During the last few years, there have been significant developments in the online course tools over the world wide web (WWW or web). WebCT (http://www.webct.com), e-Teaching and e-Education (http://www.ecollege.com; http://www.e-education.com), and Course Info (http://www.blackboard.com) are some of the examples widely used at colleges. These tools host teaching and learning materials for both the teachers and students while provide facilities to enhance and improve the interactivity between the teachers and students. Typical online facilities provided in these tools include syllabus tool, calendar of events, email and live chat boxes, threaded discussion forums, tests and exams, announcement bulletin boards, study journals, feedback questionnaires, etc.

These course tools can be used within and/or outside the classrooms. If they are used outside the classrooms at distance, they provide a virtual classroom environment for delivering curriculum materials at any time from anywhere by anyone who is enrolled on the course (Turoff, 1994; Hiltz and Benbunan-Fich, 1997). If they are used as an enhancement in classroom teaching, they not only improve the accessibility but also interactivity within the classes. Wade et al (1999) discusses their experience of not only the use but also the development of web-based educational environments for software engineers.

TELD is yet another online courseware engine over the web. However, TELD has its unique features. Firstly, the TELD engine is also a courseware search
engine with which both teachers and students are able to search for relevant curriculum materials. This is similar to the function of the NEEDS search engine where teachers register their teaching materials while others including students get hyperlinks to download these materials. Secondly, the TELD engine is a web host with which teachers and students archive and obtain curriculum materials. This function is common in most software course tools. However, TELD specifically support the “Teaching by Examples and Learning by Doing” method that unifies Case method (CM), Problem-based learning (PBL), and Project-based learning (PBL) widely practiced in business, medical, and engineering education respectively. The third unique feature of the TELD engine is its online facilities supporting group activities in collaborative and participatory learning. Groups are able to plan their exercises and projects within TELD. Groups are able to prepare agendas for holding workshops or meetings on specific issues of the project and then report on the progress in the form of minutes of meetings.

First of all, Section 14.1 will give an overview of the online TELD courseware engine. Section 14.2 will discuss some of the design issues related to the development of the TELD courseware engine. The general operation of the TELD courseware engine will be briefly shown in Section 14.3 using a “Product Engineering” course as an example. Some insights from the initial experiences of the TELD method will be drawn in the last section to conclude the chapter.

14.1. WWW.TELD.NET: ONLINE COURSEWARE ENGINE

TELD does not only unify the Case Method and the Problem/Project-Based Learning method but it also represents a web-based online courseware engine as a computer system on the Internet. After our initial efforts, the prototype TELD system has been developed. Figure 14.1 shows a general scenario where TELD is used to support different faculty and student users. The TELD courseware engine combines the following four key functions into one framework:

- Firstly, TELD represents a teaching and learning method that unifies a number of contemporary methods such as Problem-Based Learning (PBL) in medical education, Project-Based Learning (PBL) in engineering education, and Case Method (CM) in business education.
- Secondly, TELD serves as a web server for hosting teaching and learning materials especially based on the TELD method. A variety of online facilities are provided for editing and uploading course materials such as syllabus, schedules, curriculum, examples of case studies, exercises of mini-projects, and assessments.
- Thirdly, TELD is a courseware search engine where educators are able to register their course materials and search for suitable materials for a particular course. In contrast with general-purposes of other search engines, TELD is set