Impact analysis of using OpenCourseWare to flip the classroom – examples in Taipei Medical University
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Abstract
In Taipei Medical University (TMU), we began to utilize OER content to facilitate the learning outcome for 7 years. The first course, the Basic Computer Concept, is an undergraduate-level general education course. 6 years ago, when I first know the Computer Science-E1 course from an OCW site, I was amazed about the content. This OER content is originally form a Harvard extension school course. The lecturer is David Malan. The first version of video is in Flash video format. Those were shoot in classroom. However, just watching the interactive between David and students is still fun. There are not so many interesting videos could be used to teach non-computer science major students to learn about computers. For these reasons, I began to use E1’s videos as a part of my courseware. I spend more time on designing creative activities for my students.
During the past 6 years of practice, students tend to consider it is a course with challenges but worth to enroll. This paper will show the design and implementation of this course. Moreover, analytics of student behavior and result of student feedback will be shown as well.

Keywords
OpenCourseWare, flipped classroom, course design, learning analytics

Introduction
Taipei Medical University (TMU) is a healthcare professional education institute in Taiwan, while all students’ majors are related to health science. The concept of OpenCourseWare was introduced into TMU in 2006. The OCW.TMU was online in 2007, while the first course was online in 2008. On the other hand, the first course, the Basic Computer Concept (BCC), was taught in 2007 by using OCW content and integrated with flipped classroom course design. After 5 years of practice and promotion, in 2012, the second course begin to adapt the same course design. "health information systems to improve quality of care in resource-poor settings” is a graduate course. Not only using the content, but we also cooperate with MIT instructors and students for developing course projects. There are more flipper classroom courses happened in TMU. These might be the next step during the MOOCs era.

Course Design & Implement
During the past decade, one of the computer literacy courses, Basic Computer Concept (BCC), was taught by the author. Because information technologies and classroom technologies are improved every year, courseware should be updated as well. (Yue and Ding 2004; Yue and Chen 2004) The BCC course has been through several transitions in order to fulfill environmental changes and student outcome suggestions. For example, in 2003, it offered as online video-on-demand lectures due to the SARS. (Wan 2009) Beginning in 2002, Hewlett Foundation has founded various developments of open educational resources to improve quality of teaching and learning. MIT’s opencourseware was one of them.(Atkins D. 2007) “Computer Science E-1: Understanding Computers and the Internet,” (E1) provided by Dr. David J. Malan from Harvard Extension School, was released for self-learners in 2007, (Malan 2011) Since the fall semester of 2007, BCC has used E1 courseware as major teaching materials.
A BCC course usually has several blocks, including introductory to hardware, software, internet, and their applications. The course is consisting of 2 hours lecture each week for 16 weeks. In TMU, it’s an elected course with only 60 available seats. However, there were more than 370 students pre-elected this course in 2009. Enrolled students had come from various colleges or schools in various school years.

For students in a medical university like TMU, it’s not very important to train them to be programmers or networking experts. The major objective of this introductory course is to let students learn how to use information technology (IT) tools to facilitate their daily work. For example, students should know why computers can let people work more effectively and efficiently. Also, students should know where to find answers or resources of their homework or research through internet or databases. Of course, they should know how to use IT tools to present their ideas.

The BCC course is delivered on TMU’s learning management system, My2TMU. Topic and instruction are renewed on a weekly basis. OCW content is the major part of course content. Additional learning content is made by Powercam®, ppt, or pdf. We use synchronized platform occasionally, which is done by using JoinNet® or Connect®. (Wan 2009, 2008) It is an e-learning course. Students need to come back at least once a week to find out what they have to do for that week. Students can give feedback through discussion forums or surveys.

Student surveys are major evaluation tools for the BCC course. Satisfactory survey for literacy courses has 15 satisfactory questionnaires plus 1 open question. Students are required to fill the survey at the 14th weeks of every semester. A survey regarding quality of e-learning will be collected at the end of semester. Both of the data were collected through My2TMU. A peer review was done by each student after they viewed each team project. Every team member could give a grade to other members in the same team. Students assessments came from their homework, team projects, discussion attendance, as well as the peer reviews.

The original web site of E1 put all materials in one page. (Malan 2011) It might be easy for self-learners to select topics they are interested in. For a regular course, progress checking is relatively important. By using LMSs, instructors can guide students by arranging topics and activities on a weekly basis. Instructor can check students’ status or progress as well.

**Results of Student Feedback**
From students’ surveys, some students did think it’s a very good opportunity to learn courseware from Harvard University. As shown is Fig. 1, more and more students tend to watch all the teaching videos. One third of students think the English speaking courseware are too hard. However, some students mentioned video subtitles would help. Supplements with local language are necessary. Translation projects like Opensource Opencourseware Prototype System (OOPS) should be one solution for students to learn more.
The surveys are also shown about 40% of students liked this course to be an e-learning course. However, there are less than 10% of students liked the English-speaking OCW. Generally speaking, they think time-flexibility and activity-diversity are two major benefits from this course. Student self-assessment also showed that more than 90% of students thought that they had learnt in this course. Moreover, more than 90% of students would like to recommend this course to others.

Results of Student Activity Records
As shown in Fig.2, there is a slight correlation between score and their reading records. Students with higher score spend more time on the e-learning platform.

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References


