

Concerns of Instructors Delivering Internet-based Instruction

Dr. Amjad Abuloum
Faculty of Educational Sciences
The Hashemite University

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Abstract

The purpose of this study was to quantify the concerns of a Jordanian university's instructors who have developed and are currently teaching Internet-based courses.

The study surveyed (39) instructors from different disciplines during the first semester of the academic year 2005/2006. A Likert-type concerns scale was developed based on careful review of literature and analysis of informal interviews with instructors involved in the development and delivery of Internet-based courses. In addition to descriptive analyses, chi-square tests were used to analyze data collected.

Results of the study indicated that instructors' top four concerns were: (1) sufficient time to develop and maintain course material, (2) technical support and technical training, (3) administrative support, and (4) sufficient time to interact with students. The results also showed that instructors' concerns about Internet-based instruction were not significantly different based on the discipline.

The information provided by this study is expected to update administrators and decision-makers of the current concerns of Internet-based instructors so an effective Internet-based education can be fostered. Based on the findings of this study, several recommendations were offered.

اهتمامات مُدرسي المساقات الجامعية المبنية على الإنترنت

د. أمجد محمد أبو لوم

قسم المناهج وطرق التدريس

كلية العلوم التربوية- الجامعة الهاشمية

الملخص

هدفت هذه الدراسة إلى تحديد وقياس اهتمامات مدرس المساقات المبنية على الإنترنت. شملت هذه الدراسة (٣٩) مدرساً من التخصصات المختلفة ، وذلك خلال الفصل الدراسي الأول للعام الدراسي ٢٠٠٥/٢٠٠٦. تم تطوير إستبانة بإستخدام مقياس ليكرت وذلك في ضوء المراجعة الأدبية للدراسة وفي ضوء تحليل اللقاءات غير الرسمية مع المدرسين المنخرطين في تطوير وتدريس المساقات المبنية على الإنترنت. بالإضافة للتحليل الوصفي، تم استخدام اختبارات كاي التربيعية لتحليل البيانات التي تم جمعها.

أشارت نتائج الدراسة إلى أن أعلى أربع جوانب تهم هؤلاء المدرسين هي: (١) الوقت الكافي لتطوير المواد التعليمية والحفاظ عليها، و(٢) الدعم التقني والتدريب التقني، و(٣) الدعم الإداري المؤسسي، و(٤) الوقت الكافي للتفاعل مع الطلبة. وأشارت النتائج أيضاً إلى أن هذه المسائل لا تختلف بدلالة احصائية باختلاف التخصص.

ومن المتوقع أن المعلومات التي توفرها هذه الدراسة ستزود المسؤولين ومنتخذي القرارات بآخر ما يهم مدرسي المساقات المبنية على الإنترنت، مما يشجع على تحقيق تعليم فعال مبني على الإنترنت. واستناداً إلى نتائج هذه الدراسة، تم عرض عدد من التوصيات.

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Introduction

The development in learning technologies has caused Internet-based instruction to flourish and become more popular (Newton, Marcella, & Middleton, 1998; Liu, Walter, & Brooks, 1998). In addition to be engaged in a self-paced learning strategy, learners who participated in online instruction were expected to engage in a variety of online communications including synchronous or asynchronous interaction with other learners and instructor, email, virtual field trips, bulletin boards, and voice communication through Internet audio streaming (Richter, 2001; Kumari, 2001; Wang, Hinn, & Arvan, 2001).

In the literature, some researchers showed an evidence of the effectiveness of using the Internet and its related technologies. For example, Doucette (1994) explained the use of multimedia as a new technology that allows students to learn at their own pace while being sensitive to the various learning styles. He found (a) high completion rates, (b) increased student demand for courses using multimedia, and (c) increased number of faculty members unwilling to return to classroom-based instruction.

Riddle (1993), cited in Gayton and Slate (2003), utilized multimedia in an elementary classroom. She found that the use of multimedia tools (a) enhanced students' development of ideas, (b) increased students' motivation level, (c) increased peer collaboration, and (d) increased satisfaction level because students were proud of their work. Similarly, a study completed by Devlin and James (2003) in Australia concluded that the impact of multimedia and educational technology could provide some indication of improved student learning.

Several studies indicated that students participating in Internet-based courses have similar test scores as students participating in traditional courses. For instance, studies conducted by Liu, MacMillan, & Timmons

(1998), Morrissey (1998), Smeaton & Keogh (1998), Bradford (1999), Collins (2000), Dutton, Dutton, & Perry (2001), Paskey (2001), Parker & Gemino (2001), Tacker (2001), and Lynch (2002) to compare the effectiveness of Internet-based courses to that of traditional courses led to the conclusion that Internet-based education is as effective as traditional classroom education. Moreover, there is evidence that student ratings of various aspects of courses are also similar for Internet-based and traditional modes (Spooner, Jordan, Algozzine, & Spooner, 1999).

Another study conducted by Navarro & Shoemaker (2000) concluded that learners in Internet-based environments learn as well as or sometimes better than traditional learners, regardless of gender, ethnicity and academic background. Moreover, Hartman, Dziuban, & Moska (2000) found that in an Asynchronous Learning Network (ALN) course there were lower withdrawal rates and higher success rates. Therefore, Internet-based instruction can be seen as a means of improving productivity, efficiency and interaction (Weller, 2002).

According to Sinn (1998), Internet-based delivery can actually enhance teaching and learning. It can make teachers and learners better organized and more efficient; help teachers and learners to be more dynamic, flexible, and agile; and enhance quality assessment and make it more readily evidenced. Along this line, Rosenberg (2000) stated that Internet-based instruction has the potential of allowing learners to access up-to-date information anywhere and anytime, promoting active and independent learning, and supporting communication between experts and novices.

In sum, research evidences pointed out that Internet-based instruction has virtues which were beneficial for education. Attracted by these virtues, higher education institutions have witnessed a growing rate of delivery of Internet-based courses. However, it is the faculty members who play the key role in the successful design and implementation of these courses (Betts, 1998). Therefore, understanding instructors' concerns is pivotal to the success of Internet-based instruction.

Research has shown that instructors desire training and support in their efforts to teach Internet-based courses, especially in the areas of developing interaction with students, developing instructional materials, and applying selected technologies (Schauer, Rockwell, Fritz, & Marx, 1998). Along

the same line, Sherron (1998) emphasized the critical importance of instructor training to the success of Internet-based instruction. Similarly, Wang-Chavez and Branon's research findings reported in 2001 showed a critical need for interaction between the instructor and the students for Web/Internet-based instruction.

In a study conducted by Elrod and Kelly (1998), instructors who teach Internet-based courses usually have serious concerns like: the impact of courses on workload, changing role of the instructor, the quality of instruction, evaluation of instructor performance, and academic honesty. Recently, Zheng and Smaldino (2006) reported several concerns for instructors involved in Internet-based instruction. These included student-student communication, student participation, technical support and technical training, time consumed in the delivery of the course, and students' access to the CMS (Course Management System) used in the course.

This study investigated a Jordanian university's experience with Internet-based instruction. The Hashemite University has started to add Internet-based courses to its traditional curricula. The administration of the University extremely believes in the contribution that instructors can substantially make to the advancement of the process of designing and implementing Internet-based courses.

According to Abuloum & Al-Khadash (2005), Internet-based instruction at the Hashemite University is originally based on an intensive, well prepared workshop that was held in summer of the year 2003. Several instructors representing different departments were purposefully selected to participate in the workshop. Instructors were trained on various techniques and methods used in designing Internet-based courses. The workshop resulted in a number of courses that were believed to be taught in a hybrid mode, which consists of both classroom face-to-face instructions and completely online instructions. This mode of instruction moves a significant portion of the learning activities from the classroom to the Internet. The instructor and the students have the advantages of real-time exchange in scheduled classes but have the benefit of continuing the discussion and assignments in the spaces between meetings. A Course Management System was used to deliver these "hybrid mode" courses.

In a hybrid mode course, face-to-face lectures are supplemented by a

diversity of Internet-based materials including collections of interactive, collaborative practice materials as a supplement to the textbook and extensive files of repeatable practice quizzes. As part of the assessment, students are required to complete assignments that are designed to boost students' relationship with the course. Participation in online discussion forums is also required from students as part of the assessment (Abuloum & Al-Khadash, 2005).

Therefore, the purpose of this study was to explore the concerns of the Hashemite University instructors who have developed and are currently delivering Internet-based courses. In a broader view, the findings of this study are believed to be helpful in achieving a proper and successful integration of Internet-based instruction into the educational settings of the Hashemite University.

Statement of the Problem

As mentioned earlier, Internet-based instruction had the potential of enhancing teaching and learning (Rosenberg, 2000). As a result, the use of Internet-based courses is widespread and rapidly growing. Universities and colleges all over the world have been developing these courses to supplement their traditional ones. According to Dutton, Dutton, and Perry (2001), this trend of development will only accelerate as instructors are urged to create more Internet-based courses. Therefore, understanding instructors' concerns is vital to the success of the process of creating more of these courses.

As the case with other universities around the world, the Hashemite University in Jordan has started to integrate Internet-based instruction into its educational settings. To expedite the process of creating Internet-based courses, it is believed that the concerns of instructors who are involved in the design and delivery of these courses have to be analyzed and understood.

Therefore, this study was undertaken to inspect the concerns of instructors who have developed and are currently delivering Internet-based courses at the Hashemite University.

Purpose of the Study

The purpose for conducting this study was to provide a priority list of the concerns of instructors who have developed and are currently teaching Internet-based courses at the Hashemite University.

Significance of the Study

Identifying the concerns of instructors who have developed and are currently teaching Internet-based courses was the main purpose for conducting this study. The experiences and concerns provided by these instructors can be very beneficial for university administrators and higher education policy-makers in planning and designing Internet-based instruction that entices instructors and their students. More specifically, the prioritized list of instructors' concerns provided by this study can be very helpful in the design and implementation of successful Internet-based courses.

Study Questions

This study was conducted to answer the following two research questions:

- 1- What are the concerns of instructors who have developed and are currently teaching Internet-based courses at the Hashemite University?
- 2- Do instructors in different disciplines have different concerns?

Delimitations and Limitations

The delimitations and limitations of this study included the following:

- The target population of the study was limited to instructors of the Hashemite University who had developed and were teaching Internet-based courses during the first semester of the academic year 2005-2006.
- This study was delimited to the use of a survey instrument as the primary method of gathering data.

Definitions of Terms

The following defined terms were required for the purpose of this study:

Interne-based instruction: is a method of providing a learning environment that is mediated and supported by the attributes and resources of the Internet. It is an increasingly popular method for delivering university

courses (Brooks, Nolan, & Gallagher, 2001).

Concern: is the composite of feelings, preoccupation, thought, and consideration given to an issue or task (Hall & Hord, 1987).

Methodology and Procedures

Population and Sample of the Study

The population of the study comprised all the Hashemite University instructors who had developed and were teaching Internet-based courses during the first semester of the academic year 2005-2006. Based on a list obtained from the Hashemite University, the participating target population consisted of 47 instructors. The sample of the study was the whole population. However, eight instructors were excluded from the sample because they participated in the pilot study. Therefore, the actual sample utilized in the study consisted of 39 instructors. Table 1 presents the distribution of these instructors according to their disciplines.

Table 1
Distribution of Participating Instructors in Terms of Their Disciplines

Discipline	Number of Instructors
Humanity	10
Social Science	9
Science/Technology	11
Business	9
Total	39

The Instrument

In addition to collecting information regarding the different disciplines of instructors, the survey instrument employed in this study was developed to measure instructors' concerns about Internet-based instruction. For the latter purpose, a concerns scale was developed. It consisted of 9 items that were believed to be among the most frequently cited concerns by instructors who develop and deliver Internet-based instruction. More precisely, these concerns were developed after (1) careful review of instructors' concerns scales grounded in the literature (Maguire, 2005; Gabriel & Longman,

2004; Volery, 2000; Elrod & Kelly, 1998) and (2) analysis of informal interviews with instructors involved in Internet-based instruction in several Jordanian institutions. The concerns scale, displayed in Table 2, rated the nine items on a 5-point Likert-type scale, with 5 equaling "Very high" concern, 4 equaling "High" concern, 3 equaling "Medium" concern, 2 equaling "Low" concern, and 1 equaling "Very low" concern. A space was available below each concern for instructors' comments on the concern.

Table 2
Items of the Concerns Scale

Items	Scale*				
	5	4	3	2	1
Sufficient time to interact with students	5	4	3	2	1
Student access to computers	5	4	3	2	1
Technical support and technical training	5	4	3	2	1
Sufficient time to develop and maintain course material	5	4	3	2	1
Student assessment/grading	5	4	3	2	1
Administrative support	5	4	3	2	1
Student familiarity with computers	5	4	3	2	1
Equipment problems	5	4	3	2	1
Academic honesty	5	4	3	2	1

* 5=Very High, 4=High, 3=Medium, 2=Low, 1=Very Low

Validity of the Instrument

The validity of the instrument was verified first through a panel of five Ph.D. holders; two instructional technologists and three e-learning specialists. The panel was asked to rate items of the survey for clarity and usefulness in measuring instructors' concerns about Internet-based instruction. Suggestions and recommendations obtained from the panel were mainly related to the concerns scale, which at the beginning had 11 items. Based on these suggestions and recommendations, two items were deleted because of weak relevance and three others were rephrased because of ambiguity. Having done these changes, the survey was then administered to a randomly selected sample of 8 instructors who were involved in the design and delivery of Internet-based instruction during the first semester of the academic year 2005-2006. These instructors, who were eventually excluded from the main sample of the study, were kindly asked to respond to the survey and to submit their comments regarding the

clarity of the survey items. Feedback obtained from the instructors was employed in preparing the final version of the survey.

Internal Consistency of the Instrument

To determine the internal consistency of the survey instrument, data were collected from the main sample of the study (i.e. the 39 instructors) were used to calculate coefficient alpha reliability for the concerns scale, which turned out to be .81. According to Koohang & Durante (2003), such a figure suggests that the scale was suitable for the purpose it was designed for (i.e. measuring instructors' concerns about Internet-based instruction).

Statistical Analysis of Data

The Statistical Package for Social Sciences (SPSS) was used to generate frequencies and measures of central tendency for the variables used in this study. Chi-square tests were conducted to determine if there was a difference in instructors' concerns based on the discipline (humanity, social science, science/technology, or business).

Results of the Study

As mentioned earlier, participants of this study were the Hashemite University instructors who had developed and were teaching Internet-based courses during the first semester of the academic year 2005/2006. Their teaching fields were from various disciplines: 23% social sciences, 26% humanities, 28% science/technology, and 23% business. Their typical workload was broken down as follows: teaching 63%, research 18%, community service 8%, and other 8%. The "other" category was mostly administrative duties. While most of the instructors (around 77%) were males, only 23% were females. Forty-six percent of the instructors were in their forties of age (from 40 to 49), 28 percent in their thirties (from 30 to 39), 5 percent in their late twenties, and 21 percent at the age of 50 or above. In terms of years of teaching experience, 31% of the instructors had less than 5 years of experience, 28% had from 5 to 10 years, 36% had from 11 to 15 years, and 5% had above 15 years of experience.

The first research question was concerned in instructors' concerns about Internet-based instruction. Table 3 ranks these concerns in descending

order: from the first concern at the top with a mean of 4.20 (out of 5) and a standard deviation of 0.656 to the ninth concern at the bottom with a mean of 2.67 and a standard deviation of 0.621. For the rest of the concerns (the second to the eighth), the means vary from 3.69 to 2.79. In general, these figures suggest a clear difference in instructors' rating for concerns mentioned in the survey. In other words, there is a noticeable distinction in rating concerns when you move from the top to the bottom of Table 3.

Table 3
Concerns Ranked in Descending Order

#	Concern	N	Mean	SD
1.	Sufficient time to develop and maintain course material.	39	4.20	0.656
2.	Technical support and technical training.	39	3.69	1.029
3.	Administrative support.	39	3.56	0.882
4.	Sufficient time to interact with students.	39	3.46	0.884
5.	Student access to computers.	39	3.21	0.894
6.	Student familiarity with computers.	39	3.03	0.903
7.	Equipment problems.	39	2.89	0.718
8.	Academic honesty.	39	2.79	0.522
9.	Student assessment/grading.	39	2.67	0.621

Table 4 displays instructors' concerns about Internet-based instruction in terms of frequencies and percentages of instructors' response.

Table 4
Concerns in Terms of Frequencies and Percentages of Instructors' Response

	VH		H		M		L		VL	
	f	%	f	%	f	%	f	%	f	%
Concern #1	13	33.3	21	53.8	5	12.8	0	0.0	0	0.0
Concern #2	8	20.5	18	46.2	7	17.9	5	12.8	1	2.6
Concern #3	4	10.3	19	48.7	12	30.8	3	7.7	1	2.6
Concern #4	2	5.1	20	51.3	13	33.3	2	5.1	2	5.1
Concern #5	2	5.1	12	30.8	19	48.7	4	10.3	2	5.1
Concern #6	0	0.0	13	33.3	17	43.6	6	15.4	3	7.7
Concern #7	0	0.0	7	17.9	22	56.4	9	23.1	1	2.6
Concern #8	0	0.0	2	5.1	27	69.2	10	25.6	0	0.0
Concern #9	0	0.0	2	5.1	23	59.0	13	33.3	1	2.6

VH=Very High, H=High, M=Medium, L=Low, VL=Very Low

Based on the above two tables, the instructors' number one concern was the necessary time to develop and maintain their course materials. Eighty-seven percent of the instructors rated this as a "very high" or "high" concern. Technical support and technical training ranked the second. In fact, around 67% of instructors considered it as a "very high" or "high" concern.

The concern that ranked third among all concerns was administrative support. In percentages, 59% of participants considered it as a "very high" or "high" concern. A close concern that ranked fourth among the top fourth concerns was sufficient time to interact with students. Around 56% of instructors ranked it as a "very high" or "high" concern. Instructors' lowest ranking was for the "student assessment/grading" concern. Although only 5% of instructors ranked it as a "high" concern, none of them ranked it as a "very high" concern.

The second research question was concerned in determining if there was a significant difference in instructors' concerns based on the discipline (humanity, social science, science/technology, or business). To answer this question, chi-square tests were performed for the nine concerns with regards to instructors' disciplines. The results of these tests are displayed in Table 5.

Table 5
Chi-Square Tests Results for the Nine Concerns (N=39)

Concern #	1	2	3	4	5	6	7	8	9
Chi-square	9.85	20.36	29.08	35.49	28.82	12.59	24.08	25.08	33.10
Df	2	4	4	4	4	3	3	2	3
p-value	.717	.550	.189	.264	.189	.368	.097	.096	.317

As shown in the above table, the chi-square tests indicate that all differences are not statistically significant: chi-square (concern #1, df=2, N=39)=9.85, p-value=.717; chi-square (concern #2, df=4, N=39)=20.36, p-value=.550; chi-square (concern #3, df=4, N=39)=29.08, p-value=.189; chi-square (concern #4, df=4, N=39)=35.49, p-value=.264; chi-square (concern #5, df=4, N=39)=28.82, p-value=.189; chi-square (concern #6, df=3,

$N=39$)=12.59, p -value=.368; chi-square (concern #7, $df=3$, $N=39$)=24.08, p -value=.097; chi-square (concern #8, $df=2$, $N=39$)=25.08, p -value=.096; and chi-square (concern #9, $df=3$, $N=39$)=33.10, p -value=.317. This, of course, suggests that instructors' concerns about Internet-based instruction were not significantly different based on the discipline (humanity, social science, science/technology, or business).

Discussion and Conclusions

This study looked into the experience of a Jordanian university in the delivery of Internet-based instruction. The Hashemite University has officially started the process of incorporating Internet-based instruction into the settings of traditional instruction. However, understanding the concerns of instructors involved in Internet-based instruction is pivotal to the success of this process. Therefore, the purpose behind conducting this study was to explore instructors' concerns about Internet-based instruction. Particularly, the study attempted to provide answers for the following two questions: (1) what are the concerns of the Hashemite University instructors who have developed and are currently delivering Internet-based courses? and (2) do instructors in different disciplines have different concerns?

To answer the above questions, 39 Hashemite University instructors from different disciplines (humanity, social science, science/technology, and business) during the first semester of the academic year 2005/2006 were surveyed. Consequent to the collection of data from instructors, certain statistical analysis tests and procedures were performed. The results of these tests and procedures were presented in the previous section. However, in what follows, we'll discuss these results as they relate to each question.

Regarding the first research question, the results indicated that instructors' top four concerns were:

1. Sufficient time to develop and maintain course material: This was the instructors' number one concern among all listed concerns. It was supported by the finding that 87% (26 instructors) considered the necessary time to develop and maintain their course materials as a "very high" or "high" concern. In fact, instructors were critically aware of this concern because they personally developed most of their course material. One of

the instructors commented that the “development time is a lot and very substantial.”

At the Hashemite University, instructors join a training workshop that is usually held every semester. During the workshop, instructors are trained on how to develop their course materials. Unfortunately, this curriculum conversion process doesn't end with the end of the workshop. It usually extends to the next semester, meaning that instructors will have an extra load in addition to their regular course load. Therefore, if this concern is not dealt with properly, the development of course material may face serious propagations, which in turn will put “on hold” the delivery of the Internet-based courses.

Institutions need to realize the burden of course development and start to initiate incentives that can help instructors accommodate for this burden. One of the common incentives, as some of the participating instructors suggested, can be release time in the form of one-course load reduction while developing the Internet-based courses.

2. Technical support and technical training: This was the second concern among the top four concerns. Around 67% (26 instructors) considered it as a “very high” or “high” concern. Many instructors bluntly stated that there is a lack of technical support staff. A social science instructor commented that he has been “responsible for all maintenance” in his course. Although the training workshop mentioned earlier provides some technical training, it seems that some instructors still feel that they need more technical training.

Institutions of higher education should recognize that providing technical support and technical training for their staff is indispensable for the development and delivery of their Internet-based courses. Several instructors indicated that establishing an e-learning center equipped with technical staff can be very helpful in this regard.

3. Administrative support: This concern ranked the third among all top four concerns. Fifty-nine percent (23 instructors) looked at it as a “very high” or “high” concern. University administrative support encompasses issues like institutional climate for Internet-based instruction and faculty promotion.

Comments received from instructors indicated that administrative

support at the Hashemite University needs to be more accented. One of the humanity instructors commented, "There are several unanswered questions about Internet-based instruction at our institution. I developed my course because I'm interested in it; not because of any financial support or administrative pressure." It is worth to mention that developing and teaching Internet-based courses at the Hashemite University does not count toward promotion and has no allocated space in faculty productivity.

This may result in a subtle incentive for faculty members to get involved in Internet-based instruction.

4. Sufficient time to interact with students: This concern was the fourth among the top four concerns. It was supported by the finding that around 56% (22 instructors) considered the necessary time to interact with students in Internet-based courses as a "very high" or "high" concern. This issue is closely related to the changing role of the instructor when combining Internet-based instruction with traditional teaching. This 'hybrid' mode of instruction requires frequent communication with students through different synchronous and/or asynchronous communication tools: e-mail, discussion forums, chat rooms, electronic bulletin boards, etc.

One of the business instructors commented, "In the Internet-based course, I have to keep constant contact with the class. Some of the students are doing well, others are not; due to the lack of responsibility on their part. Responding to students' questions and comments takes a great deal of time. Sometimes, the large number of emails can be just overwhelming!"

Although the list of concerns displayed in Table 2 included other concerns besides the ones just discussed, most instructors did not rate them as important as the top four concerns. In fact, instructors' highest rating for these concerns as "very high" or even "high" did not exceed 36%. For example, only 14 instructors (around 36%) rated student access to computers as a "high" or "very high" concern. This is possible because at the Hashemite University, computer labs are available almost in every building. Therefore, students usually have no problem finding a computer.

"Student familiarity with computers" was the sixth concern on the list.

Around 33% (13 instructors) rated this issue as a "high" concern. This relatively low concern can be explained by knowing the fact that all

examinations for the University requirement courses are held online (i.e. using computers). This, of course, may be very helpful in familiarizing student with computers.

The seventh concern was related to equipment problems. For only 7 instructors (around 18%), the issue of equipment problems was a “high” concern. However, for 22 instructors (around 56%), this issue was a “medium” concern. It seems that although the Hashemite University Computer Center is doing its best to provide a reliable computer network with convenient access, some problems in the network still exist. This comment was made by one of the instructors participated in the study.

The last two concerns on the list were “academic honesty” and “student assessment/grading.” For each of these concerns, only 2 instructors (around 5%) gave a “high” concern rating. However, it is interesting to notice that above 58% of the instructors considered these two concerns as “medium” concerns. Several instructors participated in the study indicated that except for University requirement courses, for most courses that are taught in a hybrid mode of instruction, examinations are still conducted traditionally (i.e. not online). This might explain why academic honesty and student assessment/grading were still an issue. However, since part of student assessment in “hybrid mode” courses is done through participation in online discussion forums and other online activities, student assessment/grading ranked less than academic honesty.

It is worth to mention that the above findings align to a large extent with the findings of the study conducted by Zheng and Smaldino (2006) and partially with the findings of some other studies (Sherron, 1998; Schauer, Rockwell, Fritz, & Marx, 1998; Elrod & Kelly, 1998; and Wang-Chavez & Branon, 2001). Therefore, we can say that the current study comes to lay emphasis on some concerns of instructors delivering Internet-based instruction that seem to be shared by several international studies.

Regarding the second research question, the results showed that instructors’ concerns about Internet-based instruction were not significantly different based on the discipline (humanity, social science, science/technology, and business). Stated differently, instructors in different disciplines have similar ratings for the concerns discussed in this study. However, to help understand this finding, we may need to take a closer look

at the nature of the concerns mentioned earlier. It is obvious that concerns are general and not tied to certain disciplines. For example, student access to computers doesn't seem to be greatly tied to a certain discipline because most computer labs at the Hashemite University are open to students from all disciplines.

Recommendations

In light of the above findings of this study, the following five recommendations were set forth:

1. For a proper integration of Internet-based instruction into the traditional settings, institutions of higher education in Jordan (and perhaps in most Arab countries) need to deeply understand the concerns of instructors who were involved in the development and delivery of Internet-based courses.
2. One way to help instructors accommodate for the development and delivery of Internet-based courses was by providing them with necessary time to work on these courses. To do so, institutions of higher education should use different kinds of incentives. Release time (e.g. course load reduction) can be a good incentive.
3. Institutions of higher education had to realize that providing technical support and technical training for their instructors who develop and deliver Internet-based courses was crucial to the success of these courses. Establishing e-learning centers equipped with technical staff might be a good solution.
4. Administrative support for Internet-based instruction was essential. Institutions of higher education should create an invigorating climate in which instructors can find all different kinds of promotions and rewards.
5. Further research was needed to examine the effect of some of the concerns discussed in this study on the performance of students in Internet-based courses.

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