

Sparkling Digital Textbook

General

Product/Service Organization: KERIS, DaouInCube, Doosan Dong-A, MiraeN

Category: 26. eBooks

27. Book Supplement

Product or Maturity Level: 3. Established

Scale: Country-wide solution

Challenge

In 2011, the Ministry of Education, Science and Technology of Korea has announced “Promotion Strategy for Smart Education” to respond to the changing environment, by focusing on customized learning and teaching, which enhances the capacity of learners in the 21st century, by moving away from uniform to individualized education, from standardized to diversified knowledge, and from admission-oriented to creativity-based learning. The Korean government plans to implement Smart Education by establishing wireless network in all schools to allow students to learn whenever and wherever as well as an education information system that can run in PCs, laptops, smart tabs, tablet PCs, and smart TVs. The government aims to distribute digital textbooks to elementary schools from 2014 and ultimately to middle, and highly schools by 2015.

Solution

In order to meet all requirements of Smart Education successfully, we define that the potential of the digital textbook is limitless. Eventually we develop digital textbook based in EPUB 3 - a distribution and interchange format standard for digital publications and semantically enhanced Web content including IMS QTI, HTML5, CSS, SVG, images and other multimedia resources to better support a wider range of publication requirements including complex layouts, rich media and interactivity, assessment items and global typography features. We also extended the current EPUB Schema so that QTI 2.1-based assessment items can be processed inside EPUB documents. And we design a nationwide open platform containing a variety of learning materials so that students may have access to high-quality educational information at a low cost and explore the world beyond the classroom. Moreover, in order to strengthen the capacity of smart education of the teaching staff, we have offered special trainings to 25% of the entire teachers beginning from 2012.

Learning Impact Outcome

The current service in progress is provided to approximately 100 middle schools, and it will be expanded to 420 schools including elementary, middle and high schools all over the country from May 2013. We are encouraged by the results showing a significant percentage of students proficient at the highest scale of digital reading and the small proportion of low-performing students. According to a survey officially conducted by KERIS, students who use the digital textbooks improve academic achievement by 82.5% in, problem solving ability by 97.2%, and self-directed learning skills by 56.5%. Smart Education will become a momentum for the innovation of the overall education system, including its environment, contents, teaching method, and evaluation.

Return on Investment

The Korea government will spend approximately 60 billion in 2013 for the Smart Education project. It will help schools, districts and systems meet the technology infrastructure including hardware, software and network system needed to implement a transition to digital textbooks. As the Smart Education become more nationally, it will likely create significant added value by providing high-quality education in cities and even rural areas. The quality of the digital textbook education would significantly improve (along with other less-tangible benefits such as an expected lowering of the dropout rate and improved test scores) and the cumulated saving would be substantial. And the government expects to produce approximately 900 jobs related to the Smart Education project.