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## Evaluation of the Open Course Ware Initiatives within the Scope of Digital Literacy Skills: Turkish Open CourseWare Consortium Case

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### Abstract

This study aims to evaluate the Turkish Open Course Ware (OCW) initiative in terms of digital literacy skills required for effective usage for new learners. The study also finds out how universities, lecturers/academics and other institutions contribute to this initiative. For the purpose of the study, the descriptive method was used and a check-list which evaluates the OER for the digital literacy skills was created according to the literature review. Findings show that the Turkish OCW initiative has some different point of views in terms of content creation approaches and directions. However, it has interactive learning management system capabilities. The results indicated that the points can be developed for effective course interaction environments. It is also expected that the results will inform the communities about developing OERs and encourage them for further discussions and researches.

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### 1. Introduction

Open Educational Resources (OER) have become new information resources in learning environments based on information and knowledge sharing. These new environments contain not only traditional education materials such as course contents, textbooks, assignments and exams, but also new web environments that allow collaboration with users like blogs, wikis, social networks, RSS feeds, podcasts, videocasts and so on. In addition to effective user interaction, these new tools encourage learners and educators to teach, learn and make researches. On the other hand, usage of OER also requires digital literacy skills: define, access, manage, evaluate, integrate, communicate, create digital information for 21st century's learners.

Digital literacy skills have a huge impact on lifelong learning processes in terms of accessing to right information by using reliable information resources; therefore, it is increasingly gaining a vital role. Many studies reflect that digital

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literacy skills for evaluating OER can be listed as resource attributes, resource usage areas, recommended additional resources and interaction type. As a main part of OER, OpenCourseWare Initiatives are rapidly growing and leading educational institutions to create and share open content for their educational materials. In this context, digital literacy should be taken into account in the creation of OER content.

This study aims to investigate the Turkish OpenCourseWare Consortium in terms of digital literacy skills for resource evaluation.

## 2. Literature Review

The open educational resources (OER) and open courseware (OCW) are some of the recent innovations that are especially relevant for achieving equitable access to quality education (Das, 2011). OER provides a new model for dissemination of knowledge and collaboration among scholars, students and citizens around the world. OERs are open content that is freely accessible worldwide from a common portal or gateway. Open Educational Resources has some definitions; most frequently used one from UNESCO: “technology-enabled, open provision of educational resources for consultation, usage and adaptation by a community of users for non-commercial purposes” (UNESCO, 2002).

Lane (2010, p.2) indicated that “With OER there are potentially many more people and processes that are able to utilise open content and open technologies in novel ways not thought of by their originators. Openness provides an invitation to innovate, even if it is only to learn in a different way.” The advent of OER after the launch of Massachusetts Institute of Technology (MIT) Open CourseWare has offered more flexibility to both content and technologies and encouraged the other institutions such as universities to open some of their own content and technologies up as well, thus providing innovations for others to build upon. He also added that with OER there are potentially many more people and processes that are able to utilize open content and open technologies.

OER is essential to equip young learners with new sets of occupational and life skills. OER is not like some of the longer learning resources created for university students. OER is open to the public as well as being of use to current students (Das, 2011). OER can be considered as an innovative development in their own right as the open licensing inherent in them enables content and technology creators to make their content or technologies more available and accessible to more people than would otherwise be the case (Lane 2010).

Digital literacy is an important entitlement for all young people in an increasingly digital culture. Digital Literacy prepares young people to make sense of the world and to thrive socially, intellectually and economically, then it cannot afford to ignore the social and cultural practices of digital literacy which enable people to make the most of their multiple interactions with digital technology and media (Futurelab, 2010).

The new generation has different expectations about how to find and access information and also they have different perspectives towards research. They have difficulties in evaluation and critical thinking but are good at copying and pasting. They need help for information literacy (Secker, 2010). Information literacy / digital literacy needs to be embedded into new teachers training; in this framework, information resources can be created to meet the requirements and shared openly.

Tosato and Bodi (2011, p.2) stated that “OER may offer enormous potential in supporting the development of creativity, as they can be used and reused by teachers and learners in a range of contexts; contexts of formal, non-formal and informal learning, as well as contexts of both individual and collaborative learning in relation to both product and process”. Environments where the users can interact and share best practices seem to be the best way of enhancing creative learning processes through the effective use of OER. The authors also added that it is necessary to design and implement specific learning situations based on OER and Communities of Practice

OER is a significant information source for teaching and learning environment, open to anyone interested in education, including students, teachers, professors and lifelong learners. As it is highlighted by OECD “OER can be an efficient way of promoting lifelong learning, both for individuals and for government, and can bridge the gap between non-formal, informal and formal learning” (OECD, 2007). Obviously the information literacy is an indispensable element of lifelong learning. Mentality of the open movement is reinforced here by the triangle which comprises lifelong learning, information literacy and OER. Reaching to learning communities through OER would be a significant bridge among public as an open community. In this context, evaluation of OER and OCW resources is

important in terms of digital literacy. It is also pointed out in the literature that there are some evaluation criteria for OER. According to Robertson (2010), these can be listed as resource evaluation (authority, producer, production date and context), resource usage capabilities (licences and copyright issues), required utilities (software and infrastructure requirements) and efficient interaction (collaboration, user-generated content, group work).

There are several possible positive effects of open sharing such as free sharing, broader and faster dissemination of information, rapid quality improvement and faster technical and scientific development; decentralized development, stability and security (Hylén, 2006). These positive effects of open movement potentially contribute to the process of information literacy, and lifelong learning in the broader term.

### 3. Methodology

This study aims to demonstrate the current situation of Turkey's first OER initiative, established by the Turkish Academy of Science. The subject was processed in the context of digital literacy skills within the scope of information literacy. The study explores how universities, lecturers/academics and other institutions contribute to this initiative. The descriptive model was used for the study and the data were gathered through content analysis and web based checklist. Related research data were assessed via Predictive Analytics Software (PASW).

### 4. Findings

In this research, initially the OER initiative in Turkey which is called the Turkish Academy of Science Open CourseWare (TUBA OCW) was analyzed in its structure and content according to digital literacy criteria that were determined for OER initiatives. In this context, the findings were presented as it was stated in accord with the related criteria.

#### 4.1. Evaluating the resource

Evaluation of the resource is the initial topic analyzed for this research and in this scope content distribution according to disciplines of TUBA OCW initiative was examined. The findings on the content distribution display that 49% of the courses are related to Social Science. On the other hand 2% of the courses are related to Engineering while 49% of the courses are related with Science. Fourteen institutions are content providers for TUBA OCW initiative and some courses were translated into Turkish and adapted to the TUBA OCW initiative. These can be considered as a remarkable work. According to the findings, courses were generally taken and translated from MIT which is a leading initiative for OCWs in the world.

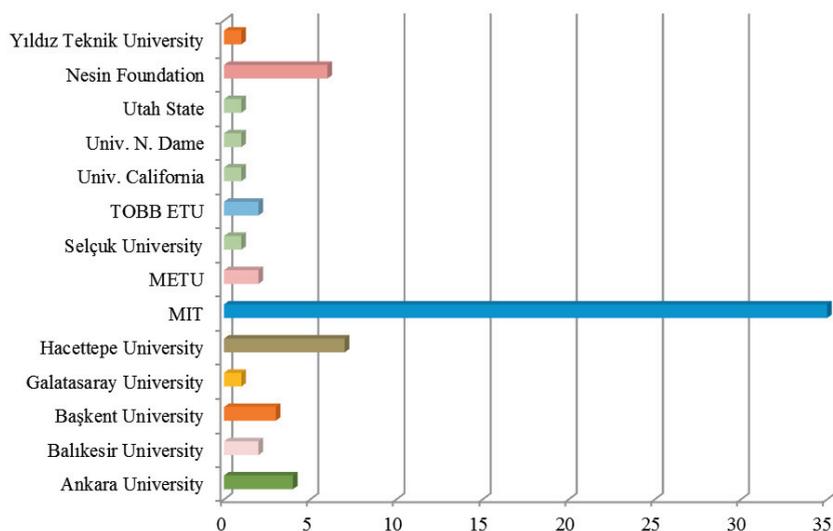


Figure 1. Content providers to TUBA OCW

Among the fourteen institutions, most of the TUBA OCW's content was provided from MIT. It was discovered that 9 Turkish universities are included in the contribution and also translated courses from University of California and Utah State University were integrated with TUBA OCW content. Furthermore, one foundation (Nesin Foundation) has added some courses to TUBA OCW content (see Figure 1).

The findings demonstrate that more than half of the OCW offered are in original content although 43% of them were translated from MIT, University of California, Utah State University and University of Notre Dame. Course levels offered by TUBA OCW are mostly (87%) for undergraduate level and 13% of them for Master and PhD levels. Beside the course levels, the findings reveal that 36% of the courses cover 11-14 topics while 15% of them include 15-20 topics. 12% of the courses comprise 26-30 topics when 30% of the courses contain 21-25 topics. On the other hand 16.4% of courses have at least 30 topics and three courses have less than 11 topics. The effects of the Turkish Higher Education System can be seen in this situation; since the system generally contains 14 weeks in a term/semester and courses generally have 14 topics. In contrast, translated courses generally have 21-25 and more than 30 course topics.

One of the important factors for OER and OCW initiatives is current and updated resources within the scope of digital literacy. Findings presented in Figure 2 indicate current situation TUBA OCW's content.

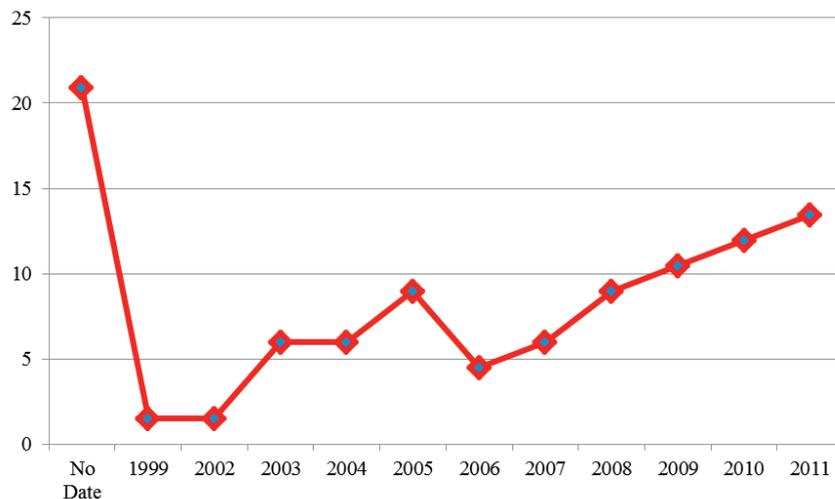


Figure 2. TUBA OCW Course Distribution by years

As it is seen in the Figure 2, more than one-fifth of the TUBA OCW courses does not have any information about creation date. In addition to this finding, course dates are changing between 1999 and 2011. It is also seen in the Figure 2 that course dates have been increasing since 2006. Furthermore, it can be said that outdated courses are generally translated courses and some of them show some experiments with videos.

#### 4.2. Usage conditions of resources

The usage of resources is an important point for OCW and OERs in terms of digital literacy. It is reflected in usage policies and copyright issues of resources. Another point analyzed within the TUBA OCW initiative framework is usage policies and licenses. In the light of this information the findings show that TUBA OCW resources can be used by individuals under Creative Common License. Users can use these resources according to Attribution (BY), Noncommercial (NC) and Share Alike (SA) attributes of this license.

Within the framework of resource usage analysis, the resource formats were investigated. According to findings most of the courses (86.6%) in TUBA OCW were created as text based PDF files and 10.4% of courses have videos

and its recorded editions as PDF documents. Only 1.5% of the whole OCW content consists of HTML and Microsoft Word formats.

#### 4.3. Utilities and infrastructure requirements

OCW and OER give support to effective learning by providing new resources and additional resources. The findings about additional resources for TUBA OCW content reveal that almost 67% of TUBA OCW initiative has links to the course readings, electronic resources and comprehensive reading lists. 69% of them have exams and sample questions for self-evaluation of individuals.

In addition to the course materials and course readings, some courses require specific programs and infrastructure capabilities for efficient learning. In this context, the findings reflect that only six courses require different programs and infrastructure capabilities beyond the Adobe Reader, Microsoft Office and browser requirements. File extensions of these programs can be listed as .jar, .c, .swf, .spo/.sav files.

#### 4.4. Interaction conditions provided by resource

Type of interaction assumed by the resource has become an important factor with the Web 2.0 facilitations and changes at user behaviors. Digital literacy skills also require a well-structured interaction with OCW or OER. Some interaction types such as Wikis, Forums and Instant Messaging services are presented by the courses. In the light of this information, TUBA OCW initiative is based on Moodle Learning Management System that provides new web technologies for 21st century's learners. However, courses in the TUBA OCW initiative generally provide one sided interaction that requires following texts in PDF documents. According to the analysis, it is also seen that users were directed to PDF files. Furthermore, direct observations show that some courses provide PDF contents apart from video interaction. Video based courses help students to see some experimental and practical approaches during the courses. On the other hand, as a useful lifelong learning application, some contents are available in mobile platforms through providing mobile interaction with individuals. As a result of the content analysis, courses and content creation policies used as a guide for content creation, lead the users to create PDF based content, although Moodle has interactive media platforms opportunities. Analyses also reveal that TUBA OCW initiative does not contain any Web 2.0 applications even though Moodle structure has Wiki, Forum and Instant Messaging modules which provides more user interaction and more efficient content creation.

## 5. Results and Recommendations

In essence, OCW, as a new controlled information resource, vitally significant and essential for self-learners. According to the findings, it was able to achieve some results and evaluations about TUBA OCW initiative within the scope of digital literacy. These evaluations and results can be listed as:

- E Most of the courses were created by Turkish scholars,
- E Most of the courses were created for undergraduate level,
- E More than one of five of the courses does not have any information about creation dates that reflect how current they are,
- E Due to effects of Turkish Higher Education System, courses generally consist of fourteen topics, while translated courses contain 21-25 or 30 and more content,
- E Materials presented to users can be used under the Creative Common's BY NC SA license,
- E OCW Contents were generally produced in the disciplines of Social Sciences and Science: just very few of contents produced in Engineering,
- E Content is generally created via PDF files but also some courses are accompanied by some videos and can be used in mobile platforms,
- E Content creation policies guide to content creation by instructing how to upload PDF files to Moodle system,

E Courses generally allow the text based interactions for users and some of the courses provide more effective interaction with videos and more advanced multimedia tools,

E Wikis, Forums and Instant Messaging services are not used in TUBA OCW initiative.

According to the results, it can be stated that OER movement in Turkey is a quite new concept. It is possible to list outcomes of this research for TUBA OCW initiative as follows:

E Content creation policies can be revised and Moodle functions can be promoted instead of promoting PDF upload process in these policies,

E Moodle modules such as Wikis and Forums can be used for providing user interaction for courses more actively.

E More content can be added in the discipline of Engineering, other contributors or content providers should be encouraged.

E All organizational OCW initiatives can be embedded and integrated with Turkish OpenCourseWare Consortium.

E The evaluation of OCWs in the name of digital literacy is effective in updated information and lifelong learning.

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