

# **Integration And Sustainability Of Technology-Enhanced Systems Into Learning Environment: Cankiri Karatekin University Case Study**

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## **Abstract**

As a result of the continuous search for global competitiveness through providing the society with high quality education in the light of emerging technologies, Cankiri Karatekin University has embarked on a strategic planning and a pilot study on transition to Distance Education (DE). Providing on-demand training for professional development, lifelong learning, career change aimed at quite varied groups in society, Cankiri Karatekin University sets its sight on maximizing the quality of communication and intellect sharing between academic staff as well as enabling the effective assessment of their academic performance thanks to the integrated e-learning/distance education and corporate communication platform. According to this tested project based model, distance education infrastructure and educational e-materials have been prepared and used as a supplement to formal education. By this means, ensuring students' and teachers' readiness is aimed for the success of the future pure distance education programs. The study evaluates the pilot project titled "Integrated E-learning and Teaching Environment" by Cankiri Karatekin University, which was founded in 2007 and strives for developing as a globally competitive academic institution by employing an effective and efficient model in the use of technology in education. The technical background features as well as results of the pilot project have been evaluated and further suggestions have been presented, considering distance education practices in the world in general and, in particular, the potential that Turkish Higher Education and Cankiri Karatekin University carry in the field.

**Keywords:** Distance Education; e-learning; Life Long Learning; Institutional Communication; Teaching Environment

## 1.INTRODUCTION

The biggest difference between an online, virtual classroom and the traditional classroom is the way instruction is delivered. In a traditional classroom, the instructor is the center of learning and information is presented orally or through tangible text. The text can be engaged through active reading activities like highlighting, making notes in margins, and underlining and circling important information. The course material can be discussed in class and whatever questions or arguments arise can be answered and discussed face to face during the class period. In a traditional classroom setting, the teaching and learning happen on a synchronous schedule.

Conversely, online instruction occurs asynchronously. The instructor and the learners are separated by time and space. Online courses take advantage of the Internet as a teaching and learning environment; it's open, distributed, dynamic, globally accessible, filtered, interactive and archival in nature, (Elmore 2008). In online learning, the instructor acts as a guide to the process of learning rather than its director. Dependence on the instructor is reduced and students are empowered to take responsibility for their own learning referred to as Kosak et al. (2004). Text still plays an important role in online learning but now the text can be manipulated, searched, revised and updated and appears in short, and concise chunks, which can be distributed through a wide array of multimedia. Discussion of the text is done through online forums, live chats or e-mail messages. This situation involves references to Maguire (2002).

The rapid advancement in Information Technologies has globally influenced the education systems, and the integration of technology into education has increased the inclination towards Distance Education (DE). Online courses are becoming increasingly popular especially with the non-traditional student. The online students tend to be a mid-career adult returning to school. Also, many students see online courses as a more convenient way to go to school (Yang 2010). The trend does not seem to be slowing. In 2007, there was a 12.9 percent growth rate for online enrollments which exceeded the 1.2 percent growth of the overall higher education student population (Zhen 2008). Universities are offering more online courses to meet the demand.

It is important to draw attention to two issues. First of all, DE is not a supplement to traditional formal education. Tailor-made hardware, lesson materials and technology-based assessment methodology is employed in DE. Such a system is composed of the latest hardware technology available. Secondly, DE is not a form of instruction that underdeveloped countries use, on the contrary, most developed countries utilize DE systems within formal – informal education system.

Newly-formed universities face numerous challenges, on rather limited institutional budget, in competing with the universities that have long educational background. Thus, only the institutions, which appreciate and keep pace with the latest technology, can go beyond the existing frontiers in higher education and elevate their competitiveness.

In this study, Cankiri Karatekin University's DE need analysis has been discussed. Besides, system features and the results of the pilot study titled "Integrating e-Learning-Teaching Environment Project" have been evaluated. It is evident that the system is likely to play a prominent role in determining training systems according to Lifelong Learning practices.

### **1.1. Advances in Distance Education Field in Turkey and the Present Situation**

In parallel with the competitive global conditions, Turkey has been intensively working on the targets and strategies involving open and distance education in pursue of its targets related to higher education. Beginning with THE RELATIONSHIP BETWEEN BANK LOANS and ECONOMIC GROWTH in TURKEY: 1995-2010

Emre Sezici, Murat Yaman the Open Education System at Anadolu University, the efforts has gained perspective through TUBITAK-BILTEN DE Feasibility Study in 1997, and within this framework Feasibility Analysis of Nation-Wide Distance Education Alternatives study has probed then-current telecommunication infrastructure, needs analysis, alternative models and cost-benefit along with copyrights in DE. As an addition to that, DE Regulations was accepted and The National Committee of Informatics was founded in 1999. Such operation areas as The Regulation of Cross-University Communication and IT-Based Distance Higher Education, provision of lessons delivered via client/server matching between universities, regulation of independent course/program launch with the authorization of YOK, and course crediting are within The National Committee of Informatics' scope of authority. As the final step, UADMK-TUBA has been founded to provide support for the DE efforts (YOK 2011).

Turkey is a dynamic country and has a rather young population with 35 million people under 30 years old. Large portion of the young population are students. According to the recent statistics by The Ministry of National Education (MEB), a total of 14.115.892 students attend various schools and institutions of MEB. Additionally, around 3.180.000 students receive education at more than 170 universities. When calculated, these figures comprise almost 25% of the total population of the country. 1.7 million students take university admission exam every year; however, only 400.000 of these are able to be placed in a higher education program due to the lack of capacity problems (MEB 2011). Countries from the Balkans and Caucasus, Central Asia, Middle East, North and Central Africa demand higher education opportunities from Turkish higher education institutions as these countries are within the regional and cultural sphere of influence of Turkey, which emerges as a center of attraction in terms of education. IT potential has been used effectively in supporting DE. It is preferred and promoted, thus increases its popularity day by day.

### **2.ÇANKIRI KARATEKIN UNIVERSITY AND DE**

As of January 2012, there are a total of 176 universities, 108 of which are state universities and 68 which are the ones belong to foundations, in Turkey. As more than 110 of these universities were founded after 1992, they have yet to fully complete their physical or academic development stage. According to Student Selection and Placement Center (OSYM) 2009 statistics, more than 3.180.000 students are within Turkish Higher Education System. While 1.366.000 of these students continue their studies at Open Education Faculty, 1.640.000 students attend state universities and 176.000 students attend private universities. 31 associate degree programs at 14 universities, 1 degree completion program, 3 degree programs at 1 university, and 19 masters programs at 15 universities are available via Distance Education. Around 24.000 students receive education through distance education. Besides, according to OSYM statistics, 111.000 teaching staff are employed within Turkish Higher Education System. 50.000 of these currently work at the underdeveloped universities that were opened in 1992 and after. Academic staff training and academic staff support programs through DE are increasing their popularity as an effective in-service training tool (YOK 2011)

Çankırı Karatekin University (CKU), established in 2007, is rapidly developing with 6 faculties, 4 institutes, 1 college, and 4 vocational schools and serves around 5500 students through 266 academic personnel and 199 administrative staff. CKU appreciates the advantages that DE technologies will bring as an effective tool in competing within higher education sector. As a newly established university, CKU develops its technological infrastructure in order to meet the hardware-related and physical needs. Technological and topological features of the platform used in the pilot application shown in Figure 1 will be presented in the following section.

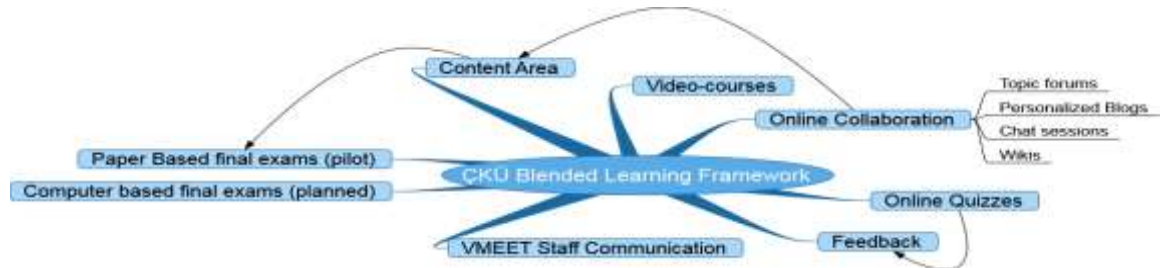


Figure 1: CKU Blended Learning Online Schema

### 3. APPLICATION OF PILOT PROJECT

#### 3.1 Project Goal

Delivering the Integrated Learning-Teaching Environment (ILE) solution that enables the existing Interactive Whiteboard (IWB) and other Learning Toolsets to function as one individual Virtual Learning Environment (VLE) towards University.

Our immediate ILE Objectives will transform the existing IWB from its initial stage into an integrated learning-teaching environment for the masses built on a reusable and sustainable learning-teaching framework envisioned by the University.

#### 3.2. Standard ILE Features

Included in the following subsection but not limited to Assessment, Lesson Solution, Wiki Solution, Glossary Solution, The Choice Activity, Course Solution, Workshop Solution, and Photo Gallery are existing components within this ILE. Herein, we will briefly elaborate on one of the solutions within the ILE. The overall ILE software and all existing components given below are shown in Figure 2.

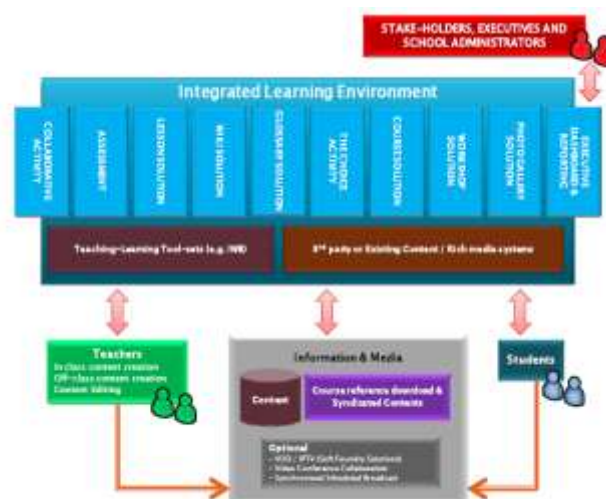


Figure 2: ILE Architecture diagram describing the 3 main working groups (stakeholders/executives, teachers, and students) and its integration into the system.

#### **4. INSTRUMENTS, DATA COLLECTION AND ANALYSIS**

In order to interpret the impact that the ILE had on the students' learning outcomes, two instruments will be used in this study: 1) the students' final exam marks in the different courses that same group of students attended during the same academic year by means of data obtained from faculty archive about final exam results, and 2) a twelve item survey, which measures students' assessment of ILE usefulness based on the instrument developed by Wang (2009). This survey included items relating to student interaction and active learning by means of the ILE system, and based on a five point Likert scale. The scale ranged from "Strongly Disagree" to "Strongly Agree". Students' satisfaction total score could range from a very low satisfaction level of 10 to a very high satisfaction level of 50.

The data collected via first instrument is going to be analyzed for group comparison using the independent samples t-test for students' exam outcomes. The statistics assess whether the means of two groups are statistically different from each other in order to be able to compare them. The data will be analyzed further with the SPSS. We hope that, we will get all statistics data at the end of this semester. In this study the first outcomes and system architecture were evaluated without statistics.

#### **5. DISCUSSION**

We have structured the DE organization in two steps: step one is to transform traditional teaching practices into technology-enabled ones, in order to keep up with modern teaching methodologies in higher education as well as to establish institutional background for future DE practices. There are numerous instances of such approaches which merge traditional classroom practices with the online collaborative work, also called blended-learning or hybrid learning. We have agreed that gradual transition from the traditional practices to the blended learning and further, distance learning phase, is necessary for the successful structuring as well as positive outcomes.

Blended courses make good use of advantages both face-to-face and online teaching practices would provide. To illustrate, the students are able to discuss and analyze the topics that were already covered online through digital self-study materials, Q&A sessions, topic forums, self assessment quizzes. Besides, online discussions enabled the students in the way that they could not in classroom environment. As everyone has a say without time or other social pressures, online discussions give many students the opportunity to express themselves more openly compared to the ones done in a regular class. Many students are reluctant to speak in class because of shyness, uncertainty, or language issues. The ability to take their time to compose questions and answers in an online discussion is an advantage to many students, and instructors report much higher participation levels online than in class. Many students tend to avoid contribution in classroom because of introversion, difficulty with oral expression and for some other personal issues.

#### **6. CONCLUSION**

Online courses are growing in popularity and demanded particularly by non-traditional students. Even though more and more universities are offering online courses, faculty members are still reluctant to teach online courses. They are concerned about planning and developing the courses, the overall quality of online courses and the lack of credit toward merit, promotion and tenure. Cankiri Karatekin University is a newly formed university and it is yet to complete its physical and academic structure. Thus, CKU aims at setting high standards by integrating technology based systems into its programs, consequently eliminating the drawbacks of the structural weaknesses. With this aim in hand, it prepares its academic background for setting up DE programs by analyzing DE systems and launching pilot projects. There are two components in DE: first one is to have academic staff that possess the required know-how and expertise in using basic IT skills; second one is to create quality and pre-leveled content. Therefore, universities are required to have the necessary academic background and hardware infrastructure regarding these two components. Otherwise, seemingly capable systems can turn into technological waste.

CKU has chosen to merge the opportunities that the accumulated know-how in the area brings and its own dynamics in order to create academic and intellectual value. Towards the target set ahead, gradual and proportional growth of the technological and relevant academic prerequisites have been sought for. Therefore, blended-learning practices are intended to form academic and system related basis of the future DE programs by avoiding trial-error programs in distance education and developing the programs that address the specific needs of the target group.

In this study, Cankiri Karatekin University's DE needs analysis has been discussed within DE course development in the world and Turkey and as an alternative solution, an integrated learning and teaching environment platform provided by Birtel as well as Corporate Communication Platform has been piloted as an assisting tool in formal education and its first outputs have been evaluated. Further outputs will be analyzed with SPSS after collecting all the data at the end of semester.

The following study will evaluate the statistical data and compare the success and system competence levels of the teachers and students, who are adapted to the distance education system, and those, who have directly started distance education program. Preparation of a survey has been started in order to determine comparable success determining competencies of the teachers and students, who earlier attended distance education programs without probationary period in different universities.

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## **REFERENCES**

- Elmore, H.W. (2008). Toward objectivity in faculty evaluation. *Academe*, volume 94 number 3, URL, <http://aaup.org/AAUP/pubsres/academe/2008/MJ/>
- Kosak, L., Manning,D., Dobson, E., Rogerson, L., Cotnam, S., Colaric, S. & McFadden, C., (2004). Prepared to teach online. *Perspectives of faculty in the University of North Carolina*

system. Online Journal of Distance Learning Administration, volume 7, number 3. URL, <http://www.westga.edu/~distance/ojdla/fall73/kosak73.html>

Maguire, L.L., (2002). Literature review-Faculty participation in online distance education: Barriers and motivators. Online Journal of Distance Learning Administration, volume 8, number 1, 2002. URL,

<http://www.westga.edu/~distance/ojdla/spring81/maguire81.html>

Yang, Y., (2010). Roles of administrators in ensuring the quality of online programs. Knowledge Management & E-Learning, volume 2, number 4, 2010. URL, <http://kml-journal.org/ojs/index.php/online-publication/article/viewArticle/80>

Zhen, Garthwait, Y. A. & Pratt, P., (2008). Factors affecting faculty members' decision to teach or not to teach online in higher education. Online Journal of Distance Learning Administration, Volume 11, number 3. URL,

<http://www.westga.edu/~distance/ojdla/fall113/zhen113.html>

Republic of Turkey Ministry of National Education (MEB). URL,

<http://www.meb.gov.tr/english/indexeng.htm>

The council of Higher Education (YOK). URL,

<http://www.yok.gov.tr/en/content/view/527/222/>

Garrison, D. R., & Vaughan, N. D., (2008). Blended learning in higher education: framework, principles, and guidelines. San Francisco, CA: Wiley & Sons, Inc.

[Holden, J. T. & Westfall, P., (2010). An Instructional Media Selection for Distance Learning-Implications for Blended Learning. United States Distance Learning Association.

Wang, W., & Wang, C., (2009). An empirical study of instructor adoption of web-based learning systems. Computers & Education, Vol. 53, No.3, pp. 761-774.