TMOC: A MODEL FOR LECTURERS' TRAINING TO MANAGEMENT OF ONLINE COURSES IN HIGHER-EDUCATION

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ABSTRACT

The study examined a new model called TMOC: Training to Management of Online Courses. The model is designed to train lecturers in higher-education to successfully create, deliver and develop online courses. The research was based on a sample of lecturers, who studied in a course based on the new model at the Mofet Institute in Tel-Aviv (n=20). The course included all components and characteristics of TMOC and learners were asked to answer a questionnaire focused on the following two basic constituents:

1. *Required contents that should be studied in order to become a successful manager of online courses in higher-education.*
2. *Effective ways needed in order to achieve that mission.*

The research reveals that according to faculty members' views, the new model is very helpful for them to become online course managers. Therefore, there is a significant worthiness to adopt it for training lecturers in higher-education to deal with online learning.

Keywords: TMOC, Online Teaching, Computerised Assessment, LMS: Learning Management System, OTLA: Online Teaching Learning and Assessment, TED (Technology, Entertainment, Design).

INTRODUCTION

The study introduces a new model called TMOC: Training to Management of Online Courses. The model is designed to train faculty members in higher-education to manage online courses, namely, to successfully create, deliver and develop such courses. A competency like that is about to enable staff members to deal with online teaching, learning and assessment appropriately.

Unfortunately, there are lecturers having just basic knowledge of educational technology, so that, they are incapable of managing online courses successfully. Obviously, such a reality is unacceptable in higher-education institutes in the 21st century. Consequently, it is required to train faculty members to conduct online courses effectively and independently. The new TMOC model suggests a solution for that problem. As it has been found in this study, it is applicable to teacher educators' training but may be appropriate to other kinds of institutions as well.

General Background

A common definition for online learning is as follows:

Learning that takes place partially or entirely over the Internet (Means, Toyama, Murphy, Bakia, & Jones, 2010).

There is a clear distinction between two purposes for online learning as given by,

- Learning conducted totally online as a substitute or alternative to face-to-face learning.
- Online learning components that are combined or blended with face-to-face instruction to provide learning enhancement. (Means et al., 2010).

Online learning courses include both content and instructional methods, that help people to learn the content. They are delivered via digital devices using texts, voices, pictures or videos. Online learning lessons are intended to help learners reach their personal learning objectives (Clark & Mayer, 2011). Online learning has become popular because of its potential for providing more flexible access to content and instruction at any time, from any place.

Different technology applications are used to support different models of online learning. One class of online learning models uses asynchronous communication tools to allow users to contribute at their convenience. Synchronous technologies are used to approximate the face-to-face teaching strategies such as delivering lectures and holding meetings with the group of students. Earlier, online programs tended to implement one model. But, more recent applications tend to combine multiple forms of synchronous and asynchronous online interactions as well as occasional face-to-face interactions (Means et al., 2010).

Research findings point out that, there are advantages for asynchronous over synchronous distance education (Bernard, Abrami, Lou, Borokhovski, Wade, Wozney, Wallet, Fiset, & Huang, 2004). In examining a different set of studies, it was found that, studies of distance-learning applications, which combined synchronous and asynchronous communication, tended to report more positive effects than studies of distance learning applications with just one of those interaction types (Zhao, Lei, Yan, Lai, & Tan, 2005). Zhao et al. (2005) also found advantages for blended learning ("Face-to-Face Enhancement") over purely online learning experiences. They also found advantages for courses with more instructor involvement compared with more "canned" applications, which provide expository learning experiences.

The OTLA asynchronous model is a complete substitution for face-to-face learning. It includes a comprehensive basis of any academic course, namely, teaching, learning and student assessment, and it combines those three fundamental factors via Internet technologies. The model has been examined in institutions of higher-education and has been found to be an appropriate way for managing academic courses in higher-education (Ghilay & Ghilay, 2013).

As Mayer (2009) claims, one of the main challenges in e-courseware is how to adapt technology to aid human learning. Indeed, the OTLA model succeeds to make an effective link between learning needs and technology. Furthermore, it enables students to gain what they need a lot – flexibility combined with effective and efficient learning. According to Means et al. (2010), online learning has become popular, because of its potential for providing more flexible access to content and instruction. The research literature also stresses on the advantage of asynchronous learning versus synchronous, because of its ability to deep learning (Harlen and Doubler 2004; Hiltz and Goldman 2005; Jaffe, Moir, Swanson & Wheeler, 2006). In OTLA, flexibility becomes not only a matter of convenience, but it also has a direct influence on learning effectiveness. According to students who participated in such courses, learning in their own private time is much more effective and efficient than sitting in a classroom and listening passively. In such a way, students become active learners and this change improves the whole learning process significantly (Ghilay & Ghilay, 2013).

Barriers to Online Teaching and Learning

In many institutions, faculty members are expected to participate in online distance education as a part of their regular duties as faculty (Kim & Bonk, 2006). However, many faculty members hesitate to convert their traditional courses to an online format. This resistance is linked to a lack of support as well as training by institutions of higher-education (Allen & Seaman, 2008; Keengwe, Kidd, & Kyei-Blankson, 2009).

Both novice faculty, who may have been reluctant to participate, and expert faculty play a significant role in guiding the types of support, assistance, and training provided by institutions of higher-education. Rockwell, Schauer, Fritz, & Marx (1999) examined the types of education and support that faculty needed for being successful in the management of online courses. Faculty reported that, support for developing instructional materials, developing interaction and applying specific technologies were critical for being successful in online environments.

Faculty members perceived teaching online as more difficult than conducting traditional courses (Gerlich, 2005). They also complained that, online delivery is more labour intensive because of the amount of time required to grade papers and respond to questions (Lao, & Gonzales, 2005; Wegmann, & McCauley, 2008; Sellani& Harrington, 2002).

In other studies, faculty felt that, additional instructional and technical support was needed, because they were concerned about the quality of their online courses and the amount of technical assistance and training available to them at their institutions (Allen & Seaman, 2008; Keengwe, Kidd, &Kyei-Blankson, 2009).

Studies conducted by Brogden and Couros (2002) and Lorenzetti (2004) suggest that, the time and effort demands to develop online courses and to learn new technologies which are the causes for faculty member's frustrations.

Implications for Online Learning and Teaching

To successfully transfer from traditional teaching and learning to online pedagogy, academic staff members would have to change their old teaching styles and adopt new skills (Colaric, & Taymans, 2004; Johnson, 2008; Kurzweli & Marcellas, 2008; Panda & Mishra, 2007).

Faculty success in online courses demands a thorough understanding of designing and delivery of such courses, as well as challenges and opportunities that they encounter (Ginzburg, Chepya, & Demers, 2007; Pankowski, 2008). In order to support faculty members, it is required to prepare instructional guides, to create professional development opportunities, and to develop relevant instructional materials, so that it would be feasible to address all needs such as pedagogy, course management and technology (Grant & Thornton, 2007; Keeler & Horney, 2007; McQuiggan, 2007).

Based on the International research literature, it is quite clear that, nowadays online learning of various types is an integral part of an academic conduct in higher-education. No matter what kind of online course is selected, all alternatives available require comprehensive knowledge of creation, delivery and development of online courses. Such knowledge is not always attainable for faculty staff, and it requires training, experimentation and contemplation. There are lecturers who have basic knowledge of Educational Technology, whereas others are more experienced. Anyway, institutions of higher-education face the challenges of training their faculty members to become qualified online course managers. The new TMOC model is designed to address this challenge successfully.

Description of the TMOC Model

TMOC is based on the following two fundamental components :

1. Curriculum: specific topics required for management of online courses.
2. Ways of learning: particular ways of learning the curriculum.

The curriculum

TMOC curriculum includes the following topics as given by,

1. LMS: A Learning Management System (such as Moodle) is one of the most fundamental tools required for the management of online courses. It includes a basic package of applications for the administration, documentation, tracking, reporting and delivery of academic courses. It enables academic staff members to easily create course websites, that are closed to specific groups (not necessarily). According to TMOC, each lecturer should be familiar with the following LMS basic functions, at least: management of files/directories, menus, forums, photo albums, assignments, glossaries, links (internal and external), groups, attendance, announcements, blogs, wikis, users' registration and import, backup and restore of course websites.

2. CAA: Computer Assisted Assessment: Assessment is a critical catalyst for student learning (Brown *et al.*, 1997) and there is considerable pressure on higher-education institutions to measure learning outcomes more formally (Farrer, 2002; Laurillard, 2002). It has a considerable potential for both to ease the assessment load and provide innovative and powerful modes of assessment (Brown *et al.*, 1997; Bull & McKenna, 2004).

There is a significant advantage to computerised assessment in comparison to paper-based evaluation. According to research findings, there is substantial worthiness to adopt computerised assessment technologies in higher-education (Ghilay & Ghilay, 2012). In order to train lecturers properly, they should be accustomed to CAA including the following basic components :

- Creation/updating of questions bank.
- Creation/updating of different exams.

- Running computerised exams.
- Collection and reporting of exam's results.

3. Video: A recorded video lecture is an asynchronous replacement or supplement for a live lecture. It might be applicable to courses in which it is essential to watch things during the lecture, such as formulas, mathematical expressions, diagrams, pictures, computer screens or equivalent (Ghilay & Ghilay, 2013). Such a recorded lesson can be watched several times, entirely or partially without the limitations. The following sub-topics should be included.

- *Creation of clips based on video capture technology*: Appropriate tools might be Camtasia, Microsoft PowerPoint, Microsoft Community Clips (free software) or equivalent. If the lesson includes lots of formulas, it can be undertaken by a suitable tool such as MathType combined with PowerPoint and Camtasia or similar tools.
- *Searching clips across the net*: Across the net, there is an enormous amount of video clips, which may be suitable for academic courses. Those clips are ready, and the only task is finding and linking or embedding them appropriately. Such clips might include the lectures in TED (Technology, Entertainment, Design) or YouTube or any other relevant videos.
- *Editing video clips*: Usually, it is required to edit video clips before exposing them to students. Possible alternatives for editing can be a professional tool like Camtasia or free software such as Microsoft MovieMaker, Subtitle Workshop, Format Factory and similar.
- *Format conversion*: There are lots of video formats, and sometimes it is required to perform conversions from one format to another prior to sharing them with students. A relevant tool may be Format Factory.
- *Uploading clips to the net*: In order to share video clips with students, they should be uploaded to the net. It may be undertaken by either uploading to the course website or to a specific hosting site such as YouTube or Vimeo.

4. Audio: This option is also an asynchronous replacement or supplement to a live lecture, but it is suitable, especially to wordy courses in which students do not have to watch things while listening. Audio files can be uploaded to the course website or to any other digital database. Lecturers should be familiar with voice recording format conversion, editing and uploading files to the net. Recording can be undertaken with the standard Microsoft application Recorder (included in Windows) and format conversion and editing can be done by Format Factory.

5. Text files: One of the most important components of any course in general and an online course, in particular, is its text files. PDF is a file format used to present documents in a manner independent of application software, hardware, and operating systems. Each PDF file encapsulates a complete description of a fixed-layout flat document, including the text, fonts, graphics, and other information needed to display it. Based on the attributes mentioned above, PDF is a very efficient format for sharing texts in online courses. Therefore, lecturers should be accustomed to the following:

- *Text conversion to PDF (including links):* This fundamental capability enables lecturers to share students all kinds of texts and hypertexts, no-matter in what software the original text was created.
- *Merge files*: This can be helpful for creation of booklets based on different sources and formats.
- *Split files*: Much material can be divided into small portions.
- *Reorder/rotate pages*: It enables to improve a booklet by changing pages' order or view.
- *Adding notes*: This capability is helpful for lecturers and/or students for adding personal notes anywhere across the whole text.
- *Automatic readout*: It may be effective for students who wish to listen to texts without recording them.

Such actions might be undertaken by Adobe Acrobat Professional, Microsoft Office or freeware such as PDFSAM, PDFCreator, PDFill or equivalent.

6. Control of a remote computer: Often, it is required to connect to students' distant computer, in order to support them. This lets to assist learners for both technical difficulties as well as providing them with pure academic assistance.

There are several tools designed to connect to a remote computer and create a situation in which a lecturer and a student, work simultaneously on the same computer, even though they are in different locations. Relevant tools for remote control can be TeamViewer, LogMeIn, AMMYY and similar.

7. Online synchronous learning: A complementary component of online asynchronous learning is the synchronous one. Although it is supposed to be inferior (Bernard et al., 2004), yet it is quite important for lecturers to acquire such knowledge. A relevant tool for this purpose can be Elluminate. It can present a lecture to remote participants, including lecturer's voice and view, slides or anything that appears on the lecturer's screen.

8. Website development: Although lecturers in higher-education use LMS for creation of course websites, sometimes they may need a personal website which is their own and does not depend on an institution. A relevant way to build personal websites is not necessarily to write down codes but rather to learn how to use convenient tools such as Google Sites or equivalent. Obviously, the main LMS website can be linked to the personal site or to other items stored in additional databases, built by lecturers as well.

9. Screen capture: Screen capture is a relatively simple skill having a great importance for writing training literature, including screen shots. Useful tools for that purpose may be Fast Stone Capture or the Microsoft Windows Snipping Tool.

10. Principles of online courses which are full replacement to face-to-face learning: Such courses are more difficult to manage because, all activities are distant and lecturers and students do not meet at all. In order to successfully face such a challenge, it is required to know the fundamental principles of distant online courses. A relevant alternative may be the new OTLA model which defines a framework for such online teaching, learning and assessment (Ghilay & Ghilay, 2013).

Ways of learning the TMOC curriculum

In order to comprehensively learn and assimilate the whole curriculum mentioned above, TMOC includes a combination of the following main ways of learning:

1. Lectures: The first nine topics are practical and therefore, they require exercising. All lessons should be based on a combination of demonstrations as well as exercises and learners should be guided for each practice.

2. Booklets: Each topic/subtopic given in a lecture should have a comprehensive written cover, that might enable learners to repeat, deepen and/or accomplish lessons they did not attend or not fully absorbed.

3. Instructional video clips: Like booklets, each topic/subtopic should be entirely covered by an instructional video clip as well. Each clip should be short, in order to enable learners to easily find specific issues. Owing to different learning styles, video clips might be better for certain learners, whereas for others, it can be complementary.

4. Personal guidance: Personal guidance is about to take place (face to face or remote), following a learner's request. Its main goal is to accomplish and/or deepen issues that have not yet been absorbed in spite of all preceding means undertaken. Remote personal guiding is relatively easy to perform, and it can be very efficient and effective.

5. Classroom practicing: Such lessons cover topics that have already been learned in a lecture, and they are about to deal with exercising only. They intend to enable learners to deal with more complicated tasks than what has been practiced in a lecture.

6. Home practicing: This is a complementary way to the former. The advantage is that, learners can cover more issues than what can be achieved in a limited time lesson. In this kind of practice, learners can also send questions to tutors and get answers in reasonable time.

7. Annual project: Annual project is a comprehensive assignment integrating most topics learned in a certain year. It has to be undertaken gradually during the year and be guided carefully.

8. Pedagogic implications of technology: Each technological tool should be learned based on two combined perspectives such as technological as well as pedagogic. Therefore, any instructional activity (lesson, booklet, exercise, etc.) should include pedagogic and educational significance and not only technological

functioning. In that sense, technologies are in the service of education.

Method

The study framework: Examining the TMOC model

Lecturers' perceptions toward TMOC were examined during a biennial study undertaken at the Mofet Institute in Tel-Aviv. The study examined 20 lecturers teaching in ten different Israeli teacher-training colleges who participated in a two-year course based on the new model (the course included seven academic hours per-week).

The research questions

The research questions intended to measure the effectiveness of the new TMOC model.

The following research questions were worded:

1. How do lecturers perceive the contribution of TMOC curriculum to the management of online courses?
2. How do they perceive the effectiveness of TMOC ways of learning?

Population and Sample

Population: The population addressed through the study included all higher-education lecturers in Israeli teacher-training colleges (25 colleges overall).

Sample: 20 higher-education lecturers teaching in ten teacher-training colleges who participated in a two-year course based on the TMOC model.

Lecturers were asked to answer a questionnaire at the end of each academic year (2012-2013, 2013-2014), concerning their perceptions towards the new TMOC model.

The questionnaire was anonymous, and the rate of response was 100%.

Tools

In order to answer the research questions, a questionnaire, including 21 items (closed questions) was prepared. The questionnaire was divided into two parts covering each research question respectively:

- Part 1: 13 topics of the TMOC curriculum.
- Part 2: 8 instructional ways for learning those topics.

For each item, respondents were requested to describe their view about the degree of its contribution/ effectiveness, on the following Likert five-point scale:

a. Very little
b. Little
c. Medium
d. Much
e. Very much

In addition to those statements, the questionnaire included two open-ended questions as well. They were designed to accomplish the main data gathered by the quantitative part of the questionnaire, as follows:

1. Do you have any additional remarks concerning the curriculum required for the management of online courses?
2. Do you have any extra comments relating to relevant ways of learning this curriculum?

Data Analysis

All items are presented separately except the four relating to video, that were combined to constitute one factor (one of the ten components of the curriculum). In order to examine this factor's reliability, Cronbach's alpha was found to have a high value (first year: 0.904, second year: 0.756). This factor (video) has been determined by calculating the mean value of the items composing it.

Table 1 introduces all the questionnaire's questions relating to TMOC curriculum.

Table 2 presents all the questionnaire's questions relating to the ways of learning the TMOC curriculum.

For each item/factor, a mean score was calculated (including standard deviation). A paired samples t-test has been undertaken as well ($\alpha \leq 0.05$) for the following reasons:

1. Checking significant differences of items' means between 2012-13 and 2013-14.
2. Checking significant differences between all pairs of items relating to 2013-14.

Results

At the end of the first year (2012-13), learners were asked about seven contents of the curriculum only (CAA, recording lectures, video, LMS, PDF, online synchronous learning and control of remote computer). At the end of

Factor	Questionnaire's questions
Video First year - Alpha=0.904 Second year - Alpha=0.756	Video editing and format conversion Video uploading to the net Video capture Video-subtitles
	CAA (Computer Assisted Assessment) Recording, editing and integrating a lecture in a course website LMS (management of files/directories, menus, forums, photo albums, assignments, glossaries, links, groups, attendance, announcements, blogs, wikis, users' registration, import, backup and restore) Full distant online courses principles (OTLA) Online Synchronous learning (Elluminate) PDF files Control of a remote computer Screen capture (FastStone Capture) Websites building with auxiliary tools such as Google Sites

Table 1. TMOC curriculum – questionnaires' questions

Questionnaire's questions
Instructional booklets
Discussion of pedagogical implications of ICT tools and applications
Instructional video clips
Personal instruction
Lectures
Final annual project
Home practice
Classroom practice

Table 2. Ways of learning TMOC curriculum – questionnaires' questions

the second year, they were asked about all ten topics. There was no significant difference between the years 2012-2013 and 2013-2014 concerning the mean scores of the seven items examined in both years (t-test, $\alpha \leq 0.05$). It means that, there was a replication of most results found in the first year and also in the second one. It strengthens the findings and gives them more validity. Table 3 presents the mean scores of both years and the paired samples t-test showing that the differences are not significant.

According to Table 3 (relating to the first research question dealing with the TMOC curriculum), lecturers rate CAA (Computer Assisted Assessment) at the end of the second year has the highest score (4.69) compared to all the others. At that point, there is a significant difference between that item and all the others (except the second and the third recording lecture and principles of full distant online courses. A paired samples t-test ($\alpha \leq 0.05$) examined all possible 45 combinations of pairs (C^2_{10}). For example, the difference between CAA and Video was found to be significant ($t_{(15)}$ = (2.782, p=.014). So the situation is concerning the significance of difference between CAA and all other items (except the second and the third mentioned above). All the other items are rated at the end of the course with high scores as given by, recording a lecture (4.11), principles of full distant online courses (4.11), video (4.10), LMS (4.06), PDF files (3.89), website building (3.88), online synchronous learning (3.82), screen capture (3.81) and control of a remote computer (3.76). Furthermore, the statistical test mentioned above found out that, there was no significant difference between all those items (excluding CAA).

Items	First year			Second year			Paired Samples T-Test
	N	Mean	S.D	N	Mean	S.D	
CAA	19	4.42	.769	16	4.69	.479	$t_{(14)} = .899, p = .384$
Recording and editing a lecture	19	4.05	1.471	18	4.11	1.079	$t_{(16)} = .960, p = .351$
Principles of full distant online courses	-	-	-	16	4.11	1.023	
Video	20	3.91	1.046	18	4.10	.582	$t_{(17)} = 1.170, p = .258$
LMS	19	4.00	1.453	18	4.06	0.998	$t_{(17)} = .226, p = .824$
PDF files	18	3.83	1.425	18	3.89	1.079	$t_{(13)} = -.425, p = .678$
Websites building	-	-	-	16	3.88	1.088	
Online Synchronous learning	20	3.95	1.276	17	3.82	1.131	$t_{(16)} = .000, p = 1.000$
Screen capture	-	-	-	16	3.81	1.109	
Control of a remote computer	20	3.90	1.165	17	3.76	.831	$t_{(16)} = .000, p = 1.000$

Table 3. TMOC curriculum - mean items for both years (descending means of second year)

The meaning of those findings is that, following a two-year course based on TMOC model, lecturers evaluate all contents of its curriculum as having much or even very much contribution to their ability and knowledge relating to the management of online courses.

At the end of each year, learners were asked about the ways of learning the curriculum. There was no significant difference between the two years concerning the mean scores of six items out of eight (t-test, $\alpha \leq 0.05$).

Concerning the following two items, there was found a significant difference:

- *Booklets:* At the end of the second year, the score increased to 4.65 in comparison to 3.79 at the end of the first year ($t_{(15)} = 2.236$, $p = .041$).
- *Final annual project:* At the end of the second year, the score increased to 4.00 in comparison to 3.33 at the end of the first year ($t_{(15)} = 2.551$, $p = .022$).

It means that most ways of learning got high scores during both years. Concerning the two exceptions mentioned above, the scores were lower in 2012-13, but they significantly increased at the end of the second year. Table 4 presents the mean scores of both years and paired samples t-test showing the significance of differences between the two years.

According to Table 4, (relating to the second research question dealing with ways of learning the curriculum), lecturers rate all the ways of learning at the end of the second year with very high or high scores. Booklets (4.65), videos (4.59), discussion of pedagogic implications (4.56), personal instruction (4.35) and lectures (4.17) are rated with very high scores. The last three items, final annual project (4.00), home practice (3.88) and classroom practice (3.78) are rated with high scores as well. There is no significant difference between the first five items and between the last three ones. However, there is a significant difference between each of the first three (Booklets-4.65, videos-4.59 and discussion of pedagogic implications-4.56), compared to each of the last three (project-4.00, home practice-3.88 and classroom practice-3.78). This conclusion was gained by conducting a paired samples t-test that examined all the possible 28 combinations of pairs (C_{28}).

The meaning of those findings is that, lecturers evaluate most ways of learning (5 ways of learning) as very much effective or as much effective at least (3 ways).

The significance of the findings gained via both research questions is that the TMOC model is very suitable for preparing lecturers in higher-education to become managers of online courses.

The open-ended questions strengthen the closed items as shown in the following examples (lecturer's quotes),

1. The TMOC curriculum (first research question):

- "The combination of ICT tools and pedagogy was very helpful for me. It improved significantly my ability to effectively manage an online course."
- "The Moodle lessons were systematic and relevant to my basic need of managing online courses."
- "The lessons dealt with website building by Google Sites had a great value for me. It is a fantastic complementary tool to the Moodle, because it is absolutely personal."
- "The tools selected in the curriculum reflected real needs we have in the college. Therefore, the learning process was meaningful."

Items	First year			Second year			Paired Samples T-Test
	N	Mean	S.D	N	Mean	S.D	
Booklets	19	3.79	1.134	17	4.65	.606	$t_{(15)} = 2.236$, $p = .041$
Videos	20	4.20	.951	17	4.59	.795	$t_{(16)} = 1.329$, $p = .203$
Discussion of pedagogic implications	20	4.40	.940	18	4.56	.705	$t_{(17)} = .511$, $p = .616$
Personal instruction	19	4.42	.838	17	4.35	.702	$t_{(15)} = -.436$, $p = .669$
Lectures	20	3.85	1.226	18	4.17	.924	$t_{(17)} = 1.141$, $p = .270$
Final annual project	18	3.33	1.425	17	4.00	.791	$t_{(15)} = 2.551$, $p = .022$
Home practice	18	3.94	.998	17	3.88	.928	$t_{(15)} = -.159$, $p = .876$
Classroom practice	20	4.35	.875	18	3.78	1.060	$t_{(17)} = -1.567$, $p = .135$

Table 4. Instructional ways of TMOC curriculum - mean items for both years (descending means of second year)

- "CAA was extremely important for me. If possible, I would even be delighted to deepen this topic more intensively."

2. Ways of learning the curriculum (second research question):

- "The texts and videos were so clear and comprehensive, that I am sure they could replace some lectures. Such helpful materials can change lectures to be less detailed because most topics could be studied asynchronously."
- "Tutors' devotion was outstanding. They were welcoming and accessible on a constant basis. The personal guidance helped me a lot to overcome the difficulties."
- "The wonderful video clips enabled me to adopt the notion of the 'opposite class', to watch the video prior to class and start the lesson immediately in practicing activities."

Concerning the curriculum (first research question), the quotes mentioned above stress the great importance of the contents included in TMOC curriculum, especially the necessary linkage between tools and pedagogy, the Moodle (LMS), website building and CAA, reflecting the real needs of academic staff members in higher-education. Relating to the ways of learning (second research question), the quotes emphasize the great power of comprehensive texts and video clips combined with the tutors' devotion and accessibility.

Discussion

Unfortunately, faculty members experience lots of barriers while required to initiate a transition from traditional learning to what is expected in the 21st century. The main reason for those difficulties is a lack of support and training (Allen & Seaman, 2008; Keengwe, Kidd, & Kyei-Blankson, 2009). The fundamental question is how to effectively train lecturers, so they would be able to function successfully.

In order to suggest an answer, the study introduces a new model called TMOC (Training to Management of Online Courses) which is based on two main components:

1. The curriculum: necessary collection of ten contents (LMS, CAA, video, audio, text, control of a remote computer, online synchronous learning, website development, screen capture and principles of full online courses).
2. A combination of ways of learning those contents (lectures, booklets, instructional video clips, personal guidance, home/class practicing, annual project and pedagogic implications of technology).

It should be stressed that, the new model represents a package, including a lot of components which are necessary for achieving optimal results. In order to practically create an effective course based on TMOC principles, it is required to effectively combine technological and pedagogic qualifications. The technological ability is a necessary and insufficient condition for effective online learning whereas only a combination of both technological and pedagogic capabilities is necessary and sufficient for conducting online learning effectively. Accordingly, TMOC does combine those two significant components, and that also contributes to its success.

The new model was examined during a two-year course in which 20 lecturers took part. The significant quantitative findings show that faculty members representing ten colleges, perceived TMOC as a comprehensive framework for training them to become successful managers of online courses. The qualitative data gathered (the open-ended questions) strengthens the quantitative part and gives it more validity.

Conclusion

According to the research literature, it seems that, faculty members face barriers while trying to transfer from traditional to online learning. This difficulty is linked to a lack of support and training (Allen & Seaman, 2008; Keengwe, Kidd, &Kyei-Blankson, 2009). In order to face such difficulties, institutions of higher-education should train their staff members systematically and thoroughly before they begin to manage online courses and during that process, it should be mentioned that, the term 'management of online courses' refers to a wide variety of activities, including creation, delivery and developing such courses. The fundamental question is how to effectively train lecturers, so they would be able to function successfully. The conclusion derived from the study's findings is that TMOC can be a comprehensive and

systematic model for achieving that purpose.

Recommendation

Following the major contribution of TMOC to the creation of successful online learning, it is recommended to adopt it in institutions of higher-education worldwide. In order to practically do so, it is required that, higher-education institutes would create and deliver programs based on TMOC principles. Such programs should include relevant texts, exercises and video clips covering the TMOC curriculum, applicable to each academic institution. Furthermore, program tutors are about to teach most of the curriculum enabling learners to practice relevant topics and get answers to questions. Learners should receive personal guidance focused on specific problems they encounter as well as individual tutoring accompanying the final project. In order to be effective, tutors should be continuously available to learners for supporting them either in person or remotely.

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