Problems While Preparing E-Materials for Blended Learning Environments: A Case Study

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Abstract - In this study, lecturers from various universities who utilize the blended learning environments in their courses and prepare distance education materials for this aim are interviewed and the problems they experience while preparing such materials are analyzed. Higher education institutions are evaluated not only with the content, quality and richness of the education they provide but also with different education experiences they offer for students. There are insufficient number of studies regarding how to design, implement and evaluate the blended learning environments in order to improve the effectiveness of education and quality of learning in spite of the increasing interest towards the blended learning environments which are rising to become the shining star of the way of presentation of education. There are a number of factors that must be taken into account to obtain maximum educational benefit from the online education as the main factor of the blended education and one of these factors is to minimize the problems experienced at the stage of preparing the materials. This study aims to draw attention to the problems experienced by the educators while preparing e-learning materials (e-materials) to be utilized in the blended learning environments. It is considered that determination of the view-points of lecturers in preparation of the blended learning environment will provide significant contributions in the process making the prepared materials more qualified and effective.

Index Terms - Blended learning environment, e-learning, online education, distance education, e-material

1. Introduction

Demand for higher education has ever-increasing trend. Higher education institutions aims to decrease costs as a result of today's significance gaining approach for effective usage of financial resources. However, in this case, institutions should improve standards to compete with their rivals, while decreasing their costs [10]. To overcome this problem, higher education institutions should prefer blended learning environments (BLE) due to its advantages such as improvement of learning, increase of registered pupil rate and increasing course commitment of pupils [12].

Higher education institutions should be aware of change/transformation potentials [7]. This study analyzes problems experienced by academicians during material improvement process, which is one of the basic tools of BLE used intensely by the institutions achieving change.

First of all, why BLE needs such environments is explained in the scope of the study. Then, issues to be considered in design of BLE are defined. Final section analyzes the problems experienced by academicians applying BLE while teaching.

As stated by Ref. [4], latest researches mainly concentrate on advantages and disadvantages of BLE. This study aims to draw attention to the problems, which are ignored before implementation, but experienced during design process.

A. Blended Learning

According to Ref. [1], blended learning (BL) consists of combination of face-to-face education guided by educators with synchronous and asynchronous environments and represents usage of online environments along with face-to-face education.

In addition to face-to-face education, blended learning has other advantages, which may be counted as location as time flexibility [8], decrease of cost, out of class materials, personalized and meaningful feedbacks, and time adjustable tasks. Due to joint implementation of face-to-face and online education, BLE enables flexibility and easy access to resources [12]. However, such type of learning has also specific disadvantages like digression as an outcome of many materials and time loss, educator dependence of pupils having low computer usage skills [4].

BLE is simple in terms of combination of face-to-face and online education, but has also complex structure as any applications designed is not identical, virtual design possibilities are unlimited and content applications are numerous [7].

B. Why Blended Learning?

Higher education students present different social status, different ethnical origins and expectations [17]. Profile of students and changes in financial sense cause education institutions use "flexible methods" [10]. Social requests, financial restrictions, competition, technological innovations and student variety result with the requirement for designing of creative implementations [7].

Institutions apply distance learning methods due to worldwide failure in meeting education needs completely [14], changes in learning profile and time, as well as distance limitations. Designed with combination of positive and strong sides of distance learning and face-to-face learning [15], blended learning may complete missing parts of distance education.

Characteristics of information and communication technologies enhance strength and impact of BLE. Blended learning (BL) offers stronger educational experience by combining advantages of both face-to-face and online education. Benefits to be obtained from positive effects of face-to-face and online education methods shall increase strength of such benefits.

Advantages of blended learning with respect to face-to-face and online education are classified under following headings according to Ref. [11];

Pedagogic richness,
Easy access of information,
Social interaction,

Control by learners,
Cost effectiveness,
Easily correction.

BLE has been important part of "learning experience" of university students [10]. Students are satisfied at greatest degree and hence, prefer BLE again [12].

Reference [3] has decided to initiate BL approach project to eliminate bearing in mind and success matters of students. Offline and online change of courses has continued for 6 months and integration process has realized during one semester period in the scope of this project [3]. As it is obvious, blended learning is a significant method to bring solution to large-scaled educational matters.

C. How to design Blended Learning Environment?

Blended learning enhances rapidly by affecting higher education in local, national and global senses [6]. Against increasing attention, it may be analyzed that insufficient rate of studies is available that observe how "courses should be designed, implemented and evaluated to maximize" learning effectiveness [17]. In this study, design issue of materials to be used for BLE shall be analyzed.

"The implementation is planned step by step to increase contribution of students and enable healthy execution of learning process" [8]. Blended learning should be planned strategically in order for effective implementation of advantages brought by face-to-face and distance education ([7], [8]).

Integration of ICT and course management is not easy, which may result with many complexities having potential negative impacts on student commitment [16]. Educators should take necessary measures against the pupils, who refuse usage of technology and provide guidance and training support [4].

Reference [13] explains that some pupils experience difficulties while using online environments and therefore, learning management system should be learnt to overcome such problems [13]. Hence, BLE requires detailed planning. Any planning error may cause negative impact on education, which may deteriorate commitment of pupils and hence, drop the lesson.

As explained by Ref. [11], objective of blending is well-establishment of balance between face-to-face interaction and access to online information and to consider advantages, but "discharge disadvantages of each learning environment, in other words, to maintain balance on side of advantages, in other" [15].

"Blended learning is rethinking and redesigning" of learning, learning-teaching relation and issues relevant to design and management may be classified under following main headings; policy, planning, resources, time, support [7], content and material. This study explains problems experienced by educators in the course of material preparation.

Timing and calendar should be carefully planned by taking into account the fact that flexibility, easy-to-access, attention drawing features of the system are stated as positive sides [8]. Start and finish time of courses and their duration should be determined with respect to student needs [7] through usage of synchronous and asynchronous tools.

Online education does not only change class culture, but also creates differences in working environment and cultures of institutions [2]. This change may result with both positive and negative outcomes. Long-term exposure to computer may cause faculty personnel to experience physical disorders and work-load imposed on personnel due to online education changes may result with physical fatigue and psychological stress [2]. Therefore, relevant institution managers should improve strategic plans [8] and identify necessary measures against said impacts in these plans.

2. Methods

This research is a case study that is mainly used to define how successes are achieved rather than definition of successes obtained as a result of any method or implementation [5]. Aiming to set forth troubles encountered during preparation stage of any material, this research benefits form qualitative research methods for this purpose. Because the study concentrates mainly on material preparation rather than outcomes obtained as a result of blended learning [5].

Data analyzed in the scope of the study is collected through interviews. Researcher may gather data from relevant parties [5] while identifying target mass in the framework of qualitative study. On the basis of computer usage skills, distance education experiences and application of BLE in courses, lecturers at Computer and Instructional Technologies Education (CITE) department are selected. Interview questions are posted to 15 CITE academicians from 5 leading universities in Turkey.

ICT possibilities should be used in the scope of any study whose subject matter is BLE, which is one the implementation area of ICT in education. Therefore, researcher posted e-mail to the academicians to explain that interview questions may be responded face-to-face, through e-mail or online chat. However, 14 academicians have served neither positive, nor negative respond and only one academician stated that questions would be responded face-to-face. Thereafter, e-mail was posted to say 14 educators for the second time, which was responded by 4 educators, who completed and retuned interview questions by e-mail. Therefore, this study covers data obtained from responds of 5 participants. Despite criticizing survey questions, one of the participants responded all questions, except the 4th one. Data obtained are categorized and accordingly, content analysis is realized.

3. Results and Discussion

"Q1: *How do you maintain face-to-face and distance education balance in the scope of BLE?"* Researchers state that they consider, in the scope of the planning, the content of the course rather than time percentage. In addition, they stated that students' needs and level of education served as an indicator in identification of balance.

"Q2: *What kind of road map is followed while preparing distance education material to use BLE"*; responds of this question highlighted importance of the subject. Academicians stated that target students were taken into account while preparing material and process analysis was conducted. One of the participants explained that he

preferred arrangement of issues causing delay in courses as distance education material in class environments where face-to-face share was difficult. Another participant explained that he prepared distance education material about theoretical issues.

Representing one of the basic objectives of the research, the question asking "Q3: *What kind of bottlenecks are experienced while preparing distance education material"* highlights significant issues. Researchers explained that they could not benefit from visual contents due to copyrights, insufficient financial resources and license matters. This respond shows importance of distance education planning and management problems experienced by education institutions.

According to one of the participants;

"*Most of the internet materials do not offer any data about copyright. In cases where copyright should be paid for materials, relevant fee exceeds payment capability of any academician".*

Another academician explained "*time may be the source of problem when images and drawings should be original."* According to another participant "*First problem may be related with size of the material prepared. In this scope, connection speed should be considered."*

"Q4: Responds attached to the question asking *"Do you use LMS (Learning Management System) in your distance education? If yes, what do you think about LMS (usability, technical support, etc.)?"* show that LMS is used by educators. Participants stated that open source systems were also used in addition to LMS. One of the academicians explained failures of LMS in terms of task gathering, visibility of assignments by every student and peer evaluation.

"Q5: What is your daily working duration and how many hours of this time period is allocated for preparation of distance education material?; this question identified that researches spent 3-4 hours for preparation of materials purposes. One of the academicians stated "*My daily working duration is more than 8 hours. I use this time period for research and face-to-face lessons. Whereas, in the beginning of periods, I use this time period to prepare materials. The time period spend during such periods is more than 4-5 hours. During the period, I prepare materials whenever it is needed*".

"Q6: *Do you work for preparation of education material out of working hours?"*Has contributed responding of another significant objective of the research. All of the researches stated that they spent time to prepare materials out of their working hours and at night as well.

"Q7: What kind of physical discomforts do you feel while preparing materials?; respond of this question includes findings that support Ref. [2]. Ref. [9] identified that CITE educator candidates had specific concerns about physical disorders and this finding supports outcomes of this research.

One of the participants explained such problems as follows:

"I feel eye tiredness and discomfort on my waist, shoulders and wrists. Weight problems may be experienced due to long-time computer usage". All educators, except one, stated their neck and back pains, joint pains and eye disorders.

"Q8: What kind of technical problems due to experience while preparing material?; the educators stated that they did not experience any serious problems in this regard. This issue may be explained with the fact that participants are CITE lecturers. However, they encounter problems regarding insufficiency of software related with content improvement and whenever they are involved in situations needing higher-level design.

"Q9: Do you have any support personnel providing assistance while preparing material? If yes, please explain areas supported (graphical design, animation, etc.)?; this question highlights one of the significant problems of education institutions. All educators stated that any support personnel was not available. One of the researchers explained that support team was assigned to prepare course content of Distance Education Center. However, individual support team is not available whenever distance education material is needed to be used for other courses. Another educator highlighted necessity of design personnel by stating *"although it is necessary, any support personnel is not available. In particular, support team should be provided in graphical design and animation issues".*

"Q10: According to your point of view, what should be done to improve working conditions regarding preparation of education material?" Responds of this question are also important. Stating that material preparation process should be performed in corporate sense, participants stated that an expert was needed in this regard. One of the participants stated; *"I believe that a department for preparation of material should be arranged through a structure which is similar to content development office. These offices should have their own budget and supply activities. Because currency of material needed is lost in the scope of poor procurement system."* This issue highlights importance of supply and procurement process in institutions.

4. Conclusion

Education institutions have undergone transformation in last decades representing transition from information age to informatics age. Distances are shortened and access to information at any point of the world becomes easier thanks to ICT. Higher education institutions should keep up with transformation in this era experiencing ever-increasing information need. Having leading position in competition among institutions and survival requires being leader in said transformation. However, change brings specific problems. Redesigning courses to be provided through BLE seems to be one of the fundamental problems.

It is a known fact that satisfactory studies are not available about problems that may be experienced by institutions in the course of BLE preparation. This study shows that academicians encounter many problems while preparing education materials, which are to be used for BLE

purposes. Lack of support team in graphical design is the main problem among these. Another matter is the copyright problems and failures in supply system. In addition, longer time periods spent for design process result with physical disorders. It is evaluated that physical disorders of educators may become chronic, unless above conditions are eliminated. All above problems have negative impacts on design process of distance education materials, which are basis of blended learning. It is obvious that this negative impact shall also impair education quality.

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