

*A study on Reformation of Vocational Educational System and training system  
Based on National Competency Standards*

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**Abstract**

As it has been consistently proposed to improve different education, training and qualifications to job skills required in field industry, it was organized the skills that demanded in the industry. There was a need to paradigm shift in national human resource development that reflects the education training and qualifications.

In other words, it restructured education, training and qualifications of the 'theory centered' to 'site-oriented' through developing human resource that the industry requires by applying and utilize National Competency Standards(NCS) and NCS learning modules on training and qualifications in order to correlate work, training and qualification. In addition, the development of NCS learning modules in training institutions to strengthen NCS-based field-oriented training was reorganized to the way of 'what can you do?' for the purpose of human resource development.

Therefore, national human resource development to provide against convergence, high-skilled, and six pocket generation would be a future lifelong vocational education for articulation of different level of schools and it was required to mutual cooperation measures between vocational education and vocational training for this.

Keywords: National Competency Standards(NCS) , vocational training, vocational education, curriculum

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## **1. Introduction**

As the industrial structure has been advanced, the company's expected competency required for a successful transition to the labor market from school was increased. For this, it is required to develop National Competency Standards(NCS) which reflect industry demand, and it is necessary to present NCS, required skills in real industry and occupation duties as a national level standardization.

National Competency Standards are basically skills, knowledges, and attitudes to perform one's duties in industrial setting, and NCS was organized into national sector-specific level.

A classification of the NCS was composed with 24 main large categories, 76 divisions, 213 small categories, 883 sub divisions at the result of job classification which is considering the aspects of own labour market employment, wage determination and work shifts.

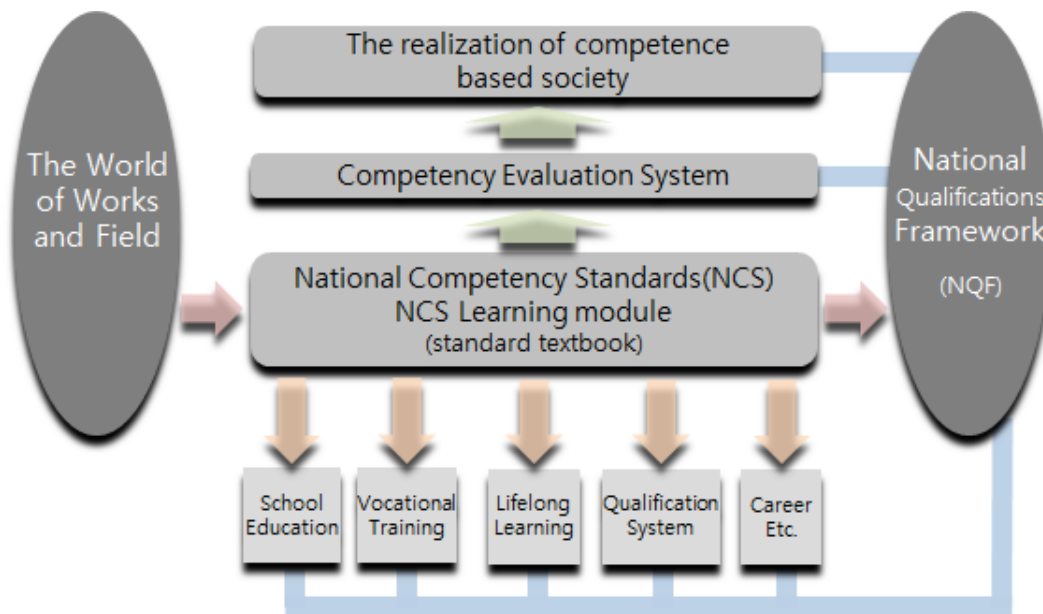
The NCS learning module was developed so that it could be applied to the teaching and training institutions. The NCS Learning Module was developed to establish a company-centered education system, mitigate qualitative mismatch between industrial sites and education, and strengthen competitiveness of vocational education and training.

The curriculum of Specialized High School has been revised and applied from the 2016 school year in order to utilize NCS,. Since 2016 colleges and universities have introduced NCS-based curriculum in connection with the specialized characterization and upbringing business projects as well.

The national technical qualifications of 597 items are reorganized as NCS-based qualifications and the evaluation of the NCS qualification process is introduced to promote the spread of NCS-based vocational education and training.

In order to spread the NCS, the employer was hired on the job ability based on NCS so the selection criteria and the recruitment procedure that did not require excessive specification such as language and overseas training were notified before employment.

The purpose of this study is to suggest a systematic reorganization of the vocational education and training curriculum to apply NCS and related qualifications system.



Source: Ministry of Employment and Labor · Ministry of Education (2016). The 5th National Competency Standards Steering Committee

Figure 1: NCS Framework

## 2. Main Subject(Body)

### 2.1 Research Methods and Contents

The vocational education system based on the National Competence Standards (NCS) was reorganized into ‘job skills-focused education’ to strengthen the field of vocational education, and the precedent study on reformation of vocational educational and training system based on national competency standards was based on the analysis of relevant data of related researches, policy data of the Ministry of Employment and Labor and the Ministry of Education, and related data of specialized high schools, colleges and universities so final conclusions were derived based on them.

The NCS-based vocational education and training course is a documented data that guides the planning of learning experiences to enhance the job skills such as knowledge, skills, and literacy required by the industry based on national competency standards (NCS).

The vocational education and training course according to the national competence standards (NCS) is emphasized as a rational approach to reflect the industrial demand as education content. By utilizing NCS that systematizes and standardizes industry requirements to the training and qualification standards, it can contribute to the efficacy of education investment through linkage among corporation site –education and training - qualifications (Choi Dongseon et al., 2012). The development of the NCS-based vocational education and training course is carried out by the field practitioners in each field participating and thoroughly analyzing the job demands and requirements of the industrial field in detail and reflecting them in the curriculum. To consider these development factors and NCS competency unit, it designed a plan that evaluates the competence focused rather than knowledge-based in actual education field (Na Seungil et al., 2007; Chang Myeong Hee et al., 2009).

In other words, the development of the NCS-based vocational education and training course should establish the vocational education and training system based on the development and operation of the vocational education and training course and qualification structure.

It is very important to select the competency unit according to the goal of human resource development in each department in order to focus on developing the education and training process to meet the industrial demand by utilizing the national competence standards.

NCS-based training courses should be developed and presented to you in the course central to the ability to leverage the NCS learning outcomes regulations Cedefop report (2012) 'All results-oriented approach to curriculum.

Therefore, NCS-based vocational education and training courses should be developed in a logical and systematic way to derive valid job skills from national competence standards and turn them into learning outcomes.

In addition, defining learning outcomes on the basis of NCS, in other words, certifies that a successful completion of an NCS-based education and training course entitles them to perform their duties in a specific field, which is the basis of the course evaluation qualification framework.

In order to reform the NCS-based qualifications system, it is necessary to define the qualification criteria for performing the tasks in a specific field based on the NCS.



Figure 2: Vocational Education Training Curriculum Development Phase

The results of the evaluation of the job performance of the department are used in the NCS-based education quality management of the department, and it can be a basis for improvement efforts on the continuous quality of the NCS-based curriculum. It can be used to improve the education policy by calculating the degree of job skill improvement based on the results of job performance evaluation,.

The improvement evaluation of job performance is to assess the achievement of vocational education and training by comparing the results yearly obtained through the assessment of job performance achievement as an index of whether the goal of the vocational education goal pursued is achieved effectively.

All courses in an NCS-based curriculum should be evaluated in the same way and with or without NCS.

Item	Basic Learning Ability Assessment	Basic Skill Assessment	Assessment of Major Competence
Evaluation Area	Basic learning ability	Basic job skills	Major practical skills
Assessment Contents	<ul style="list-style-type: none"> <li>- Korean, English, Mathematics, Science, etc.</li> <li>- Details of the evaluation are selected by the university's decision</li> </ul>	<ul style="list-style-type: none"> <li>- In the 10 areas of basic occupational skills, areas (subjects) derived through curriculum development,</li> <li>- Performance criteria and knowledge / skills / attitudes / tools by sub-competency</li> </ul>	<ul style="list-style-type: none"> <li>- Areas derived from NCS-based curriculum development (course)</li> <li>- Performance criteria and knowledge / skills / attitudes / tools</li> </ul>
Assessment Methods	Self-assessment	Diagnosis evaluation, Attendance evaluation, Assessment of job competence	Diagnosis evaluation, Attendance evaluation, Assessment of job competence

Source: Ministry of Education, National Research Foundation of Korea, NCS based Vocational Education Training Curriculum Guideline

Figure3: NCS Based Vocational Education Training Curriculum Development Evaluation

For the quality management of NCS-based vocational education and training courses, the design of requirements analysis and training courses should be done in accordance with the system approach. In other words, the NCS-based vocational education and training program's planning, design, development, operation, and performance creation stages, as well as the evaluation of overall characteristics such as achievement of goals, effects and impacts, formal assessments, such as degree of achievement of goals, control and management of the process, and identification and improvement of steps should be emphasized.

To do this, we need to analyze the environment and analyze the requirements for the development of the NCS-based vocational education and training program. -> Establish the type of training for the department and establish the training target -> Job definition and NCS classification system technology -> Set up the job model by NCS system -> Job model Verification -> course elicitation -> preparation of course description -> NCS and curriculum linkage skills -> development of course roadmap for each job.

For the quality management of the NCS-based vocational education and training course development, it should be composed of the design and planning → operation

→ evaluation system of vocational education and training course as factors according to the quality management system.

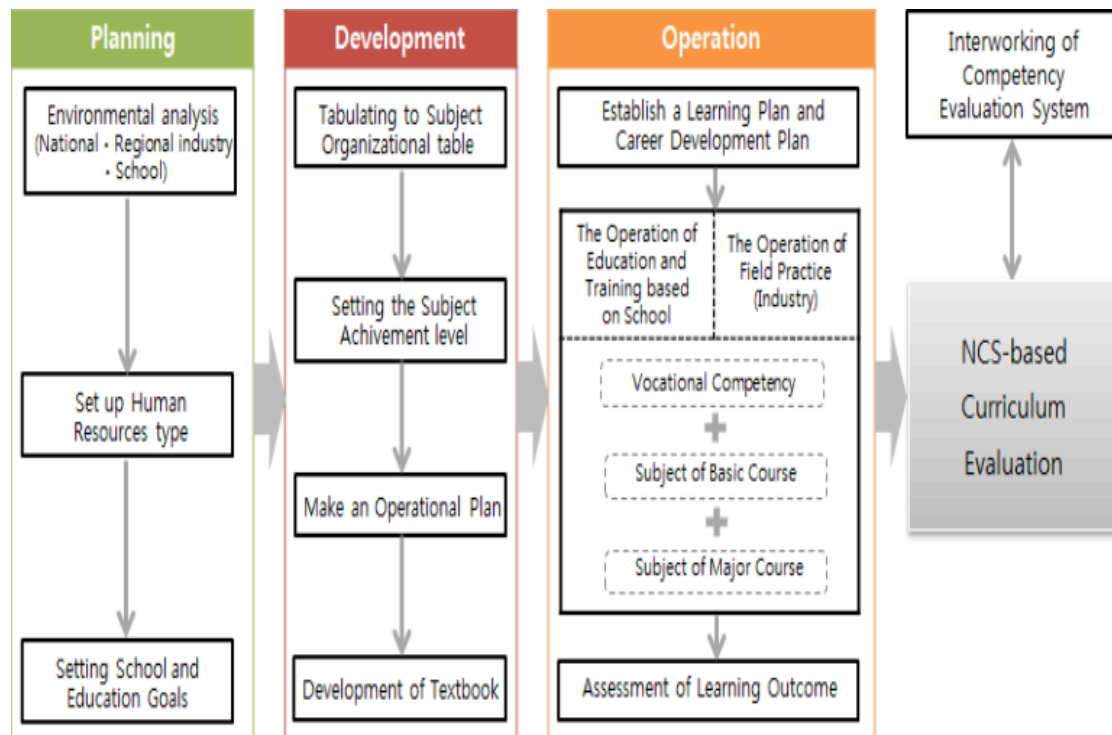


Figure4: Vocational Education and Training Curriculum Development Procedures and Methods

### **3. Conclusion**

NCS-based vocational education and training courses should be regarded as a component of the operation of the national qualification framework. NCS-based vocational education and training courses within the framework of the national qualification framework should be able through the development of NCS-based vocational education and training courses through system approach.

In order for qualitative NCS-based vocational education and training courses to be developed, the followings should be considered.

First, It should prevent duplication or omission of contents between unit curriculums in developing vocational education and training course,.

Second, It must be acquired necessary learning materials, training facilities, equipment and equipment and organized the teaching and learning strategies and activities needed to achieve vocational education and training goals or learning objectives.

Third, The industry and qualification field experts as well as education and training experts should be involved and cooperated in designing NCS-based vocational education and training course in order to activate the linkage of work-training-qualification as the basic purpose of NCS.

In addition to this, It is necessary to evaluate and emphasized the degree of achievement of each stage of NCS-based education and training course planning, design, development, operation and performance creation, control and management of development process at the same time to manage the quality of NCS-based education and training courses. And the following quality management system should be established.

First, It should focus on the common features of various NCS-based education and training courses, and establish a quality management system based on NCS-based education and training.

Second, It should assume a specific aspect of a typical NCS-based education and training course and builds a quality management system suited to it.

Finally we should build a specific and micro-tailored quality management system suitable for each program, reflecting the specific context of specific NCS-based training courses.

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