Toward online teaching: The transition of faculty from implementation to confirmation at Bar-Ilan University

Gila Kurtz   **Ronit Oved**   **Nadav Rosenberg**   **Tami Neuthal**

kurtzg@mail.biu.ac.il

Bar-Ilan University

This study investigated a representative sample of 61 faculty members currently integrating online teaching within campus-based teaching at Bar-Ilan University. Based on Rogers' Diffusion of Innovation Model (1995), we examined faculty's current and past expectations, over all satisfaction, insights and 'lessons learnt' from online teaching, as well as future expectations. A semi-structured interview was the primary instrument used in the research, integrated with activity reports from 107 online courses taught by those faculty to measure aspects of their online teaching. Preliminary results presented here indicate a high level of satisfaction with online teaching, suggesting that most faculty are likely to be at the final stage of Rogers' model: the confirmation stage. A bivariate correlation analysis reveals that faculty satisfaction was significantly and positively associated with online teaching experience, perceived students satisfaction from online courses, perceived colleagues satisfaction from online courses, degree and impact of the change agent. Suggestions for further research are included.

Introduction and aim of study

As online teaching initiatives flourish throughout higher education world wide, new avenues of opportunity have opened for faculty, students and administrators alike. Online teaching differs from traditional one in a number of ways, including instructor and students' roles, communication, interaction and flexibility (Young, 2006). Though the online mode has created opportunities to expand the educational process beyond the traditional on-campus experience, it also creates new challenges, especially to faculty who are responsible for the design and delivery of higher education programs and courses offered in online environments. Previous research indicates that several factors affect the success of the process of implementing online teaching at the university level. Many of these factors relate to faculty as an important group of stakeholders (Olcott & Wright, 1995; Ensminger, 2002; Kurtz et. al, 2004) whose instructional role is affected by this change (Wolcott and Betts, 1999). Though faculty are pivotal to successful implementation of new online courses and programs, they are relatively ignored in much of the research and writing on distance education (Beaudoin, 2003; McLean, 2006).

The purpose of the current research is to study self-perceptions of a sample group of Israeli professors currently integrating online teaching strategies within campus-based courses at Bar-Ilan university. Based on Rogers' Diffusion of Innovation Model (1995) which suggests that faculty go through several stages in the adoption process of online technologies, this report presents preliminary findings

on faculty's current and past expectations, insights and 'lessons learnt' from online teaching. Also, we examine respondents' perceptions of their new role as online educators, as well as their students' and their colleagues' perceptions of online teaching.

Definitions of online teaching

Online teaching is a relatively new term in educational research literature. In the literature, we find a variety of definitions of online teaching (for example: Kozma, 2000; Rekkedal & Qvist-Eriksen, 2003). Based on Kurtz et al. (2005), we define online teaching as a learning/teaching process that is done via the Internet (by means of text/audio/video) with semi-permanent separation (place and/or time) of lecturer and student during planned learning events.The use of a classroom setting as integrated with the use of online strategies, we suggest three types of reciprocal relations between online strategies and classroom activities within a single course:

Type of course	Proportion of online activities	Description
Web enhanced	1-29%	Course with minor online activities. The instructor might use it to post the syllabus and timely announcements. Typically, traditional face-to-face meetings are held.
Blended	30-79%	Course that is a blend of online and face-to-face activities. Substantial proportion of content is delivered online, typically has some face-to-face meetings.
Fully online	80+%	The majority of the course is delivered online including the course content and online assignments. Special attention is given to interaction between the participants in the teaching-learning process. Typically has no required face-to face meetings.

* Based on Allen and Seaman (2003)

The theoretical framework

The theoretical framework of the current research is based on one of the most commonly cited models in the adoption of innovation literature, Roger's Diffusion of Innovation Model. In his model, Rogers (1995) describes a five stage process through which an individual (or other decision making unit) passes from gaining initial knowledge of an innovation, to forming an attitude, toward the innovation, to making a decision to adopt or reject, to implementation of the innovation, and to a confirmation of this decision. The stages of the innovation-adoption process include:

1. *Knowledge* stage - occurs when the individual is exposed to an innovation's existence and gains some understanding of how it functions.
2. *Persuasion* stage - occurs when the individual forms a favorable or unfavorable attitude toward the innovation.

3. *Decision* stage - occurs when the individual engages in activities that lead to a choice to adopt or to reject the innovation.
4. *Implementation* stage - occurs when the individual puts an innovation into use.
5. *Confirmation* stage - occurs when an individual seeks reinforcement of an innovation-decision already made, or reverses a previous decision to adopt or reject the innovation if exposed to conflicting messages about it.

The process as a whole consists of a series of actions and choices over time through which an individual (or an organization) evaluates the new idea and decides whether or not to incorporate the innovation into ongoing practice.

Rogers' model was explored by Shea et al. (2005) who applied the decision and confirmation stages to 913 faculty members from the SUNY Learning Network. Their main findings indicate that four variables are significantly associated with faculty satisfaction and their likelihood, therefore, to adopt or continue online teaching: levels of interaction in their online course, technical support, a positive learning experience in developing and teaching the course, and the discipline area in which they taught. In another research, Shea et al. (2006) applied the same model, to examine the process of higher education faculty's adoption of the Multimedia Educational Resource for Learning and Online Teaching (MERLOT**)** as a source of teaching materials. *"The results indicating that faculty were more likely to find MERLOT useful for their online teaching were those who were more experienced suggest that the complexity of online teaching itself represents a barrier to adoption of additional innovations when viewed through the Rogers model."* (p.153).

The focus of the current paper is on the transition of faculty from the fourth stage- the *implementation* stage - to the final destination - the *confirmation* stage. The reason for this is the fact that the organization as a whole decided to adopt e-learning as an institutional strategy and most of the faculty passed the first three stages successfully.

One of the factors that contribute to a successful innovation-decision process is a *change agent* that can be either individual(s) or a unit within the organization. According to Rogers (1995), the change agent influences clients' innovation-decision in a direction deemed desirable by the organization. Change agents usually introduce innovations into a client system that they expect will have consequences that will be desirable, direct and anticipated. As we will see later in the paper, an assigned change agent was found in Bar-Ilan University. We will elaborate the impact of this fact on the innovation-decision process.

The integration of online teaching in Bar-Ilan University

BIU is one of the largest campus-based universities in Israel. Its student body numbers some 30,000. The university offers 6,300 different courses, taught by 1,500 members of the academic faculty. Over the last half a decade, the academic organization, similar to many higher education institutions worldwide, is incorporating e-learning technologies into the on-campus teaching. The Learning

Management System (LMS) used in BIU serves as an asynchronous environment for faculty to construct websites for their courses, including creation of course content and online assignments, interaction and administrative tools.

As indicated earlier, the Bar-e-Learn Center can be viewed as a *change agent* for the innovation process. The center was established on December 2000, aiming to encourage faculty to integrate the online mode into their teaching practices. The support center serves faculty in an advisory capacity, providing workshops, online tutorials, personal instruction and a helpdesk. The Bar-e-Learn Center activities expanded rapidly: from 49 online courses in 2000/2001 the number increased rapidly in the next few years: 120 in 2002/2003, 400 in 2003/2004 and more than 1,000 in 2005/2006.

Methodology

Participants

Study participants included 61 (25 % out of a total of 247) faculty members from BIU who taught 107 online courses in the year previous to the research. A proportional stratified sampling method was used in order to ensure that the respondents reflect the diversity of faculty background characteristics, online methods of teaching used and types of courses.

Overall, 36 (59%) males and 25 (41%) females responded. All (except three) have a Ph.D. degree and above. A third (n=20) of the respondents are defined as e*arly adopters*, 70% of them are females. Respondent's face-to-face teaching experience ranged from one year to forty years with a mean face-to-face experience of seventeen years. Their experience in teaching online ranged from one year to six years (e.g., from the first year of the integration of e-learning at BIU), with a mean online experience of three years.

Instruments and Data collection

A semi-structured interview, held by two interviewees, was the primary instrument used in the research. . As the sessions were not recorded, the interviewees wrote down the responses during the session itself. The interview questions were modified from Rogers' (1995) model, from Beaudoin's (2002) instrument that examined the transition and self-perception of a sample group of faculty to online teaching and from Shea et al.'s (2005) research. The interviews consisted mainly of open-ended questions that requested information on their background characteristics, the main reason to adopt the online teaching innovation; characteristics of their online courses; self-perceptions of online teaching in general and their online teaching process in particular; their students' and their colleagues' perceptions of online teaching. The closing question asked them to estimate what the future holds for online teaching

The open-ended questions were content analyzed by the researchers. Statements of faculty were coded and quantified. The coding process was done by the main researcher and was reviewed by another researcher. An inter-reliability score of .95 was measured between the two researchers.

Faculty were contacted by two members of the research team via face-to-face or telephone between June 2006 and October 2006 - after the previous academic year had ended. Each interview lasted approximately half an hour. The names of interviewers were obtained.

Activity reports from 107 online courses taught by the 61 faculty (average of 1.7 courses taught by instructor) during the academic year 2005-2006 were a complementary source to measure aspects of their online teaching. All online classes were offered in an accelerated, 13-week format. 55% of the courses were undergraduate level courses and 40% were for a graduate degree. The discipline area of instruction consisted of education and humanities (25% each), 20% social science courses, 30% were in music, exact sciences and languages. The data, listed by course, included: number of students, number of subjects, number of items, number of entries to the course site, number of forum messages and the use of online assignments.

Preliminary Findings

Descriptive analysis

Results indicate a high degree of satisfaction of faculty from the integration of online teaching within their courses. On a scale of 1 -10 the average score was 8.6 (sd=1.2) and both scores 8 and 9 (31.4% respectively) were the frequent scores. While 54% can be characterized as *early adopters (*Rogers, 1995*)* , all faculty (100%) plan to continue teaching online and will regret 'very much' if they will be asked to give-up on the online mode.

Over half the courses (n=57) taught by faculty are of the *blended* type; 26% are *fully online* and 20% are *web-enhanced.* Online assignments were integrated into 32% of the courses.

Faculty were asked the main reason for adopting the online mode and the role the change agent played within this decision. The majority reported that they wanted to improve and enrich their teaching as the main reason, and highly valued the role of *Bar-e-learn Center* within the process (see table 1)

Table 1: Main Reason for Adopting Innovation and the Role of a Change Agent (n=61)

Question	*Answer*	*Frequencies* (by percentage)
Main reason for adopting online teaching	1. Wanted to improve/enrich teaching	76.8
	2. Was forced	10.7
	3. Was approached by the change agent	7.1
	4. Recommendations of colleagues	3.6
	5. Other reason	<u>1.8</u>
		100.0%
Impact of change agent (Bar-e-learn Center)	1. Essential	55.9
	2. Important	33.9
	3. Negligible	<u>10.2</u>
		100.0%

Bivariate Correlations Analysis

A bivariate correlation analysis was applied to examine the relationship between online teaching satisfaction, as a dependent variable, and independent variables. The results reveal that faculty satisfaction was significantly and positively associated with online teaching experience (=. 4, p<.001), perceived students satisfaction from online courses (=. 289, p<.01), perceived colleagues satisfaction from online courses (=. 247, p<.05), degree (=. 244, p<.05) and impact of the change agent (=. 221, p<.05). These findings provide additional empirical evidences supported by Shea et al.'s (2005) research in regard to the impact of the change agent and Shea et al.'s (2006) research in regard to online teaching experience.

Final words

In the current study we presented preliminary results related to the process of adoption of online teaching innovation by faculty at BIU. Overall, a high level of satisfaction with online teaching was found, indicating that most faculty are likely to be at the final stage of Rogers' model, the *confirmation* stage. A bivariate correlation analysis provided a partial explanation to the relationship between online teaching satisfaction and set of variables.

The next step of the research is to apply a multiple regression model to examine relationship between online teaching satisfaction, as a dependent variable and independent variables (e.g., main reason for online teaching, perceived students satisfaction from online courses, perceived colleagues satisfaction from online courses, impact of the change agent, characteristics of their online courses and background characteristics). The intent of the analysis is to identify a core group of variables that relate most strongly to the dependent variable, overall satisfaction, and therefore to make the transition from the fourth stage- the *implementation* stage - to the final stage - the *confirmation* stage - by adapting online teaching. We hope to provide such a report in the near future.

It is hoped that the results of this and similar studies can assist faculty and administrators identify and address critical issues related to the transition from on-campus delivery to online-teaching. Also, these findings could help researchers refine and focus additional questions related to the implementation and delivery of online courses, and the critical role played by faculty in this dynamic transition of teaching and learning.

References

Allen, I. E. & Seaman, J. (2003). *Sizing the opportunity: The quality and extent of online education in the United States, 2002-2003.* Retrieved March 10, 2005 from:
http://www.aln.org/resources/sizing_opportunity.pdf

Bates, A. W. and Poole, G. (2003). *Effective teaching with technology in higher-education.* San Francisco: Jossey-Bass.

Beaudoin, M. F. (2002). *From campus to cyberspace: The transaction of classroom faculty to distance education roles.* A paper presented the 8th Sloan-C International Conference on Asynchronous Learning Networks (ALN), November 2002, Orlando, USA

Ensminger, D. C. Surry, D. W. (2002*). Faculty perceptions of factors that facilitate the implementation of online programs.* A paper presented at the seventh annual Mid-South Instructional Technology Conference April 2002, Murfreesboro, Tn. Retrieved July 16, 2006 from:
http://iphase.org/papers/msitc02.pdf

Holmberg, B. (2003). Computer support of distance education, particularly online teaching and learning. In U. Bernath & E. Rubin (Eds), *Reflections on teaching and learning in an online master program - A case study* Oldenburg: Bibliotheks- und Informationssystem der Universität Oldenburg.

Kozma, R. (2000). Reflections on the state of educational technology - research and development. *Educational Technology Research and Development 48*(1), 5-15.

Kurtz, G., Beaudoin, M. & Sagee, R. (2004). From campus to web: the transition of classroom faculty to online teaching, *The Journal of Educators Online*, 1(1) Retrieved July 16, 2006 from:
http://www.thejeo.com/Archives/Volume1Number1/V1N1.htm#Volume_1,_Number_1,_Summer_2004

Kurtz, G. Sagee, R. & Getz-Lengerman, R. (2003). Alternative online pedagogical models with identical contents: A comparison of two university-level courses, *The Journal of Interactive Online Learning*, 2(1), Retrieved July 16, 2006 from*:*
http://www.ncolr.org/jiol/archives/2003/summer/2/index.asp

Kurtz, G. (2006). *From face-to-face teaching to online tutoring: expectations attitudes and practical implementations in a work-place. A paper presented at Chais Conference*, The Open University of Israel.(Hebrew)

Kurtz, G., Teeni, D., Mevarech Z & Neuthal, T. (2005). "The experience of implementing instructional technology in Israel higher education", In: M. Beaudoin (Ed.) *Perspectives on Higher Education in the Digital Age*, Nova Science Publishers

McLean, J. (2006). "Forgotten faculty: stress and job satisfaction among distance educators, Online *Journal Distance Learning Administration*, 9(2). Retrieved October 1, 2006 from:
http://www.westga.edu/~distance/ojdla/summer 92/mclean92.htm

Olcott, D Jr. and Wright, S. R. (1995). An institutional support framework for increasing faculty participation and postsecondary distance education. *The American Journal of Distance Education*, 9(3), 5-17.

Rekkedal, T. & Qvist, E. S. (2003). *Internet based e-learning, pedagogy and support systems*. Retrieved March 10, 2005 from: http://learning.ericsson.net/socrates/doc/norway.doc

Rogers, E. M. (1995). *Diffusion of innovation*s. (4th ed.), New York: The Free Press.

Rogers, E. M & Scott, K. L. (1997). *The diffusion of innovations model and outreach from the national network of libraries of medicine to native American communities*. Draft paper prepared for the National Network of Libraries of Medicine, Pacific Northwest Region, Seattle. Retrieved October 3, 2006 from: http://nnlm.gov/archive/pnr/eval/rogers.html

Shea, P., Pickett, A. & Li, C. S. (2005). Increasing access to higher education: A study of the diffusion of online teaching among 913 college faculty. *The International Review of Research in Open and Distance Learning*, 6(2). Retrieved July 16, 2006 from:
http://www.irrodl.org/index.php/irrodl/article/view/238/493

Shea P., McCall, S. & Ozdogru, A (2006) Adoption of the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) Among Higher Education Faculty: Evidence from the State University of New York Learning Network**,** *MERLOT Journal of Online Learning and Teaching*, 2(3). Retrieved October 16, 2006 from: http://jolt.merlot.org/vol2no3/shea.htm

Wolcott, L. L. and Betts, K. S. (1999). What's in it for me? Incentives for faculty participation in distance education. *Journal of Distance Education.* Retrieved July 16, 2006 from:
http://cade.athabascau.ca/vol14.2/wolcott_et_al.html

Young, S. (2006). Student views of effective online teaching in higher education. *The American Journal of Distance Education*, 20 (2), 65-77