation	f	Df1	Df2	p
Learning	3.85	0.697				
Class hours	3.62	0.769				
Educational resources	3.38	0.566	76.48	4	296	%
Professors	3.37	0.648				
Examinations	3.02	0.658				

the distance education system could improve the status of such a system of education. The distance education students should be considered as one of reliable intellectual resources for investigating the advantages and disadvantages of the system. Therefore, the present study has attempted to identify the advantages and disadvantages of LIS in distance education based on the viewpoint of the students of the major. This survey study was carried out by use of two questionnaires within two rounds. The results of the first questionnaire were used to arrange the second questionnaire.

The total results of the study on the so-called advantages showed that the items of examinations, learning, educational resources, professors, and class hours, in priority, have been considered by the LIS students. The students concerned the matters of student-centered method, no force for attending classes and as a consequence, finding suitable chances for other favorites, self-dependence attitude due to absence of full-time professors as compared to the traditional students, an increase in the student's learning owing to the general behavioral objectives and the practices provided in the textbooks, and disregarding the negative scores of multi-choice exams as the most important items in distance education.

The LIS students appointed the priorities of the disadvantageous items of LIS in distance education respectively in the order of learning, class hours, educational resources, professors, and examinations. The statements of insufficient practical rehears at site, inadequate students' familiarity with the library e-resources, lack of students' practical capabilities due to the short time of the classes, limited access to professors, incomplete students' awareness of their specific resources, and the very difficult exam questions were introduced as the matters of greatest importance by the LIS students of distance education.

Suggestions of the study

Based on the results of the study following suggestions could be offered:

1. Paying more attention to the facilities required for the practical courses of LIS.
2. Increasing the practical hours offered during the term.
3. Enhancing the hours specified for meeting the students' problems of theoretical courses, especially for those interested in participating such sessions.
4. Paying more attention to selection of the invited professors.
5. More attention to the qualitative level of the textbooks
6. More attention to the qualitative level of the exam questions.

Suggestions for future studies

Based on the results of this study and absence of the studies on investigating distance education from different dimensions in different majors, carrying out the same studies amongst different statistical populations and majors is severely suggested for future studies. Nevertheless, we also propose doing more practical research in the field of distance education.

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