

Outline and Expected Effects of the Korea Education Metadata (KEM) v3.0

Yong-Sang Cho _ Associate Researcher, e-Learning Standardization Team, Korea Education & Research Information Service · zzosang@keris.or.kr

* Outline of the Korea Education Metadata v3.0 (KEM v3.0)

It can be said that the Korea Education Metadata (KEM) has become something of a household name when it comes to the Educational Information Metadata, since December 2004 when it was designated as the first e-Learning related technology standard in Korea (KS X 7001). At the time, however, KEM was limited to the elementary and secondary education fields, and consequently did not meet the broader needs of higher education fields including university education. This has prompted many in the educational fields to raise the need for the regular revision of the Educational Information Metadata. In response to this situation, research aiming to expand the scope of KEM's support to higher education fields was carried out in 2005. In addition, an application to acquire Korea Standard certification (KS) was filed in 2006. The deliberation process is now practically completed.

1. Structure of the specification of KEM v3.0

While the KEM v3.0 research was conducted in 2005, an in-depth discussion was made on the composition of a KEM standard. Specifically, the discussion concerned whether to pursue a single standard that could encompass all the educational fields, just as the existing KS standard does, or alternatively, seek

multi-part standards that enable separate management for each educational field. Each educational field in Korea - elementary and secondary education, higher education, corporate education, life-long education - has different demands and characteristics. As such, it was concluded that management by educational field was the most appropriate solution. As a result, the current KEM v3.0 as the national standard (KS) was proposed as follows, in the form of multi-part specifications.

- 1) KEM-Part1 (KS X 7001-1) : Outline of the Korea Education Metadata
- 2) KEM-Part2 (KS X 7001-2) : The Korea Education Metadata regarding primary and secondary education fields
- 3) KEM-Part3 (KS X 7001-3) : The Korea Education Metadata regarding higher education fields

2. Copyright management elements in KEM v3.0

The copyright metadata must include the identification of information resources, and information on content and characteristics. It must also support the systematic management and seamless search of information resources. Currently, however, the copyright protection solution of Digital Rights Management (DRM) is not yet equipped with a metadata and interoperability standard. Under such circumstances, the focus of

KEM v3.0 standard was on providing a foundation for a systematic copyright management system standard. For this purpose, seven categories related to the Educational Information Metadata were classified and each has the sub-element which expresses its value in order to design KEM v3.0 in a way that is practical. The categories taken into consideration are as follows. 1) the cost, meaning whether any cost is involved, 2) copyright and other restrictions, 3) the copyright holder, 4) the copyright issuer, 5) the grant, meaning whether one is authorized to use it or not, 6) the expiration date, and 7) description.

* Current status of the national standard (KS)

Characteristics and details of KEM v3.0 were twice presented at meetings of ISO/IEC JTC1 SC36, an international standards organization on educational information, in March and September of 2006. Furthermore, SC36, an expert committee on educational information under the Korean Agency for Technology and Standards (ATS) conducted intensive deliberation on KEM v3.0 from July to November, 2006. This deliberation served as a review for national standard certification (KS). KEM v3.0 has already practically passed the committee's assessment. As there would be a significant ripple effect from KEM v3.0, the deliberation had much more depth when compared to the one for KEM v2.0. The major points of discussion were as follows.

■ Adding 'Link' rights to grant elements of copyright

Some raised the issue that along with 'view', 'copy', 'print', and 'edit' rights regarding educational resources, rights regarding the 'link' function should also be considered to be under copyright protection and management. The final draft of KEM v3.0 reflected this.

■ Discussion of terms used regarding 'Teaching Method'

One of the most hotly debated issues was the use of the term 'Teaching Method'. Regarding sub-elements of 'Teaching Method' for the KEM v3.0 standard, the Aviation Industry CBT Committee (AICC) in America proposed three types of simulation, that is, guided simulation, lock step simulation, and free-play simulation. However, it was decided during follow-up discussions that one single term 'simulation' should be used to integrate the three. The 'game' type was added during discussion as well.

■ Guide on recommended selective/mandatory elements for metadata

KEM v3.0-Part3 will be expanded on a step-by-step basis in the higher education field including content for cyber universities and university e-Learning support centers. To this end, a guide for recommended content should be provided by comparing mandatory elements of MIT's Open Course Ware (OCW) and mandatory elements proposed by the content development project in 2006 for cyber universities.

Mandatory elements of metadata have recently become an issue for the Metadata for Learning Resource (MLR) project which is mostly driven by WG4 of the ISO/IEC JTC1 SC36. In Korea, the classification between selective/mandatory elements of metadata can be flexible, depending on the unit and purpose, and based on Korea's extensive experience in metadata-based service. Consequently, the standard of KEM v3.0 provided recommendations as an addendum to the specifications and can be adjusted in order to meet the specific service or business purposes.

* Expected effects of KEM v3.0

1. Consistent use of metadata in the elementary, secondary and higher education fields

The 'Classification' category of KEM v3.0 guides methods of use through four categorization systems to cater to each educational field. KEM v3.0-Part2 offers guidance on 'Classification System for the Seventh Curriculum' and 'Classification According to Data Types', while KEM v3.0-Part3 'Classification System for University Departments' and 'Classification System for Occupations'.

When it comes to classification systems, a variety of classification information can be utilized to best suit the purpose of each case. For example, 'Dewey Decimal Classification (DDC)' can be used for bibliographical information, and for user-tailored and smart online services, 'Classification System for the Seventh Curriculum' and 'Classification System for University Departments' can be used. By tapping in this characteristic, a system could identify user preferences in advance or provide the best search results more easily by narrowing down the scope of the search.

2. Role as a conversion system for major metadata standards

KEM v3.0, while embracing the metadata elements and glossaries of both Learning Object Metadata (LOM) and Dublin Core (DC), also reflected unique characteristics of Korean education. On top of that, as the number and type of educational resources utilized online increases, the resulting characteristics will be reflected in many countries. A few items sure to be embraced in the international metadata standards in the near future are : classification of e-books as information resources, copyright elements required to operate a copyright management

system, and use of metadata on evaluation questions. In the case of Korea, there is a particular sense of urgency in addressing these issues.

In addition, the current KEM v3.0 will become a foundation to enable automatic conversion between metadata, along with the LOM standard, DC standard, Canada's CanCore standard and Australia's EdNA standard.

3. Role as a foundation for introducing a copyright management system

KEM v3.0 can prove its usefulness in 'definition of copyright metadata', which should be the first and foremost item when considering introduction of a copyright management system such as DRM. Among KEM v3.0 standard's copyright metadata elements, 'rights holder', 'rights issuer', 'grant', and 'expiration date' are the information that is utilized without exception when establishing a copyright management system and providing services. Even though a copyright management system is not yet in place, service target and scope (read only, unlimited distribution, etc.) can be identified by capitalizing on the information recorded in KEM v3.0's copyright elements, thereby assisting copyright protection.

KEM v3.0 is the result of a development process of the Educational Information Metadata, which was an attempt to make application by the educational field more flexible, provide various services based on educational resources, and manage copyright in a systematic manner. In the future, KEM will continue researching and developing a smart, ontology-based educational service. KERIS®