Revision of Classification of Fields of Education to Enhance the Availability of Educational Statistics

Park, Sung Ho

Lim, Hu Nam

Moon, Sung Bin

Kim, Bon Young

Lee, Ki Jun

Shim, Woo Jeong

Yun, Sin Young

Seol, Gah In

Universities are continuously reforming their departments according to the current trend of convergence in the academic area and the change in the business and industrial world. The validity of the classification information is becoming more and more important as the classification information of the departments are used for the selection and assessment of various university support programs, university structural adjustment, manpower supply prospect etc. Such being the case, the purpose of this research is the improvement of the academic department classification system for the effective management of the university statistic information.

For this cause, we examined the domestic and foreign academic department classification system and the relevant classification system. Also we examined the validity of the academic department classification of the current basic educational statistics, and based on that, we set-up principles and standards of the academic department classification reform. Additionally we proposed an academic department classification improvement scheme of all seven series according to the principles and standards of the academic department classification reform that we set-up. Lastly we suggested the task that has to follow this research. The main research contents and results of this research are as follows.

□ Examination of the major domestic and foreign academic department classification system as well as related classification system.

At this research we looked at the present condition of the major domestic and foreign academic department classification as well as related classification in order to examine the present condition of the current academic department classification. Our domestic and foreign academic department classification examination included the KEDI academic department classification, the university establishment and operation regulation, the International Standard Classification of Education, UNESCO (2013) (Classification of education field, ISCED-F 2013), the United States Classification of education programs etc. And our related classification examination included the National Science and Technology Standard Classification, the Classification of research field in the National Research Foundation of Korea, the KSIC and KSCO, the KECO, the NCS, the academic degree etc. Through the comparison of those classification systems we derived into a conclusion that we need consistency between various academic department classification systems, connectivity between the sciences classification and occupational classification, development of a classification system considering the convergence, diversity of the department designated as a research subject, principles related to academic department classification and setting-up of classification systems, management of department history,

systematic and professional management of academic department classification, regular examination and improvement of the classification system etc.

□ Examination of the validity of the Basic educational statistical academic department classification system.

In our research we analyzed the internal validity and the external validity in order to examine the validity of the basic educational statistical academic department classification system currently existing. Regarding the internal validity, we analyzed the consistency of the classification and the consistency of the school system and the appropriacy of the scale of the classification unit. Regarding the external validity we

Analyzed the consistency between the Basic educational statistical academic department classification and the curriculum organization unit standard classification

which share the greatest similarity.

First, in matters of the scale of the classification unit, it was appropriate regarding the large series, but in regard to the medium division, the size of the [cultural science], [language·literature] medium division of the art and humanity department, the [management·finance] medium division of the social department, the [computer· communication] medium division of the engineering department, the [biology·chemistry·environment] medium division within the natural science department turned out to be big. The medium divisions of [traffic·transportation], [chemical engineering], [theater· cinema], [industry], [pharmacology], [agriculture and forestry·fishery] were consisted of size at the level of a small division. So, the possibility of departmentalization or combination needs to be reviewed related to those divisions in regard of the consisting departments' characters.

Related to the small division level, the size of the small divisions such as ⟨business administration⟩, ⟨physical education⟩, ⟨family·social welfare⟩, ⟨science of public administration⟩, ⟨liberal humanity⟩, ⟨telecommunication engineering⟩, ⟨computer science·computer engineering⟩, ⟨food and nutrition⟩, ⟨life science⟩, ⟨physical education⟩ appeared to be big. Regarding those small divisions we need to review the promotion of the midium division or the departmentalization of the small division according to the composition of each department. On the other hand, the validity of the composition of the small divisions with small size, such as ⟨Spanish·literature⟩, ⟨Many other European languages·literature⟩, ⟨Liberal current accounts⟩, ⟨Metal engineering⟩, ⟨Fextile engineering⟩, ⟨Fishery science⟩ and ⟨applied fine arts⟩ need to be revised.

To examine the internal validity of the basic educational statistical academic department classification, we looked at the present condition of the department classification of each school system. The basic educational statistical academic department classification was consisted of 35 medium divisions and 121 small divisions of general universities, 31 medium divisions and 76 small divisions of community colleges, 35 medium divisions and 118 small divisions of graduate universities. According to the examination, the basic educational statistical academic department classification was structured with general universities as the center, but in the case of

a community college, small divisions were excluded when the qualifications of a job required more than a four-year-course education (ex: teacher, doctor, pharmacist). And partially the small divisions narrowed the range of the departments and were classifying the academic departments into a more characterized field rather than the classification name utilized at a small division of a general university. Some examples are ⟨Korean language and literature⟩ and ⟨Creative writing⟩, ⟨administration⟩ and ⟨secretary⟩, ⟨civil engineering⟩ and ⟨construction⟩, ⟨food and nutrition⟩ and ⟨food and cooking⟩, ⟨Earth geography⟩ and ⟨land register⟩, ⟨medical engineering⟩ and ⟨medical device⟩, ⟨eubiotics⟩ and ⟨medical administration⟩. The basic educational statistical academic department classification needs to be reformed as a combined classification that includes all school systems considering the fact that other classification systems are united regardless of the qualification level or the ability to work and the comparison between school systems for manpower supply etc.

When it comes to the external validity of the basic educational statistical academic department classification, we compared and reviewed the curriculum organization unit standard classification, in order to compare the consistency with the related classification, because they are the most similar. Overall, the curriculum organization unit standard classification is consisted of 5 large divisions, 34 midium divisions and 176 small classifications. If we compare it with the basic educational statistical academic department classification, they share similar constitution of the medium division, but the small divisions are segmentalized. Also, the basic educational statistical academic department classification focuses on the academic and professional characteristics while the curriculum organization unit standard classification basically adopts autonomical classification also considering factors other than the departmental characteristics such as the school systems such as the college, faculty, department, major etc. There are many departments that are differently classified in those two classification systems. Those departments are mostly the departments that share the characteristics of more than two academical spectrums and the departments that are lately emphasized such as IT, NT, BT, CT, ST, ET that are converged with the related field. In those cases, the departments are classified differently according to the factors that are emphasized at each classification system. But, there is the problem that even

within the same system, similar departments can be categorized differently when both the classification systems do not have a clear classification standard or when they adopt the autonomical classification method. So when it comes to the reform of academic department classification, a clear standard is needed considering those departments of various characteristics and the converged departments.

☐ Reform principles of academic department classification system and academic department classification regulations.

We set up reform principles of academic department classification system and academic department classification regulations. We took into regard the results of validation examination of the formerly examined domestic and foreign academic department classification system and related classification system and basic education statistical academic department classification system for the academic department classification system reorganization plan.

The reform principles of academic department classification system that we set-up are ① The principle of 7series classification, ② The principle of unity between school systems, ③ The principle of consistency between related classification systems, ④ The principle of comprehending, ⑤ The principle of exclusiveness, ⑥ The principle of similarity, ⑦ The principle of appropriate size, ⑧ The principle of academic and professional independence of classification units, ⑨ The principle of preservation of time series, ⑩ The principe of agreement to the maximum, ⑪ The principle of revising the availability of the medium division and the small division etc.

Moreover we set-up the academic department classification regulations as follows.

1. We adapt the academic-centered classification system of Large-medium-small division, as a basic principle.
2. In the case of various academical field converged, the objective precedes the method.
   2-1. The objective of establishment of the department (achievement of certificate, yielding manpower and such) precede the method (education contents etc.).
   2-2 When the related industry of the certain department is distinct, we allocate it at the division related to that industry.

2-3 If the certification acquired at that certain department is related to a certain industry, we allocate it into a division related to that industry.

3. At the case of a practical field, we classify it considering the academic or professional field that includes the 'practical' abilities of the sort.

4. When various academic fields are composed in a parallel, we classify them with the department's major curriculum field as a center.

4-1. We classify the composition of the department's curriculum according to the percentage of the completion credits required in the major.

4-2. In the case where the importance and the proportion of experiments and practical training is high according to the curriculum of the department, we classify the practical training field by priority.

5. If none of the methods above are applicable, we classify according to the first listed major, in line with the ISCED-F.

□ Basic education statistical academic department classification reorganization plan. Our research was progressed as the following procedures in order to make a Basic education statistical academic department classification reorganization plan. First, we deduced basic problems based on the comparison and analysis of the revision results of the present situation of the academic department classification and the related classification system. According to this, we actualized the problems through holding a conference of the related classification system professionals and a conference of various department and sectoral professionals. After actualizing the problems we made a draft of the improvement scheme of each of the seven series based on the consistency of the departmental/sectoral professionals' conference and the classification and definition of the related laws. We reviewed the validity of our draft of the improvement scheme of each of the seven series through a survey of the departmental professionals (the standard was 50 from every department, and 391 professionals replied.) and the 80th KEDI Educational Policy Forum. Afterwards, we held an additional conference of departmental/sectional professionals based on the opinions suggested at the survey and the KEDI Educational Policy Forum, and we deducted a revised version of the improvement scheme. Lastly, we arranged the opinions and issues that were not

reflected and provided them as information for henceforth reform operations.

The improvement scheme of each of the seven series that were suggested through the process mentioned above, are as follows.

The art and humanity sector, departmentalized the existing [language·literature] medium division into [general language·literature], [Korean·literature], [Asian language·literature], [European·African language·literature] etc. And added 〈translation〉 and 〈African language·literature〉 into the small division.

The social sector expanded the [law] medium division into [law·administration·political diplomacy] that includes the international and administrative sector. And the 〈social safety〉 small division was added.

The [business management·finance] medium division departmentalized the formal 〈finance·accounting·tax management〉 into 〈finance·insurance administration〉 and 〈accounting·tax administration〉. And the 〈psychology〉 and 〈Library and information〉 small sectors which were included in the existing art and humanity sector, and the 〈consumer science〉 that was included in the small division of 〈family management〉 were added into the medium division of [social science].

At the educational division, we considered the several revisions regarding childcare, lifelong education, teaching method etc. but considering the results of the survey of professionals we decided to maintain the existing framework and revise only some classification names. But in the case of the educational division we restricted the boundaries from formerly child·preschool and primary·secondary school education, into the departments that conduct research about training teachers and related fields in order to separate it from the similar departments of other sectors.

In case of the engineering sector, we modified the overall classification system of the existing small division, considering the size and the independence of the 23 fields of certification of the Accreditation Board for Engineering Education. We modified the existing 11 medium divisions into 8, which are [architecture·civil engineering], [machinery·traffic], [electricity·electronics·communication], [computer], [chemical engineering], [industry], [others] . The existing 28 small divisions were revised into 23.

The natural science sector was reformed into 4 medium divisions which are [natural science], [agriculture·fishery·food science], [domestic science], [basic convergence

science]. The natural science and the engineering sector share various departments that are established by different academical basics but have similar names. So managed them to be classified into separate sectors. For example, at the case of environment related departments and the landscaping related departments, we decided to classify them as the ⟨urban environment engineering⟩ of the engineering sector, or the ⟨agriculture, fishery environment ecology⟩ of the natural science sector or the ⟨earth science (earth, atmosphere, ocean, astronomy, environment)⟩ small division according to the academic background or the directing point of the department.

At the pharmaceutical sector, we newly created a ⟨oriental pharmacy⟩ department at the [pharmacy] medium sector, and we divided the [therapeutics] and [rehabilitation] at the [therapy·health] medium sector.

Lastly, regarding the art, music, physical education sector, we revised the name of the large division as art·physical education division and we reformed the overall medium division system as [design], [art and visual arts], [music and performing arts] and [physical education and sports science]. The small divisions were reclassified according to the reform of the medium division. We separated the small divisions that were consisted of academics of different character, and we simplified the music related small divisions that were departmentalized.

□ Proposal of future tasks.

We proposed future tasks as follows according to our research conducted above in order to establish a credible and effective university academic department classification system.

First, we suggested a future task to apply the reformed version of the academic department classification system. In order to apply the reformed version of the academic department classification system, we need to improve the code system according to the reform of the academic department classification system and modify the code, we need mapping of the new and old department code, and we need to reclassify the overall departments of the institutions of higher education, revise the survey clauses regarding the department, apply the survey system according to the new classifying system, develop of a department background administration system, a

manual for the classify departments, improve the university department classification sourcebook etc.

Secondly, we suggested the installation of the 'department classification committee' (fake name) for the effective administration of the academic department classification system. Nowdays change in departments is more frequent than before, and even departments of new forms are invented, making the change of departments more fierce. Thus, we need a professional committee that will classify the new departments or the departments that change their character or sector.

Thirdly, we need to improve and revise regularly the classification system in order to increase the efficiency of the academic department classification system. The related classification systems such as the National Science and Technology Standard Classification or the employing occupational classification have about 3-5 years of improvement or update frequency. The basic educational statistics need such frequency to be regularly revised and improved. Moreover, we need manpower arrangement that will systematically manage the academic department classification system and a compilation of budget.

Lastly, as a long-term subject, we need to invent a new classification system, considering the convergence demand according to the change in society and science technology. Lately, various departments are derived due to the fusion ,complexion and combination of academics. But there is a structural limit to the current academic department classification systems to reflect all those changes. Thus, the future academic department classification system has to break from the convention of current mutually exclusive tree structure and reform into a pluralistic classification system such as the network structure or tagged architecture.

Keyword : KEDI academic department classification, Educational statistics, Revision of Classification of Fields of Education