

## WEB-BASED DISTANCE EDUCATION: OPPORTUNITIES AND THREATS

\*SAFA FARROKHI<sup>1</sup>, MOHAMAD CHIZARI<sup>2</sup> AND MEHDI MIRDAMADI<sup>3</sup>

1- Department of Agricultural Extension and Education, Ilam Branch, Islamic Azad University, Ilam, Iran.

2- Department of Agricultural Extension and Education, Tarbiat Modarres University, Tehran, Iran.

3- Department of Agricultural Extension and Education, Science and Research Branch, Islamic Azad University, Tehran, Iran.

*\*Corresponding author:* E-mail: [sfarrokhi@ilam-iau.ac.ir](mailto:sfarrokhi@ilam-iau.ac.ir)

---

**Abstract:** This exploratory research was carried out to identify opportunities and threats of developing web-based distance education in Iranian higher education system using Delphi method. Classification of the opinion of panelists suggested main opportunities as followings: ever-increasing demands for this kind of educational system; alleviating brain drains; possibility of extending the system across the country; balanced and quick distribution of information; extending the international relations by universities; faster feedback system; Also, The most important threatening impediments include the followings: looking at this kind of educational system as a business; poor delivery system; those how disseminate the education are not competent; low relative rate of computer literacy; decreasing the social relations.

**Key words:** drought, summer season and grain yield.

---

### INTRODUCTION

Internet today has become an integrated channel to exchange and distribute information among people regardless on which geographical location they are. Also, the web-based distance education system has been extending. Hence encouraging many developed countries to substitute it for their conventional education system.

The web-based distance education system has paved the way to increase possibility of a more accurate and easier

transferring of training, an around the clock delivery of education, decreasing the traffic load of conventional education system, and decreasing the educational expenses (Walter, 2010). This system of education has the following characteristics:

Geographical and temporal distance between learner and teacher; educational material is delivered by an organization not by the instructor; applying modern technologies in delivering the content; possibility of instilling a two way communication between the two sides;

increasing the self-learning in comparison to group learning; participation of the instructor in the process of teaching-learning; and development of self-learning by students (Williams, 2006., Young, 2006).

This kind of educational system is believed to have been very successful in solving many problems of the conventional higher education system. Some of these problems are restricted capacity of universities in accepting more students, time inflexibility of universities in providing face to face education and high expenses of education (Valeria, 2009).

Notwithstanding the advantages of the web-base education system, many of those programs delivered through internet and the web are abused by people and organizations. The main reason for this mistreatment is mostly the lack of university managers' knowledge and skills on how to integrate such a method of education to the clientele especially in countries in which using internet is still young. Applying distance education technology requires experts who master the know-how on this technology. Furthermore, most of the courses delivered through the web-based system in developing countries are those which in fact are appropriate for the developed countries and are not adaptable to their needs and cultures(Lee, 2004., Young, 2006). In conclusion, one can say that the web-based education system is faced with many opportunities and threats as well.

While the studies have established investigating opportunities and threats of distance education system, In this research, base is to identify opportunities and threats of developing web-based distance education in Iranian higher education system. It is clear that in neglecting this matter, there is no chance for being successful in executing related planning.

For rational implementation of the web-based distance education, it was necessary to identify the current situation in Iranian higher education system. Furthermore, successful identification of the situation could provide policy makers and managers with improved insight into practical strategies for the development of web-based distance education. Thus, the research question is: what are the major opportunities and Threats facing development of web-based distance education in Iran.

### **Purpose and Objective**

The purpose of this study was to develop a consensus document that would identify those opportunities and threats that serve as problems and incentives to the web-based distance education implementation. The objective of the study was to identify the major opportunities and threats facing web-based distance education in Iranian higher education system by experts.

### **METHODOLOGY**

This study used Delphi method to identify opportunities and threats that Iranian higher education system face in implementing web-based distance education. Delp et al(1977) and Dyer, Breja and ball(2003) described the Delphi method as a group process used to Solicit, collate and direct expert responses toward reaching consensus. Helmer (1966) described the Delphi method as a method of securing and refining group opinions and substituting computed consensus for and agreed-upon majority opinion. Stufflebeam et al (1985) noted the Delphi method is specifically effective in obtaining consensus from a purposively selected group of experts.

Having identified 5 experts whose expertise was confirmed by the research committee, we communicated them to introduce more experts to develop the

panel to a satisfactory level. They introduced 18 more members to be included in the study. Then we asked these 18 experts to name more experts, resulting in identifying 6 more experts. As one can conclude, we have applied snowball and judgment sampling technique to gather the data.

We applied Kendal coefficient to determine the consensus scale. Using the follow equation, the coefficient is used to determine the degree of agreement between a couple of priorities related to N people or things.

The population for this study consisted of managers, consultants, experts, faculty members, writers and researchers regarding distance education. In total, 4 out of 29 selected people were reluctant to participate; 2 were removed as they did not reply back. Finally, the number of panelists reduced to 23. Ranjibare(2007) stated that the reliability was greater than %80 when Delphi group size is larger than 13. The expertise of panelists is displayed in table (1).

The study used a series of four mailed questionnaires. Moore (1987) noted that a series of mailed questionnaires was the typical methodology of the Delphi method. The first round of the study used a questionnaire with the open-ended

question: What are the major opportunities and threats confronting the web-based distance education in Iranian higher education system? An open-ended question was used to facilitate the generation of a wide array of response categories. Responses were categorized to produce items for a second round questionnaire. Questionnaires were validated using experts not included in the study. In the second questionnaire, respondents were asked to rate the items identified in round one on a five-point Likert-type scale (1-1.5= strongly disagree, 1.51-2.5=disagree, 2.51-3.5=uncertain, 3.51-4.5=agree, 4.51-5=strongly agree).

The third questionnaire sought to determine consensus. Panel members were asked to indicate the agreement level of the opportunities and threats, and to provide comments if they could not agree with the summary findings. Consensus was reached on 25 of 28 items in this round. A fourth round was initiated in an attempt to reach consensus on the remaining items. The fourth and final questionnaire also asked the respondents to indicate if opportunities and threats are the same as the modified ones from round three. Consensus was reached on 11 opportunities and 12 threats in this round.

### Analysis of Data

Data were analyzed using descriptive statistics. Data collected using Likert-type scales were treated as interval data and reported as means and standard deviations.

Table 1: Delphi panel members

<i>Profession and activity area of panelists</i>	<i>n</i>
Manager, consultant and expert	6
Faculty member of university	12
Writer and researcher	5

Table 2: Delphi study round One: ordered opportunities based on the level of agreement (n=23)

<i>Opportunities</i>	<i>M</i>	<i>Std</i>	<i>Level of agreement</i>
balanced and quick distribution of information	4.55	1.13	strongly agree
removing temporal and spatial limitations	4.51	1.19	strongly agree
integrating work and education	4.43	0.99	agree
extending the international relations by universities	4.36	1.26	agree
delivery to abroad students possibilities	4.35	1.16	agree
improving basic English skills	4.24	0.76	agree
cheaper educational facilities	4.16	1.07	agree
ever-increasing demands	4.06	0.83	agree
faster feedback system	3.81	1.21	agree
possibility of extending the system across the country	3.69	0.74	agree

Table 3: Delphi study round One: ordered threats based on the level of agreement (n=23)

<i>Rank</i>	<i>Threats</i>	<i>M</i>	<i>Std</i>	<i>Level of agreement</i>
1	decreasing the social relations	4.62	1.17	strongly agree
2	extending across all areas of specialization	4.56	0.99	strongly agree
3	incompetent dissemination of education	4.52	1.13	strongly agree
4	weakness in basic English skills	4.31	1.19	agree
5	unbalanced access to internet in rural and urban areas	4.24	0.86	agree
6	low internet bandwidth	4.17	1.06	agree
7	poor delivery system	3.97	0.96	agree
8	Weakness in computer literacy	3.82	0.79	agree

List of opportunities and threats identified by panelists in round one, and number of respondents for each problem is showed in alphabetic order in tables 4 and 5.

Table 4: Opportunities identified by panelists in round one

<i>Opportunities</i>	<i>n</i>
alleviating brain drains	6
new orientation to Information society	5
political and financial support by the government	8
using abroad instructors possibilities	9

Table 5: Threats identified by panelists in round one

<i>Threats</i>	<i>n</i>
looking at this kind of educational system as a business	8
low validity of the distance courses and certificates	7
extending this system across all areas of specialization	4
low pragmatism	11
low tendency to Cyber courses	4
lack of professionals and skillful instructors	6

Table 6: Delphi study round Two: ranked opportunities based on the level of

agreement (n=19)

<i>Rank</i>	<i>Opportunities</i>	<i>M</i>	<i>Std</i>	<i>Level of agreement</i>
1	political and financial support by the government	4.39	1.23	agree
2	using abroad instructors possibilities	4.33	0.96	agree
3	new orientation to Information society	3.46	1.12	uncertain
4	alleviating brain drains	3.32	1.29	uncertain

Table 7: Delphi study round Two: ranked threats based on the level of agreement (n=19)

<i>Threats</i>	<i>M</i>	<i>Std</i>	<i>Level of agreement</i>
1 looking at this kind of educational system as a business	4.61	1.23	strongly agree
2 low validity of the distance courses and certificates	4.56	1.29	strongly agree
3 low pragmatism	4.52	0.96	strongly agree
4 extending this system across all areas of specialization	4.21	1.12	agree
5 lack of professionals and skillful instructors	4.19	1.61	agree
6 low tendency to Cyber courses	3.23	0.87	uncertain

Table 8: Delphi study round Three: ranked opportunities based on the level of agreement (n=17)

<i>Rank</i>	<i>Opportunities</i>	<i>M</i>
1	balanced and quick distribution of information	4.55
2	removing temporal and spatial limitations	4.51
3	integrating work and education	4.43
4	political and financial support by the government	4.39
5	extending the international relations by universities	4.36
6	delivery to abroad students possibilities	4.35
7	using abroad instructors possibilities	4.33
8	improving basic English skills	4.24
9	cheaper educational facilities	4.16
10	ever-increasing demands	4.06
11	faster feedback system	3.81
12	possibility of extending the system across the country	3.69

Table 9: Delphi study round Three: Ranked threats based on the level of agreement (n=17)

<i>Rank</i>	<i>Threats</i>	<i>M</i>
1	decreasing the social relations	4.77
2	extending across all areas of specialization	4.74
3	incompetent dissemination of education	4.72
4	weakness in basic English skills	4.69
5	unbalanced access to internet in rural and urban areas	4.68
6	low internet bandwidth	4.65
7	poor delivery system	4.64
8	looking at this kind of educational system as a business	4.61

9	low validity of the distance courses and certificates	4.56
10	low pragmatism	4.52
11	extending this system across all areas of specialization	4.21
12	lack of professionals and skillful instructors	4.19
13	Weakness in computer literacy	3.82

Table 10: Delphi study round Four: final list of ranked opportunities (n=17)

<i>Rank</i>	<i>Opportunities</i>	<i>M</i>
1	balanced and quick distribution of information	4.57
2	removing temporal and spatial limitations	4.52
3	integrating work and education	4.46
4	political and financial support by the government	4.35
5	extending the international relations by universities	4.35
6	delivery to abroad students possibilities	4.32
7	using abroad instructors possibilities	4.29
8	improving basic English skills	4.25
9	cheaper educational facilities	4.19
10	ever-increasing demands	4.11
11	faster feedback system	3.81
12	possibility of extending the system across the country	3.69

Table 11: Delphi study round Four: final list of ranked threats (n=17)

<i>Rank</i>	<i>Threats</i>	<i>M</i>
1	decreasing the social relations	4.73
2	extending across all areas of specialization	4.69
3	incompetent dissemination of education	4.68
4	weakness in basic English skills	4.68
5	unbalanced access to internet in rural and urban areas	4.65
6	low internet bandwidth	4.63
7	poor delivery system	4.61
8	looking at this kind of educational system as a business	4.61
9	low validity of the distance courses and certificates	4.59
10	low pragmatism	4.55
11	extending this system across all areas of specialization	4.28
12	lack of professionals and skillful instructors	4.23
13	Weakness in computer literacy	3.93

## RESULTS

This study sought to identify the major opportunities and threats in implementing web-based distance education. To accomplish this objective, the Delphi

method of obtaining panelist's consensus was employed. Based on literature review, a primary list consisted of 18 cases of opportunities and threats were identified. The primary list is indicated as follows:

Identified opportunities are showed in table 2 including: integrating work and education; balanced and quick distribution of information; cheaper educational facilities; ever-increasing demands; extending the international relations by universities; faster feedback system; improving basic English skills; delivery to abroad students possibilities; possibility of extending the system across the country; removing temporal and spatial limitations .

Identified threats are showed in table 3 including: decreasing the social relations; extending across all areas of specialization; unbalanced access to internet in rural and urban areas; low internet bandwidth; Weakness in computer literacy; poor delivery system; incompetent dissemination of education; weakness in basic English skills.

In round one, panelists chose 10 opportunities and threats (out of a 18 impediment list) as "agree and strongly agree" in implementing web-based distance education. These were chosen out of those identified based on prior researches which were included in the questionnaire as close-ended choices. The result was identification of 7 more opportunities and threats which were finally refined and decreased to 25, including 12 opportunities and 13 threats as mentioned by the respondents.

In round two, a questionnaire including 4 opportunities and 6 threats identified through the first round was distributed among panelists and they were asked to rate them on Likert-type scale. They were also asked to make changes in

the items to better clarify the impediments, if necessary. After this round, 2 opportunities and 5 threats were ranked as "agree and strongly agree" by panelists. We used mean and standard deviation to rank them. The result is displayed in tables 6 and 7.

In this way, panelists named 25 opportunities and threats as "agree and strongly agree" out of 28 cases (18 cases based on prior research and 7 ones based on panelists experience and knowledge). In round three, we re-distributed the questionnaire among respondents.

The questionnaire included 25 opportunities and threats all been determined and their degree of importance identified by panelists. The result of third round is displayed in table 8 and 9. As shown in the tables, in third round, panelists have named 25 opportunities and threats as "agree and strongly agree" in implementing the web-based distance education in Iranian higher education system.

The result of four rounds of Delphi study showed that we could end the rounding because of the following:

More than 50% of the respondents have chosen the first 25 opportunities and threats identified by the panelists as their first 25 choice.

Standard Deviation of the responses for the agreement with each opportunities and threats has reduced from 0.97 to 0.61 in two first rounds.

The Kendal coefficient of responses in fourth round was 0.53 which is statistically significant.

The Kendal coefficient for the order of opportunities and threats in fourth round has only increased to 0.37 which is not a significant increase.

In round Four, the questionnaire was re-distributed and rechecked among respondents. The final list of ranked opportunities and threats is indicated in tables 10 and 11.

## DISCUSSION

As indicated in table 10, the major opportunities identified by the Delphi method in implementing the web-based distance education in Iranian higher education system were: balanced and quick distribution of information, removing temporal and spatial limitations, integrating work and education, political and financial support by the government, extending the international relations by universities, delivery to abroad students possibilities, using abroad instructors possibilities, improving basic English skills, cheaper educational facilities, ever-increasing demands, faster feedback system and possibility of extending the system across the country.

Based on table 11, the major threats were decreasing the social relations, extending across all areas of specialization, incompetent dissemination of education, weakness in basic English skills, unbalanced access to internet in rural and urban areas, low internet bandwidth, poor delivery system, looking at this kind of educational system as a business, low validity of the distance courses and certificates, low pragmatism, extending this system across all areas of specialization, lack of professionals and skillful instructors and weakness in computer literacy.

## IMPLICATIONS AND RECOMMENDATIONS

For programming and developing the use of web-based distance education in Iran, the essential requirement is the identification of the most important opportunities and threats. Without this, every type of action will be failed and it will cause the waste of financial resources.

Regarding the most principal identified threats, it is necessary to pay more attention to activities like increasing e-readiness, developing informatics society, enhancing team working spirit and strengthening social relations, further pragmatism and competency in executing and evaluation of education process, providing the essential infrastructures for e-learning, providing the essential software, increasing the internet speed and band width, increasing computer knowledge and basic English language skills, distribution of internet network especially in rural areas, decreasing the cost of internet access, mass media propaganda, developing advertising brochures and educational workshops, positive orienting to digital education, free consultative services about web-based distance education, providing sufficient professionals and skillful instructors, introducing competitive advantages, benefits and potential risks of this type of education, decreasing uncertainty conditions, providing the requirements for foreign instructors and students and finally introducing suitable educational fields.

## REFERENCES

- Delp P, Thesen A, Motiwalla J, Seshadri N (1977) Delphi: System tools for project planning. Columbus, OH: National Center for Research In Vocational Education. The Ohio State University.
- Dyer J, Breja L, Ball A (2003) A Delphi study of agricultural teacher perceptions of problems in students retention. Journal of Agricultural Education. 44. PP 86-95.
- Fathian, M, Mahdavi Noor SH (2009) Information and technology foundations and management. Tehran: IUST Press.

- Helmer O (1966) *Social Technology*. New York, NY: Basic Books.
- Lee, Y., Driscoll, M. & Nelson, D. (2004). The past, present and future of research in distance education: results of a content analysis. *The American journal of distance education*. 18, 4.
- Moore CM (1987) *Group techniques for idea building*. Newbury Park, CA: Sage Pub.
- Pomales C, Lin Y (2006) Web-based distance learning technology: the impact of web module length and format. *The American journal of distance education*. 20, 3.
- Ranjibare A (2007) *The Delphi method: An experimental study of group opinion*. Santa Monica, the Rand Corp.
- Stufflebeam DL, McCormick CH, Binkerhoff RO, Nelson CO (1985) *Conducting educational needs assessments*. Boston: Kluwer Nijhoff Pub.
- Valeria A (2009) *Distance education in developing countries*. Isfahan: Jah. Dan. Pub.
- walter G (2010) *Distance education. The official journal of the open and distance learning association*. Vol 32. Routledge Inc.
- Williams S (2006) The effectiveness of distance education in allied health science programs: A meta analysis of outcomes. *The American journal of distance education*. 20, 3.
- Young S (2006) Student view of effective online teaching in higher education. *The American journal of distance education*. 20, 2.