

KRIVET

2007 Research Abstracts

Foreword

In the rapidly changing age where knowledge is the foundation of growth, human resources development has emerged as one of the top priorities for sustainable economic growth. To foster workforce with competencies which the economy requires, critical need for new curriculum and program was brought up.

As a result to this demand, Korea Research Institute for Vocational Education and Training (KRIVET) was established in 1997. Since, KRIVET has been performing researches and programs for successful human resources development at the national level to meet the needs of the technological advancement.

The present compilation of 30 research abstracts consist of research abstracts conducted in 2007 by KRIVET research staffs. It attempts to list the specific contributions made by KRIVET researchers and provide professionals, policy makers and educators throughout the international community with understanding of vocational education and training in Korea and research and development activities performed by KRIVET. The researches covers more diverse areas of TVET and HRD, including industry-academia cooperation, mobility of human resources, and qualification systems.

It is hoped that this "Research Abstracts 2007" will work as a informative and valuable guide to the students, experts, policymakers and anyone who may be concerned with human resource development and lifelong vocational education and training.

권대봉

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1. Reform Plans of Government Funding Policies of Industry-Academia Cooperation

- Focused on the HRD programs of Colleges -

Ji-Sun Chung · Il-Kyu Gang · Young-Ryul Choi · Kil-Soon Lee · Sang-Chul Park

1. Research Outline

This study is conducted for the purpose of indicating the reforming plans of the government funding policies of industry-academia cooperation focused on the human resources development(HRD) programs of universities and colleges. Some methodologies are employed to draw the problems and reform measures of the HRD industry-academia cooperation policies and projects; review and analysis of related literatures and laws, analysis of foreign successful cases, focus group interviews, specialist conferences, and a debate.

2. Concept and Framework of HRD Centered Industry–Academia Cooperation Policies

Industry-Academia Cooperation is defined as activities of HRD, R&D, and transfer of technologies & commercialization, and this research is mainly focused on the HRD policies and projects carried out by colleges and universities. The HRD projects comprise 4 main categories and each focuses on employment & customization, workplace capabilities, regional innovation & specialization, and trust education.

The nine principles of industry-academia cooperation are emphasized to activate the projects: principle of cooperation, principle of reciprocity, principle of autonomy, principle of long term plan, principle of systematization, principle of responsibilities, principle of comprehension, principle of region-base, and principle of incentive. The three HRD models of college education are region-innovative HRD, nation-innovative HRD, and global-innovative HRD.

The core of the New Industry-Academia Cooperation Policy of the current government is to pursue the industry-centered HRD plans. The establishment of Industry-Academy Cooperation Foundation at every college and university has been main point to increase the performance.

3. Foreign Cases of HRD Industry–Academia Cooperation Policies

The Swedish policies and Taiwanese policies are introduced and analyzed as successful cases of HRD industry-academia cooperation at the college level. In both countries the policies has been established and developed in the aspect of long-term performance with grand plan on the basis of the principles of the industry-academia cooperation. Also the colleges are established for the purpose of satisfying the demand of industries. Also the colleges possess the autonomy for the HRD and cooperation activities with industries.

4. Current Situation and Problems of Funding Policies

From the perspective of the keynote of the New Industry-Academia Cooperation Policy, the following problems are pointed out of the HRD funding projects for colleges. First, for the lack of the long-term comprehensive grand plans for industry-academia cooperation and HRD of colleges, the effective performance has not been obtained. Second, the colleges do not enjoy enough autonomy to pursue the HRD projects with industries. Third, the small and medium industries cannot participate in activities partly due to the lack of the understanding the importance of the cooperation and partly due to the poor situation. Moreover the networking system is not organized enough to depend on for the human resources development of the company.

Fourth, often in the process of industry-academia cooperation, participation of the local government is required but most of the entities do not retain the capabilities. Fifth, the infrastructure of the cooperation is not built, the industries do not have enough information on the college programs and projects, while the colleges perform the projects scarcely to the demand of the industries. Sixth, the college projects face to difficulties especially when professors tend to be academic oriented rather than industry oriented. Seventh, the structure and status of industry-academia cooperation foundation varies from college to college, which function has not been firmly fixed. The foundations cannot raise the fund and expanses to manage itself for manpower and expertise.

5. Reform Plans of HRD Industry–Academia Cooperation Policies

The reform plans to solve the problems are suggested into six categories. First, the gran plan should be made in the long-term basis besides the pursuit of specialization of colleges. For the best result the funding scale should be enlarged by the government. Specifically, the projects should be made industry-oriented. Second, the infrastructure of the industry-academia cooperation should be set up for provision of various kinds of information for the industry-academia cooperation. Besides, the professional organization should be established separately charged with evaluation, distribution of government funding and so on.

Third, the handing over time of budget from government to the colleges should be gone ahead with as the early fiscal year. The standard guide of the funding

projects is to provide to the colleges the effective results. Fourth, consulting effects better results rather than evaluation for colleges. Fifth, the establishment and management of industry-academia cooperation foundations should be examined thoroughly for the betterment and solution of the accumulated hindrances in terms of workforce and financial problems. Sixth, to induce the industries to the cooperation activities the incentive system should be accomplished such as, financial rewards to the industry personnel, diffusion of successful models cases, selecting the leading industry as a good example.

2. A Study on Plans for Strengthening the Utilization of National Authorized Private Qualification

Sang-Jin Kim · Jong-Sung Park · Hyang-Jin Jung

1. Overview of Study

The purpose of introducing the national authorization system of private qualification by an enactment of Framework Act on Qualifications was to improve the general level of private qualification by improving an excellent private qualification and to support a personal ability development and recognition through mutually supplementing the national qualification.

Since the national authorization system of private qualification was enacted in 2000, 67 subjects of private qualification by 39 institutions have been authorized and utilized as of August 2007. Also, the total of 2,981,868 persons acquired the authorized private qualification as of August 2007. The number of people who acquire the authorized private qualification tends to increase with the increase of authorized subjects each year. However, it has been investigated that the utilizing degree of the national authorized private qualification doesn't considerably meet the original purpose even though such national authorized private qualification is quantitatively extended. As a reason why the degree of national authorized private qualification is low, there is a problem of private qualification and a lack of government's activation efforts.

In such background, this study is intended to arrange diversified plans for strengthening the utilization of national authorized private qualification to attain the purpose of the national authorization system of private qualification introduced for an activation of private qualification system.

2. Contents of Study

To achieve the purpose of the study, the major contents of the study are followed. Firstly, various theories and domestic similar study results related to the qualification's function were considered to clarify the range and area of utilization for strengthening the utilization of national authorized private qualification. The utilization of the qualification is meaningful when the qualification is not abuse and the function of qualification is sufficiently performed. In such point, the major functions of the qualification were derived through the qualification function- related theory, and the range and area of utilization was specified by each function.

Secondly, the authorization and utilization status of national authorized private qualification was analyzed. In the authorization status of national authorized private

qualification, characteristics of subjects of national authorized private qualification was examined to focus on the application status of authorization and authorization status by year. Also, in the utilization status of national authorized private qualification, the internal utilization status and external utilization status was analyzed according to above-specified utilization range of qualification. In addition, various systems and utilization conditions which supported the utilization of national authorized private qualification were examined by classifying into the internal utilization support status and external utilization support status.

Thirdly, plans for strengthening the utilization of national authorized private qualification were suggested based on the analysis results on the operation and utilization status of nationally authorized private qualification and the related studies. The plans for strengthening the utilization were presented by classifying into the plan for strengthening the internal utilization and the plan for strengthening the external utilization according to the above-classified utilization are of qualification.

Fourth, proposals for improving the utilization of the national authorized private qualification, were presented by classifying into the government and the national authorized private qualification administrator.

3. Operation and Utilization Status of National Authorization System of Private Qualification

Firstly, as the result of examining the operation status of national authorized private qualification, the private qualifications are largely focused on a culture, language and literature-centric social works, unlike the national qualification. It shows that the utilization of national authorized private qualification has been differentiated from the national qualification which is presently being operated.

Secondly, as the result of internal utilization of the national authorized private qualification, it was investigated that the acquisition of the national authorized private qualification was somewhat helpful for improving the personal working ability. But, it was analyzed that the acquisition of the private qualification was not largely connected to the improvement of competitiveness in a labor market.

Thirdly, as the result of examining the external utilization status of the national authorized private qualification by classifying the economic utilization and the supplementary utilization, there was very low utilization of the private qualification for an employment, wage, promotion and solution of employment instability in relation to the economic utilization. On the other hand, there was relatively high utilization of private qualification for recognizing the academic units or going to school of higher grade in relation to the supplementary utilization. But, in the supplementary utilization, there was almost no case of conversion into the national qualification.

Fourth, as the result of examining whether the system and condition for supporting the internal utilization of the national authorized private qualification was arranged, there were no means of related information acquirement and sufficient contents of information related to the national authorization system of private qualification. But, there was relatively normal satisfaction with the verification place

or qualification acquisition cost.

Fifthly, as the result of examining whether the system and condition for supporting the external utilization of the national authorized private qualification was arranged, the qualification was not elastically operated by the demand of field. Also, there was low reliability of companies on the national authorized private qualification administrator.

4. Plan for Strengthening a National Authorized Private Qualification Utilization

Firstly, the access strengthening plan and improvement strengthening plan was arranged as the plan for strengthening the internal utilization of the national authorized private qualification. As the access strengthening plan, the limitation of eligibility, variety of qualification verification method, activation of partial qualification system, and the minimization of qualification cost were presented. Also, as the improvement strengthening plan, the job level-centric grading system establishment and job-centric gradual qualification subject development were presented.

Secondly, as the plan for strengthening the external utilization of the national authorized private qualification, there were the flexibility strengthening plan, transparency strengthening plan, public trust strengthening plan and the conversion strengthening plan. For the flexibility strengthening plan, the qualification demand monitoring system implementation, the expansion of user's direct participation on qualification management, and establishment & renewal of qualification's effective period were presented. As the transparency strengthening plan, the implementation of integrated qualification information system and qualification recommendation system utilization were presented. As the public trust strengthening plan, the strengthening of qualification management rule, independence of verification, implementation of internal monitoring system and post management strengthening for the national authorization system of private qualification were presented. Finally, as the conversion strengthening plan, the development of inter-qualification conversion comparison standard and the development of qualification level were presented.

5. Proposal

For strengthening the utilization of the national authorized private qualification, the following policies are suggested for the government and national authorized private qualification administrator.

Firstly, the national information supply system must be implemented to improve transparency of national authorization system of private qualification.

Secondly, the conversion standard of the national authorized private qualification must be proposed through implementing the Qualification Framework and the personal ability development route design must be supported.

Thirdly, the privileged treatment by authorization of the private qualification must

be presented together. Also, legally-authorized preferential treatment or conversion must be implemented.

Fourth, a periodic performance analysis on the national authorization system of private qualification must be conducted.

Fifthly, when the national qualification is newly created, it must avoid an overlapping with the private qualification's activated field, and the prohibited part of private qualification by individual law must be minimized.

Sixthly, there must be the monitoring system on the qualification demand change and utilization status and the monitoring result must be periodically reflected on the improvement of qualification system.

Seventhly, the government and the authorized private qualification administrator must strive to generate and distribute the national authorized private qualification-related information.

Lastly, they must strive to enable the representative organization or association by industry/business to participate in the qualification management and operation.

3. Performance-aligned HR Indicators and Index Development

Song Changyong · Son Youmi · Lee Sung · Park Juwan

1. Introduction

The reason the investment of company on education and training and its HR activity are poor is their weakness of motivation, and this passive investment makes structural problems which deteriorate a competitive power of company. Recognizing the problem above, the purpose of this study was to set up a basic data and provide a system which promotes HR activities of company including education and training.

Thus, there were two objectives to this study. One objective was to complete an indexation and quantify the HR competency and HR activity. Another objective was to find out the factors, which significantly determine the performance of HR activity, through the process of correlation analysis between HR index and performance variables.

In order to develop HR index, this study had gone through the review of related literatures and the precedent HR indexes, setting up the structural frame of HR index, selecting HR index and performance index, and questionnaire survey, its analysis and indexation. Every proceeding above had been done with expert group meeting composed of HRD specialized professors and the persons in charge of HRD department in companies. Related to performance index, this study had got regular advises and suggestions from certified public accountants.

Compared to the precedent studies about HR index, this study has its own differences as follows:

First, this study took performance-aligned index into consideration at the stage of selecting HR index. So, it focused on quantifying the performance index and collected company performance data from Korea Information Service.

Second, the questionnaire for HR index is composed of the items which lead a clear answer of the fact, not an unreliable answer depending on one's perception(example: small-group activity).

Third, this study had proceeded many samples for statistical analysis(1928 companies in total). Especially, 1357 companies in total were small and medium companies which have less than 100 employees, so this helps to make a diagnosis about the present status of HR activities in small and medium companies.

Fourth, this study sophisticated a methodology on quantifying HR index, using a much more statistical way such as structural equation modeling.

2. The results of this study

1) Composition of Performance-aligned HR Index and Indicator

Performance-aligned HR index is composed of HR activities as independent variables, types and sizes of enterprise as control variables, and performance of enterprise as dependent variables, which are selected as a result of regression analysis. This index is largely divided into two parts which are human resource management and human resource development. In the of human resource management, personnel policy support system(employment, retirement management, job management), compensation system(evaluation, wage, benefits package), and participation are included. Also, support system(infra, investment, alignment), program(small-group activity, cooperation, diversity), participation, and so on are included. the weight for both parts, resulting from structural equation modeling, is as follow.

$$\text{HRI}=0.53\text{HRMI}+0.47\text{HRDI}$$

2) Correlation between HR indicator and company performance

First, HR index of one's enterprise tended to increase, as well as the value-added per employee, the sales per capita, and ordinary income per employee, which is represented by a significantly positive correlation.

Second, HR index tended to increase by 1%, and the sales per employee also tended to increase by 0.23% which is converted into 654,000WON. That is, HR index is increasing by 1 point out of 100, which can be converted into 1721,000 WON.

Third, HR index tended to increase by 1%, value-added per employee also tended to increase by 0.056%. That is, HR index is increasing by 1 point out of 100, which can be converted into 87,000WON.

Forth, HR index tended to increase by 1%, and ordinary income per employee also tended to increase by 0.21%. That is, HR index is increasing by 1 point out of 100, which can be converted into 67,000WON.

3) Correlation between HR indicator and company environment

First, enterprises taking differentiation strategy had a higher level of HR activities.

Second, enterprise weighting on development such as new product development and new process development had a higher level of HR activities.

Third, enterprise considering leadership, skill, and human power as the core competency had a higher level of HR activities.

Forth, enterprise making an innovation through research and development had a higher level of HR activities. The enterprise taking outsourcing as a core innovational competency had the lowest level of HR activities.

Fifth, enterprise with the more average number of years of education had a higher level of HR activities.

4) HR strategies and HR indicator

First, there was a difference of HR activities between the enterprise having a flexible employment strategy and the enterprise having a stable employment strategy. It had a significant difference on the level of HRD, while it had no effect on the level of HRM. This result supports the decent research insisting that the enterprise pursuing a long-term employment has a tendency to invest more money on education and training.

Second, enterprises differentiating its compensation by performance had a higher level of HR activities.

5) The factors determining HR indicator

As a result of analyzing determination factors which have had influence on the level of HR activities, the most important factors were innovational competency, level of academic background, and compensational system. particularly, employment stability pursuing long-term employment has had influence on the level of HRD in company.

3. The suggestions for policy

First, with performance-aligned HR index and indicator, companies can be sure of the effects of HR activities to the performance and be motivated for making the investment on education and training. HR index also can be used for a diagnosis of the company, making it possible to plan a specific human resource development policy based on its proof.

Second, HR indicator can be aligned with enterprise credit scoring model, and it will promote a mutual survival between large enterprises and small and medium enterprises.

Third, this study can bring a specific policy planing for small and medium enterprise to promote its human resource development. In this study, a considerable number of small and medium enterprises which have less than 100 employees had been included as samples of the statistical analysis, and this is the initial try that any other decedent studies never done before.

4. Career Stages For HRD Policy in Science and Engineering Field

Ji-Yeon Lee · Ho-Young Oh · Hyung-Han Yoon

With the rapid development of ICT and the increasing importance of HRD policy especially in the area of Science and Engineering, OECD countries have been trying to investigate the "right" policy for development and utilization of the core-human resources in this area for the strong national competitiveness. Korea is not the exception. Most research in this area in Korea is focus on revealing the quantitative approach to show the numbers such as Ph.D. holders and the rate of the employment/unemployment. This quantity-oriented research has the limitation in researching the reason for core-human resources in Science and Engineering field to decided to stay United States, where they received the Ph.D, and have the hesitation to come back and develop careers in their home country.

Thus, the concrete and dynamic process of career development for whole life of core-human resources was needed to investigate for the "right" policy development with the qualitative research methodology instead of the quantitative way. The purpose of this research is to investigate and explain what is the push and pull factors to develop their careers for the core-human resources in Science and Engineering filed in Korea. A person who received the Ph.D in the United States and have a job position in University, Company and Research institute more than 10 years are referred to as a core-human resources in this research. For the purpose, career development stages were divided into four stages such as career formation, career growing, career maturation and career retirement stage. Total of 18 numbers of core-human resources agreed to participate this research and actively performed the deep face to face interview for their life and careers history. Life satisfaction, push and pull factors depending on 4 stages of each participates were interviewed and analyzed. In addition, "career picture" were drawn by 18 participations to understand their career and life history.

In conclusion, this research investigated and explained the reasons of push and pull factors, that they experience the hesitation of developing careers in Korea according to their career stages. Moreover HRD policy alternatives especially for the core-human resources in the Science and Engineering Field were suggested according to the 4 stages in the perspectives of 18 participations. Therefore, this research tried to broaden the perspective to understand the pull and push factors working in Korea after receiving Ph.D from the United States and the results are expected to utilize in developing national policy for the issue of "brain drain" matter in Korea.

5. Diffusion of Converging Technology and Human Resources Development

Gyu-hee Hwang · Tong Park · Sun-yee Hong

Following the rapid technological changes of information and communication technology (ICT) in late 20th century is the emergence of converging technology from nano-technology (NT), ICT and bio-technology (BT). It brings great transformation of the whole society. For instance, different industries are now converging and new disciplines are derived from the old disciplines. Therefore, it is an urgent matter to research the human resources development which confronts the converging trend.

The study aims to respond to the needs of the new era. It dares to enlarge the understandings of the changes in the knowledge, and of what is needed in the learning process along with the converging trends. It requires a theoretical inquiry about the knowledge as well as the empirical investigation on learning process.

The study starts from the following two hypotheses:

Hypothesis I: Traditional knowledge was created through transferring and combination of disciplines, but the creation of knowledge in the era of convergence is based on communication and co-absorption.

Hypothesis II: Communication and co-absorption of knowledge are the essential core capability to create knowledge in diffusion of converging technologies, and also to acquire knowledge.

The hypothesis I is theoretically examined through literature reviews and the hypothesis II is empirically tested through a survey. However, the study only reaches to a preliminary result preparing for the advanced study and cannot be considered as a concrete conclusion or a rigorous study. Next step of the study is to bring up a more reliable and robust confirmation based on further empirical evidences including job-analysis with future perspectives.

The result of the current study is that in human resource development in the era of convergence, prompt response to technological needs (ie. customized education and training) would be inferior to the expansion of field-based learning opportunity based on strengthening fundamental learning capability.

6. Research on Occupations in Senior Industry: Exploration in Industrial Sectors of Long-term Care, Supportive Aids or Devices, Leisure for Elderly, and Recreation

Dong-Son Choi · Sang-Geun Han · Yun-Kyoung Jeong · Na-Ra Kim

1. Introduction and Research Methods

Various solutions are being looked for in order to solve the problems of low fertility and aging society. Senior industry, or industry for the elderly, is regarded as one of innovative solutions in which could transform the huge demands of inflating senior populations into the national growth momentum. Regardless of this anticipation of growth possibility, the detailed occupational informations in senior industry has not been introduced. In addition, there has not been sufficient discussion on what is core manpower in senior industry, what kinds of systems should be operated for developing these core human resources, and so on. Based on this understanding, the objectives of this research were set up as generating detailed occupational informations in major senior industry, and considering several countermeasures for developing human resources in senior industry and for improving related qualification systems.

In order to achieve these objectives, this research made use of several methodologies. First, this research executed mailed survey for identifying the current status of human resource development and occupational outlooks in 451 senior business. Second, scores of SME's were interviewed with contents of occupational status and change, demand of human resource development, occupational outlooks, and so on. Thirdly, job analysis was executed on the major occupations such as care manager, leader of sports for the elderly, and recreation therapist. Fourth, making use of the inventories of knowledge and skill drawn from the job analysis, this research executed mailed survey for identifying education/training needs.

2. Scope of Research

Senior industry is defined as 'researching, developing, manufacturing, constructing, distributing, and marketing goods or services for satisfying demands from biological aging or decline of socio-economical ability. For this definition, senior industry consist of various sectors, and especially, senior industry has the characteristics that it is constituted from combining the existing industrial areas with production or service delivery for the elderly. This means that current classification systems of industry could be reorganized to be suitable for the elderly. Also, this inner-diversity of senior industry means that relevant sectors should be set up for

effective research. Based on the criteria of ① the degree of necessity for developing human resources, ② the degree of priority for growth of senior industry, and ③ the degree of consistency between industrial sectors and subject occupations, long-term care, supportive aids or devices for the elderly, leisure, and funeral were selected as research areas.

Using the definition of senior industry, 'occupations in senior industry' could be defined as 'occupations that provide goods or services for satisfying needs from biological aging or decline of socio-economical ability'. Occupations in senior industry also has characteristics that it cannot be classified with current occupational classification systems. For example, it's hard to consider that all of occupations which provide goods or service to the elderly could be classified into occupations in senior industry. For these reasons, this research selected care manager, home helper, geriatric nurse practitioner, leader of sports for the elderly, recreation therapist, and funeral manager as the subjects of the study.

3. Manpower Demand/Supply and Education/Training

The result showed that the importance of core manpower would not be changed in near future. For example, social welfare service specialists, long-term care service workers, nurses and nursing assistants are most important human resources in long-term care institutes. However, although relative importance is not as high as core occupations such as social welfare service specialists, health-related occupations such as medical specialists, physical therapists, and nutritionists are going to become more important in the near future. This means that human resources for well-being and healthy life maintenance should be increased sooner or later. In the sector of supportive aids or devices for the elderly, it was shown that relatively important core occupations are research-development specialists that develop various products fulfilling users' needs and sales occupations that secure marketing routes for produced goods. Senior welfare center representing the sector of leisure replied that social welfare service specialists are most important because they develop and manage the various leisure programs for the elderly. However, partly because of the diversity of the elderly's needs, the centers replied that home helpers for the solitary elderly, nurses and nursing assistants, nutritionists would be more important in near future. In the sector of funeral, funeral service specialists are most important human resources.

The results of this research manifested that occupations constituting senior industry are requiring more educational and vocational experiences, which means that various experiences and careers would be needed for giving proper services fulfilling the elderly's needs. Also, our society should prepare the systematic strategies for developing manpower in senior industry with mid-term and long-term perspectives. Especially, senior industry is not sectors that job seekers want to enter. And, most business in senior industry are small or mid-sized. For this reasons, the strategies for developing and securing human resources in senior industry should include human resource systems based on the needs of business, job modification based on job analysis, improvement of workplace surroundings, and so on.

The growth of elder population, the diversification of the elder's needs, the growth

of needs for professional services, and the strengthening of policy and institutional-related conditions imply that the investment on education and training should be increased for the incumbents' acquisition of various knowledge and skills.

4. Education and Training Needs in Major Occupations in Senior Industry

Basic competencies required in major occupations of senior industry were showed to be different according to occupations. Generally, all occupations required more practical skills than theoretical knowledge. However, besides home helpers, the level of theoretical knowledge required in most occupations was not low, which means that importance is the capability of exhibiting practical skills with the solid theoretical base. In relation to operational skills, all occupations except for home helpers were showed to require high level of instrumental skills, especially document skills and computer using competencies. Although it is one of basic competencies required in most occupations regardless of the types of job, the high level of foreign language skills did not have significance in occupations of senior industry. All occupations except for home helpers were showed to require high level of operational skills. Especially, it is needed to pay attention to the high requirement of communication skills and problem solving skills. This means that human resources in senior industry should identify the elderlies' needs with actively using communication skills. Also, it means that they should respond quickly and properly to sudden behavior and/or accidents of the elderly.

Although high level of basic competencies were needed, the incumbent in senior industry responded that they did not have enough opportunities to develop their basic competencies. This means that education and training in senior industry failed to meet the needs of business.

5. Policy Suggestions

First, senior industry have the characteristics that current industry sectors produce goods or services for the elderly using their own attributes. For this reason, manpower entering senior industry would have diversified career paths. For example, high portions of manpower in senior industry would come from current industry sectors, not from universities or colleges. Therefore, it should be required to develop diverse education and training paths appropriate to their careers.

Second, "Mid- and Long-term Plan for Human Resource Development in Senior Industry" should be prepared for comprehensive and systematic management of human resource.

Third, it is possible that current health-related occupations would differentiate into specialist occupations for the elderly. This means that several countermeasures should be prepared to develop geriatric specialists in the sector of health-care and leisure.

Fourth, in order to respond to various needs of the elderly, the occupation of care manager should be created and national-qualified. In addition, various measures should be prepared including systematic curriculum for developing care managers,

valid qualification system, materials and manuals for real clinical training, various education and training courses differentiated to level of duties.

Fifth, the growth of senior industry is on the premise that many of the elderly have the purchasing power. This means that the countermeasures should include the expansion of opportunities for the elderly to live economically. For this reason, several alternatives should be reviewed to create new senior-friendly jobs or occupations in senior industry.

Sixth, the Senior Industry Sector Council, which consists of various subjects such as business, academies, associations, and so on, should be established to function as the main route of needs-delivering from business.

Seventh, current education/training programs should be improved to meet the needs of business.

7. Development of KRIVET Occupation Prospect Index

Ho-Young Oh · Sang-Geun Han · Hea-Jung Chang · Ju-Hong Min · Hyoung-Han Yoon

1. Introduction

In recent years, the Korean economy has experienced rapid transition into knowledge-based economy, more severe competition from open-door policy than before, and intense technological innovation. These changes are in the socio-economic structure and, as a result, the uncertainty and instability surrounding the world of occupations are higher than ever before.

For households, businesses, and governments to respond actively and effectively against the rapidly progressing world of occupations, it is important and urgent to find the exact nature of change and to forecast the future direction. The information provided through the "Occupation Prospect Index" will help form the foundation for optimal responses to the challenges posed by the world of occupations, especially assisting and promoting individuals to make self-initiated career plans and contributing to the enhancement of efficiency of government's HRD policy.

This study succeeds the 2006 project on "Basic Research on the Development of KRIVET Occupation Prospect Index". The main objective of the 2006 study was to complete the design of the Occupation Prospect Index by understanding the related statistics and surveys, and organizing the network of experts. Based on the last year's survey design, we have carried out a survey on 867 job experts. The purpose of this study is to afford a credible Occupation Prospect Index and make it public so as to broaden the understanding of individuals about the world of occupations and thereby support rational career planning. Also, it aims to strengthen the linkage between school and work, and support the government's HRD policy.

KRIVET Occupation Prospect Index consists of seven evaluation areas and 23 detailed items as follows: ① compensation - earnings and benefits ② employment conditions - job creation, job growth, and job competition ③ employment stability - full-time employment and job retention ④ career growth prospects - self-development, promotion, and possibility of job change ⑤ working conditions - working hours, physical environment, stress ⑥ professionalism - expert knowledge, autonomy, authority, social reputation, community service, and spirit of calling ⑦ employment equality - gender equality, elder-friendliness.

In total, 867 job experts responded to these items for maximum of 10 jobs among 152 jobs which were mainly from manufacturing and construction industries. They have evaluated 23 detailed items for each job of their choice for present and 10 years later from now. The survey on job prospects for 10 years later was tried for as an early warning of changes in the occupation world. Of the 392 occupations

classified in the Korean Employment Classification of Occupations (KECO), 152 jobs were surveyed this year and the remaining occupations will be covered 2008 and 2009.

First of all, we have constructed a database of 9,774 occupation experts using various ways and developed an on-line survey system. Survey period was from 20 August to 5 October, 2007 and, finally, we received 4,790 responses from 867 occupation experts for 152 occupations surveyed this year.

2. Main Findings

The Occupation Prospect Index was compiled for the 152 jobs based on 867 occupation experts' responses on 23 detailed survey items. The main results will be presented in three distinguishing time horizons, namely, present, 10 years time, and the difference between the two points in time.

First, according to the Occupation Prospect Index for the present, IT related occupations showed the highest prospects, followed by chemical related occupations, electric · electronic related occupations, mechanic related occupations. Among the top-20 occupations in the comprehensive Occupation Prospect Index, 9 were IT related occupations, while 4 were chemical related occupations, 3 were electric & electronic related, and 2 were mechanic related. IT consultants received the highest scores as the most prospective occupation, reflecting the Korean IT industry's high level of competitiveness in the global market, flexible working environment and relatively high rewards.

Second, according to the Occupation Prospect Index for the 10 years time, the occupations with the highest prospects are chemical related ones, followed by the ones that are IT related and mechanic related. To the contrary, textile and garment related occupations showed the lowest prospects, followed by construction related occupations and material related occupations.

The top-20 occupations in the comprehensive Occupation Prospect Index for the 10 years time included 5 IT related occupations, 4 mechanic related occupations, 3 environment related occupations, and 2 chemical related occupations. According to the index, the occupation with the highest prospects 10 years later will be aircraft mechanics in relation to the growth in air transportation.

Third, the analysis of the change in Occupation Prospect Index for 10 years time showed a significant structural change in the world of occupations. Prospective occupations both now and in the future included engineers in various fields, city planners, aircraft mechanics, and IT related occupations (IT consultant, computer system designer, computer security specialist, etc.). The occupations with higher prospects in the future included auto assembler and inspector, computer engineer, communication engineer, system software developer, and applied software developer.

Occupations with weakening occupation prospects 10 years later compared include construction related occupations, such as stonemason, floor construction worker, glass adhesion worker, building painter, and boiler installer, clay goods manufacturing operators, rice cake maker and incinerator operator.

3. Policy Implications

Policy implications of the above analysis are as follows.

First, it is necessary to flexibly reorganize labor force by industry and occupation in response to the future change in industry structure. According to the occupation prospect analysis, IT, electronics, chemical related occupations showed high prospects, but textiles and construction related occupations displayed a downward trend. The occupations with high prospects need to develop top brains in the field with high level of knowledge and skills required for continuous improvement in technological innovation and productivity. The industries with weakening competitiveness, such as textile and construction, need to increase the employment of workers mainly doing low skills tasks through vocation competency development. In addition, for effective labor mobility from sunset industries to emerging industries, government should provide policy support to offer education and training opportunities to acquire job skills in prospective fields.

Second, working conditions of the strategically-important industries need to be improved for sustainable growth. The prospects were high for IT consultant and IT related occupations, but they were rated poorly in terms of mental stress level, working hours and working conditions. Many of the industries with high growth potential or those regarded as core industries of the future with high levels of compensation and job creation are suffering from longer working hours and intense mental stress now and are expected to be in the future.

These results indicate that those working in the Korean economy's key industries are at the risk of depletion of competencies over a short period of time. It may not be possible to improve working conditions and reduce work intensity to match the level of advanced economies immediately, but measures should be made to lower the excessively long working hours.

Third, it is important to cope with the new manpower demand in health and well-being related occupations such as environment, food, safety, and health. According to the survey, the occupations with good future prospects are food engineer, non-destructive inspector, and industrial safety & danger manager. It is anticipated that these occupations would extend rapidly with income growth, open-door policy for foreign food and goods, and enhanced interest for better health and safety among people. It is believed that global standards on environment and safety will grow in importance, as the economy becomes further integrated into the global market. Hence, an emphasis should be placed on workers to gain vocational competencies that will allow them to undertake tasks even at the international level.

Fourth, it is necessary to expand the female-friendly occupations with better working conditions to cope with expected labor shortage. The Occupation Prospect Index result exhibited that food manufacturing inspector, construction cost estimator, textile inspector, and instrument repairer would generate more jobs for females, even though those occupations were rated low in the comprehensive Occupation Prospect Index. This implies that female-friendly jobs are expected to expand with poor working conditions in the future and it would act as a major restriction for utilizing female labor force in the labor market.

Fifth, to make 'KRIVET Occupation Prospect Index' more credible and systematic, a strategic approach is needed to secure and maintain the pool of occupation experts. In order to support career planning and development of individuals based on understanding of changes in the world of occupations, the Occupation Prospect Index survey should be carried out on a regular basis for all occupations. It is essential to build and maintain a panel of occupation experts who can provide reliable responses on the present and future state of the world of occupations.

Sixth, in order to enhance the utility of the Occupation Prospect Index, it is necessary to include the questionnaire on required core competency for each occupation. Emerging as a major issue in the knowledge-based economy is to overcome the time lag between the incidence of demand for new skills and the supply of skilled workers. If demands for manpower to be actively taken into account, a mechanism should be put into place for the generation, provision and evaluation of information related to core competencies demanded by the world of occupations.

8. Human Resources Development and Labor Market Transition of Youth(III)

Hyung-man Kim · Me-rhan Kim · Jae-sik Jun · Jaeho Chung ·
Dong-gyun Shin · Mi-jung Um · Jae-min Park

This study has been conducted to seek a solution and to trace the cause which youth in the labor market. The report has combined two fields of studies. One is the macroscopic view and human resources investment that the youth will face and the other is to identify the trend of labor market transition. The former is to observe the trend and change in youth human resources in the labor market, which focuses on the mid and long-term macroscopic view and microscopic activities. The latter focuses on the microscopic analysis of school to work transition of the youth human resources.

This report simultaneously treats labor market transition and human resources development. Taking the mutual relation into consideration, the detailed content of the report as follows:

- Aging and youth human resources development
- Investment on youth human resources development
- Youth's result in the labor market transition
- Government policy of youth human resources development and evaluation

As a result of the study, the settling point of youth human resources development is not simply solving the youth unemployment but providing quality and systematical solution of the problem. Specific countermeasures are as below.

First, management system for knowledge trade shall be established. Second, income-conditional financing shall be set as an financing vehicle for higher education considering our reality. Third, information infrastructure shall be established based on human capital investment. Fourth, human capital investment system for youth's labor market shall be prepared. For this matter, voucher system for training and training cost support that is linked is future income shall be established. Fifth, government's higher education financing management system shall be utilized. Sixth, inducement for government's indirect participation shall be provided. Seventh, the efficiency of human resources investment to strengthen high-quality human resource's productivity shall be promoted. For this kind of promotion, system such as technical holding company shall be linked with financial system. Eighth, education welfare system shall be strengthened to activate youth labor market transition.

9. Youth's Human Resources Development: Macroscopic View and Human Capital Investment

Hyung-man Kim · Jae-sik Jun · Dong-gyun Shin

This study analyzes the problem that arise related to individual's choice regarding youth human resource and provides corresponding government policy. The results are summarized below.

First, youth productivity promotion is one of the core in maintaining or strengthening nation's competitive power. Second, exchange mechanism shall be operated as a vehicle to solve fundamental problem of efficiency and equality of higher education. Third, human capital investment for the young generation has been identified to be very weak in the labor market. Fourth, government policy for youth in the higher education level is very important and the scale of education investment financial resource and support method has been identified to be important. Fifth, government policy, which is the core in human capital investment in the labor market is very weak.

Practically, if there is an allurements for human capital investment, many problem deriving can be solved. Main policy direction considering these has been listed below.

First is to promote efficiency and equality of higher education. To achieve this ① expand education loan and scholarship for balancing off public and private education liability, ② convert government budget structure per individual or team applicants, ③ expand autonomy for the institution by moderating regulation for higher education institutes, ④ promote expertise in universities by improving higher education control system, and ⑤ establish system for higher education investment of government ministries and offices.

Second is to expand youth human capital investment opportunity in the labor market. To achieve this ① prepare participation system for training based on life income of employee, ② promote training investment of the company, and ③ reorganize job training infrastructure.

The most important allurements device in the human capital investment is to modify policy failure or market failure in the human resource development and establish exchange mechanism. Policy counter measure can be proposed as below.

First, it is important to establish a system that can standardize the knowledge that can be traded in the market. Second, income-conditional financing shall run parallel with other higher education financing. Third, it is important to establish information infrastructure for human capital investment. Fourth, government financing management system for higher shall be operated effectively. Fifth, higher education allurements which government can indirectly participate is necessary. Sixth, subsidy provision for individual or team shall be reviewed so as to promote high tech efficiency. Seventh, human capital investment shall be closely linked with education welfare system.

10. Skill Mismatch and Mobility of Youth in Labor Market

Jaemin Park · Mi-jung Um · Me-Rhan Kim · Jaeho Chung

This study focuses on skill mismatch and mobility of youth in labor market. This reviews determinants and wage effect based on degree field-job choices of the employed youth. Also, this study analyzes the trend and wage levels in transfer of workplace and change of career.

This study is composed of two empirical analysis. One is the effect of the consistency in the degree field and the job on future career path and whether the maintenance of this consistency is related to the wage. The other topic is to analyze the formation of career path and the mobility of workplace after entering to the labor market.

Policy implication and empirical analysis result can be summarized into three categories. First, it is hard to see that employment stability is finding its place since graduates entails change in career. Colleges and poly-tech colleges graduates especially reflects this clear trend and transfer of job is highly not to lead to the growth and improvement of career. Therefore, to increase the vocational quality of high-quality personnel graduating from colleges and poly-tech colleges, government and companies shall retain more aggressive attitude for reviewing the system.

Second, it has been identified that the nature of first job and the employment period significantly effects the job choice made afterwards, career development and wage. This shows that the institutional and policy support is important in the process of finding the first job. Notification of the employment rate of graduates that has currently been executed shall be expanded per degree-field and region. Also, information regarding the business, industry and employment condition shall be accumulated.

Third, career change negatively affects the wage when transferring job but in case of being promoted, transferring to a bigger firm career change positively affects the wage. The more one has career change and the more one has experience different jobs, that factor positively affects the wage. This implies that career accumulation during the youth will significantly give an effect during adulthood, when the wage practically starts to increase. Therefore, policy approach of government's youth unemployment shall focus more on the long-term solution rather than on the short-term or specific newly graduates.

Besides from a policy perspective, college education that enables the accumulation of expertise in vocation and universities shall enhance the quality of degree-field education so as to support labor transition to field related jobs. More cautious approach is required for multi field, which is currently expanding. Also, diverse information shall be provided regarding employment and job.

11. Facilitation of Work-to-School Transitions Among Workers(I)

Jihee Choi · Ji-sun Jung · Chun-soo Park · Jong-woo Kim

Continuous learning became imperative to the individual, society, industry, and to the state, with the advent of lifelong learning society posed by globalization, technological changes, changes in the labour markets, and ageing of the society.

However, in spite of the growing importance of continuous learning after graduation from school and transition into the labor markets, the system is not fully ready for providing opportunities for the individual to return to school. Participation in continuous education and training is very low in general, compared to other OECD member countries, and participation in work-related continuous education and training is even lower. Low rate of participation in continuous education and training reflects low rate of participation in training among workers. It also reflects that institutions supporting transitions from work to school are not fully developed.

This study focuses on colleges and industries as two major institutions playing an important role in transition from work to school, more specifically, transition from work to college for workers employed in industries.

Colleges are important as an institution providing a venue for workers returning to college. However, it should transform into more than a physical venue that can provide real opportunities for workers to participate in college-provided training. Historically, development of lifelong-learning system of a country has been made possible with transformation of traditional colleges, whose major role was to provide education for students in their school ages, into lifelong learning institutions which provide education to people at all ages.

Industries are another major institution in work-to-college transition of workers, since workers can not participate in school-provided education and training without supports from employers. Small-and-medium sized companies(SMEs) are a major proportion of industries in Korea. This makes it difficult for workers to go back to college to learn since the employers in SMEs do not have additional workers at work to replace workers participating in off-the-job formal education. In addition, They do not have enough money to hire substitute workers.

The types of programs provided at colleges do not meet the skill needs of industries, which is another reason employers do not want to support participation of workers in college-provided courses.

This study reviews existing practices and programs for colleges and industries to support and encourage participation of workers in education provided by colleges. The study also surveys the cases of foreign colleges and universities where participation of workers in college-provided education and training is high. Major focus of this study lies in two surveys, which were implemented to collect data for this study. One of the survey is on the entire population of colleges and universities in Korea. This study surveys 400 higher educational institutions in Korea

including junior colleges, Polytechnic Colleges, Polytechnic Universities, cyber colleges. The survey reviews implementation of major practices at the college to support participation of workers and adult learners in the college-provided programs, and the extent of degree those programs and practices are activated. The other survey is taken on a sample of 1,000 industries. This survey reviews the on-and off-the job training programs provided and activated by industries, and the opportunities provided by the industry to support workers to go back to school, such as the paid-leave system to support participation in off-the-job training and the financial supports to pay for the tuition at the B.A, M.A, and Ph. D programs, both domestic and abroad. The survey also checks how many industries are actually providing training opportunities for workers in association with colleges.

In conclusion, this study reveals the major problems with the current system at colleges and industries in supporting transitions of workers back to college, drawing upon the result of the surveys, and facts taken from the review of existing work-to-college practices and programs supported by colleges, industries, and governments. The study provides suggestions to improve the current work-to-transition system from the viewpoint of three major institutions, college, industry, government. Building up and improving work-to-college transition system for workers takes more than reengineering the institutions and administrative practices at colleges and industries. However, changes of colleges and industries to attract and allow for increased participation of workers in education provided at colleges are certainly urgent policy issues that should be considered seriously at this point to consolidate lifelong learning system for the knowledge-based economy.

12. Active Ageing and Human Resource Development

Eunsang Cho · Eui-Kyu Lee · Sang-Jun Lee

1. Research objectives

Aging is a world-wide phenomenon, which is being dealt with by OECD, EU, ILO, and the advanced countries as a task of sustainable social development. In Korea, IMF crisis deepened the lack of manpower in the business and industry as a result of corporate restructuring and the rapidly progressing aging, which led to the necessity of utilizing the aged people. This research focuses vocational capacity based on the physical and mental health of the middle-aged and aged people and aims at developing policies for these people.

2. Survey Results

For the middle-aged and aged employed, it was found that the more positive life and the less health insurance premium, the better the job capacity. The better health was found to have a positive relation with the positive life, the less aged, the more property tax, and the less leave absence. The better mentality had a positive relation with positive life, the less aged, more schooling, less use of local welfare program, and more optimistic feeling of the future.

In case of the middle-aged and aged job-seekers, the present job capacity was found to have a positive relation with the less leave absence, more schooling, the positive life, less use of local welfare program, and the married couple. The better health was found to have a positive relation with the positive life, the less leave absence, male, and the less health insurance. The higher mentality had a positive relation with positive life, less use of local welfare program, male, and more optimistic feeling of the future.

In case of the middle-aged and aged job seeking stoppers, the present job capacity was found to have positive relations with less leave absence and the married couple. The better health was found to have positive relations to having a enjoyable everyday life. The higher mentality had a positive relation with having a enjoyable everyday life and the married couple.

3. Suggestions for Active Ageing in terms of System approach

The policy suggestions in terms of the system approach are presented. First, as an environmental analysis, the law prohibiting age discrimination needs to be introduced and the awareness that middle-aged is a social asset needs to be spread. Second, as an input analysis, there are a variety of needs for education so that a multiple approaches needs to link the program development to age, education, and job needs. Third, life-long learning program needs to be developed and the policy to encourage the program is needed from the perspective of a process analysis. Fourth, health policy is the most urgent need for the middle aged people. The health age instead of biological age needs to be measured. Furthermore, DB regarding the experience, network, and health needs to be constructed.

4. Policy Implication for Active Ageing

The policy for maintaining health and vocational capacity for the middle aged at the job setting can save the social costs. The education program which strengthens individual culture and self-esteem needs to be developed.

First, 60-70% of the middle aged employed is working for living. Social enterprises or social work managed by the Ministry of Labor need to employ these people. Second, 37% of the middle aged employed are working not for living, but social participation and improving family relations. The jobs to satisfy these desires need to be developed. Third, IT education enables the middle aged and the aged people to have confidence and employability. Fourth, public employment service for the aged people needs to be broadened. Fifth, the program design and policy for mental and physical health for the aged is critical as employers want the physical and mental health. Sixth, policy assistance for maintaining employment is important for utilizing know-how, technique and network for professional aged people.

For the job-seekers, social enterprises or social work managed by the Ministry of Labor need to employ these people. Second, 44% of the middle aged job-seekers need social participation and improving family relations. The jobs to satisfy these desires need to be developed. Third, job creation is considered as a critical policy for aged job seekers as the aged people feel that having jobs give them happiness and health than having no jobs.

For the policies for the job seeking stopper, a campaign for facilitating social awareness of jobs is requested as job itself represents quality of life. Second, for the job seeking stopper who pays less property tax, it needs to enlarge the amount of aged pension. For the job seeking stopper who pays beyond a certain amount of property tax, it is recommended to provide services such as health program rather than cash.

13. Study on the Forecasting of Manpower Demands by Industry and Manpower Requirements by Academic Background

Cheon-soo Park · Sang-don Lee · Jae-sik Jun · Joo-wan Park

1. Introduction

The main focus of economic activities has gone from being physical resources such as equipment and raw materials to human resources that possess the necessary technologies and knowledge. Core human resources which boast creative ideas and highly-advanced technological competencies have become an essential factor in securing competitiveness at the enterprise and even national levels. In addition, the securing of basic labor and human resources that boast basic operating skills has become a very important element in maintaining economic development and in carrying out regular economic activities.

The variable known as salary has traditionally been the main factor at play in terms of ensuring the flexible resolution of the gap between the supply and demand for manpower in individual industrial fields in Korea. However, the recent decrease in the flexibility of the labor market occasioned by the salary variable has resulted in increased difficulties in maintaining a balance between the demand and supply for manpower. In this regard the importance of providing job seekers with accurate information about general job tasks, or of detailed job descriptions at the individual enterprise level, has increased. To this end, the need to introduce an incentive system through which the required manpower could be educated has increased. In addition, as the forecasting of manpower requirements represents the basic materials with which manpower policies are established, it can serve as a road-map in establishing the direction for manpower-related policies and the studies on the forecasting of manpower requirements can be regarded as the representative of a very important element when it comes to the government's establishment of policies.

Given this reality, this study set out to forecast total manpower requirements in a highly reliable and useful fashion. In order to bridge the gap between the supply and demand for manpower, the results of the forecast conducted herein, which reflect industrial demand, were used to estimate manpower demand by academic background and major, and manpower supply by academic major.

2. Forecasting of Total Manpower Requirements

The forecasting of manpower requirements begins with an analysis of the structural changes in the economically active population. To this end, as it has an

important effect on the working age population and the main areas of production activity, it greatly influences the economy, population structure by age and region represents a very important factor. Therefore, in order to forecast manpower supply, the working age population was estimated based on population projections by age and region prepared by the Korea National Statistical Office. The population unable to engage in economic activities was naturally omitted from this calculation.

The economic activity participation rate was estimated based on projections of the working age population. In this regard, while the economic activity participation rate of men exhibited a gradual decrease during the period 1991-2006, the economic activity participation rate of women increased over the same period.

The number of economically active people can be calculated by multiplying the economic activity participation rate by the working age population. The number of economically active people will continuously increase to reach 26, 822,000 people in 2016. This increase in the economically active population can, in addition to the high academic qualifications of those participating in economic activities, be regarded as the driving force behind Korean economy growth.

The overall industrial manpower demands during the period 2006-2016 are forecasted to increase by an annual average of 1.1%p, as part of which the number of new jobs will increase by an annual average of 278,000 over the next 10 years. More to the point, while manpower demands in the agricultural, forestry, and fishery industry as well as mining industry are forecasted to experience a general decrease, manpower demands in the services industry will increase.

Taking a look at the increase in manpower demand during the 2006-2016 from a vocational standpoint, we find that the number of professionals, individuals engaged in the services industry, and technicians and para-professionals is expected to increase. Meanwhile, sales workers and skilled laborers engaged in the agriculture, forestry, and fishery sectors will in all likelihood decrease.

3. Forecasting of New Manpower Requirements

The new manpower supply included in the analysis of new manpower requirements refers to the human resources amongst the potential new manpower who participate in the labor market by searching for jobs or who are already employed. Therefore, any individual who belongs to the new manpower group that does not participate in economic activities is not included in the calculation of the supply of new manpower. New manpower can thus be regarded as those individuals who naturally begin to participate in economic activities because they have reached the age to do so, or who begin to participate in economic activities after graduation. The new manpower demand refers to the sum of the growth in demand, which is calculated based on the number of new jobs created by reasons such as economic growth, and alternative demands in the form of demands for employment occasioned by the retirement or death of existing manpower.

The most important element in terms of the demand for new manpower is the flow of manpower graduating from schools, which brings about changes in economic activities as they either enter higher education after graduation, secure employment, or look for jobs. Therefore, the analysis of the demand for new manpower conducted

in this study focuses on those who have recently graduated from school.

While the new manpower supply was forecast for the period spanning from 2007 to 2016, the actual forecasting process consisted of three steps: Forecasting of graduates by major → forecasting of the supply of new manpower by major → estimation of the supply of new manpower by vocation.

Due to the rapidly emerging phenomenon of high academic qualifications, a gradual increase in the number of individuals with high academic qualifications in Korean society occurred before 2006. However, the fact that the total number of students graduating from college or higher in 2016 is expected to remain at the current levels would seem to indicate that this phenomenon is expected to lose steam in the future.

The overall number of new manpower supplied is expected to decrease somewhat in 2011, at least when compared with 2006, before increasing again in 2016. Viewed from the standpoint of academic background, the number of new manpower graduating from colleges is expected to exhibit a big decrease as the number of students enrolled in such schools also decreases. On the contrary, the number of new manpower graduating from universities and graduate schools is anticipated to increase continuously.

In terms of the forecasting of the supply of new manpower by vocation, the supply of manpower trained in the general affairs management and general office administration sectors preferred by students with high academic qualifications such as a university or graduate school degree will increase as the size of this group expands.

The process of forecasting the demand for new manpower was carried out in three steps: forecasting of total new manpower demand by vocation forecasting of new manpower demand by vocation estimation of new manpower demand by major.

The scale of overall demand for new manpower is expected to decrease somewhat in 2011, when compared with 2006, before increasing once again in 2016. Viewed from the standpoint of academic background, the scale of the demand for new manpower who graduated from colleges will exhibit a stark decrease; meanwhile, the scale of the demand for new manpower graduating from universities and graduate schools will continuously increase.

Looking at the forecasted results for new manpower demand by vocation, we find that the demand for new manpower will continuously increase in the future in the management field. As the number of jobs created in the social sector increases, the demand for the social service jobs closely related to the social sector will also gradually increase.

The analysis and projections of the gap between the supply and demand for manpower by academic degree and vocation, as well as by academic degree and major, were conducted based on the forecasted results of the demand for new manpower demand. Here, the gap between manpower supply and demand was calculated by subtracting the forecasted new manpower supply from the new manpower demand (once the latter had been ascertained): Gap between the new manpower supply and demand = new manpower supply - new manpower demand. While an excess supply was recorded in cases where the forecasted results exhibit a plus (+), an excess demand was uncovered in cases where the results exhibit a minus (-).

The Korean market for new manpower is projected to continue to exhibit an excess supply in 2016. However, the scope of this excess supply will begin to decrease from 2011 onwards. Viewed from the standpoint of academic background, while new manpower graduating from college or higher will exhibit a decrease from 2011 onwards, the ratio of this excess supply emanating from colleges and graduate schools will increase; meanwhile, the ratio of excess supply made up by universities will decrease.

In the case of the new manpower from colleges, it is forecasted that the excess supply of new manpower will be evident in all vocational fields. Looking at the supply of new manpower by period, we find that while the scale of the excess supply of new manpower will increase during the period 2006-2011, this will begin to decrease after 2011. In the case of the new manpower from universities, although an excess supply is expected in the majority of fields, an excess demand is anticipated in the medical and pharmaceutical fields. Much as is the case with manpower from colleges and universities, an excess supply is expected in the majority of fields where the new manpower from graduate schools is concerned. However, while an excess supply will be exhibited in the medical and pharmaceutical fields, an excess demand is forecast in the engineering field.

A look at the forecasted results of the gap in new manpower requirements by vocational classification for all academic backgrounds reveals that an excess supply can be expected to prevail in terms of the overall vocational classifications.

In the case of college manpower, it is expected that an excess supply will emerge in all vocational classifications; with the largest excess supply being recorded in the social service job sector, followed by financial management, sales and personal service jobs. The smallest excess supply will be recorded in the general affairs management sector, as well as in agricultural, forestry, and fishery jobs.

At the university level, while an excess supply is anticipated for all vocational classifications, much like at the college level, the largest excess supply is expected to be recorded in the social service sector. This will be followed by the financial management, sales, personal service, and construction and production sectors.

Much as is the case at the college and university levels, an excess supply is expected in all vocational classifications at the graduate school level. The excess supply in the social service sector is in particular anticipated to account for the majority of the overall excess supply. We can see that the size of the excess supply in this particular sector has gradually increased over time. The scope of the excess supply in the general affairs management, financial management, social service, sales, and personal service sectors, as well as in the agricultural, forestry, and fisheries sectors, are all expected to expand, with the notable exception to this trend being the construction and production sectors.

4. Conclusion

The results of the manpower requirements forecasts conducted herein show that the supply of labor has, in keeping with the acceleration of the low-birth rate, decreased. To this end, it is expected that a manpower shortage will emerge over the period of the next 10 years covered in this study. According to these total

manpower requirement forecasts, the unemployment rate, which refers to the gap between the economically active population and the employed population, is expected to remain at 3.5% from 2015 onwards. Of course, as the excess demand for labor is a factor that causes a spike in wages and an excess supply of labor one that ushers in a drop in wages, the labor market will in the long term move towards achieving a balance. Therefore, the phenomenon of excess demand for manpower will gradually be scaled back as we move toward a restoration of the balance between the supply and demand for labor brought about by an increase in wages.

Nevertheless, as conflicting factors within the labor market have caused the flexible adjustment function to be improperly carried out in terms of the supply and demand for manpower, the need arises to respond to the manpower shortage by implementing a long-term manpower requirement policy. To supplement the current shortcomings in the labor force, it is necessary to establish a policy that would govern education and the use of high-quality manpower. To this end, the government has recently implemented the so-called '2+5 policy (getting a job two years earlier and working for five years more)'.

It is also forecasted that the current trend towards the aging of the population engaged in economic activities will continue. While the number of those currently in their 30s-40s, can be regarded as the core manpower engaged in economic activities, who is expected to increase somewhat, whereas the segment of the economically active population made up by those younger than 29 is expected to decrease. This reflects the current reality characterized by a low-birth trend, tendency towards high academic qualifications, and the difficulties of the younger generation to move into the labor market.

Therefore, to ease the decrease in young manpower and in core production manpower, a policy designed to make better use of the elderly and female workers, and which also takes into consideration the systematic use of foreign labor, must be drawn up. In addition, the government should implement a strategy of investing in human resources so as to develop vocational competencies through such means as the establishment of a lifelong learning system for those currently working.

Because it uses results derived from overall manpower requirements, the study of new manpower can be regarded as a part of the research conducted on total manpower requirements. However, the fact that the study of new manpower is based more on assumptions than is the case with total manpower requirements means that one is to some extent hard-pressed to display things as they actually are in the case of the studies of new manpower.

In order to conduct a study of new manpower that is based on statistics obtained from the actual labor market rather than assumptions, systematic materials must be secured. In addition, it is also necessary to continue efforts to improve the precision of forecasts through such means as comparisons of forecasted and actual results.

Studies on new manpower that are based on quantitative concepts that make use of equations to forecast manpower requirements have proven to be especially useful in the case of Korea. To this end, there is a need to continue to conduct research on new manpower from both a theoretical standpoint and from the standpoint of manpower requirements.

14. Research and Projects Based on the Innovation of Human Resources Policies

Chang-won Jang · Il-kyu Kang · Sang-don Lee · Yeo-in Yoon

In a knowledge based society where the competitiveness of a country's economy is determined by human capital and knowledge, human resource development policies are the key to promoting economic development. This study looks at Korea's current HRD related conditions and institutions with a view to suggesting the optimal HRD policy system for the future.

The study begins by considering the HRD vision, here meaning sustainable economic growth and improvement in quality of life, and policy environment. It considers Korea's national vision and overall policy environment and comes up with HRD policies that are aligned with it; also suggested is a framework for HRD policies.

The study then moves on to HRD policies and relevant laws. It looks at the relationship between HRD and laws and examines in greater detail the specific legal provisions. It provides an overview of the Human Resource Development Law. It also considers the change in the role of the Ministry of Education and Human Resources Development due to the amendment of laws. The chapter on the HRD related laws ends with a review of the revised HRD Law.

The following chapter considers the budgetary issues. It provides the current government spending on HRD and makes some recommendations for more effective use of public funds for the development of human capital. Some of the suggestions focus on collaboration and division of roles and responsibilities among government for greater efficiency. It also suggests the introduction of an information-evaluation system as an alternative way of enhancing efficiency.

The fourth chapter looks at the IT infrastructure aspect of HRD policies development and implementation with a special focus on e-Learning.

The fifth chapter considers the linkage between innovation in the supply and demand of human resources and HRD. It begins with an examination of the structural linkage then moves on to changes in the environment and conditions of supply and demand of human resources. A list of tasks for innovating the supply and demand policies are identified. The chapter closes with some implications.

The sixth chapter reviews the relationship between R&D and HRD. It starts off by comparing the status and trends of R&D investment in Korea and in other developed countries. The next part of the chapter offers a review of previous academic works and theories on the relationship between R&D and education. Then it discusses an estimation of contribution by education and R&D in economic development and considers the implications.

The seventh chapter deals with the evaluation of HRD policies. It summarizes the theoretical background in HRD policy evaluation. It recounts the progress in

the first and second years of the policy evaluation and comes up with a plan for improving the current policy evaluation framework based on the findings from previous evaluations.

The study concludes with a number of policy suggestions that pertain to each of the areas considered in the previous chapters.

15. Building of the Support System for Sectoral Human Resource Development(III): Policy Recommendations for the institutional settlement of Sectoral Human Resource Development Councils

Young-Sub Choi · Ju-Hong Min · Sang-Il Lee

1. Overview

Since 2004, there has been a new kind of policy approach in Korea's human resource development system. Following the practices of developed countries, especially the SSCs in the UK and SCs in Canada, Korean government has been trying to introduce the sectoral human resource development councils which were mainly conceived as the sector-specific round-tables between industry and academic side over each sector's education and training issues. Such efforts were based on the expectations that the gradual transformation of the HRD system from that of state-driven and supply-oriented one to a decentralized and demand-side driven system will improve the efficiency and suitability of education and training policies.

In this vein, three Sectoral Human Resource Development Councils (hereafter SCs) in mechanics, electronics and e-business sectors in 2004 and seven more SCs in automobile, shipbuilding, semiconductor, display unit, steel, textile and petroleum sectors in 2005 were established under the financial support of Korean government. Since the introduction of the SCs, there has been a lot of concerns about the feasibility of such kind of system in Korea. In some sense it might be said as inevitable to encounter many unexpected problems at the early stage due to the short of experiences of sectoral human development in Korea. But even considering such fact, skepticism may come to the fore over the sectoral approach itself and even over the demand-side driven system as well, unless SCs show that they are capable enough to change the overall education and training system in the near future. Therefore it seems very urgent to review the past of SCs and find the way of institutional settlement of SCs in Korea. To this end, we will try to find the policy suggestions for the development of SCs in Korea based on the analysis for the objective and subjective conditions of SCs in Korea.

2. Empirical Analysis of Industry Specific Skills

At first, we analyze the objective validity of sectoral approach in Korea using the labor turn over data between industries. It is based on the assumption that almost every workers, while seeking a new job, will try to find a new job which reward most for their current skills. If worker's skills comprise general skills, firm-specific

skills and 'transferable' skills like industry/occupation-specific skills, and employers generally reward such kind of transferable skills, worker's best option will be getting a new job which reward his/her general skills and also industry/occupation specific skills. This means that we can consider the labor turnover paths as indicating the magnitude or influence of industry or occupation specific skills. In this vein, we analyze the distribution of industry specific skills in Korea using labor turnover data from Employment Insurance data base. This result can be interpreted as a evidence showing the objective validity of sectoral approach in Korea since the SCs are supposed to take the responsibility of sector-specific education and training policies which meet the specific demand of their own sector.

3. Assessment of the Achievements and the Limitations of SCs in Korea

Next, we review the achievements and limitations of SCs in Korea since 2004. To this end, we carried out detailed survey about the past, the present situation and the future development of the SCs to those who have been board member of each SCs. Through the result of this survey, we found that there have been many achievements and development of the SCs including the expansion of organizational capacity of the SCs, expansion and diversification of HR projects carried out by the SCs and the enhancement of interest with regard to the demand-driven HR system. It was also found that there still exist lots of challenges like the issues of inducing more active participation of employers, enhancing the specialty of staffs about HR policy of SCs and securing and expanding the financial support from the government.

4. Exploring the Ways of Linking Sectoral and Regional Approach

Alongside the introduction of sectoral approach, regional human resource development has also been attracting much attention in these days. For example, there exist Regional Human Resource Development councils in every province all of which has been established since 2003. In fact sectoral and regional approach can be regarded as complementary measures to decentralize the policy decision making process and implement the differentiated policies according to the specific situations of each sector or region. Therefore, it can be said that linking two approaches is very important with regard to enhancing the efficiency of national human resource development system. In this vein, we conducted survey about current situation of regional HR development and tried to find the ways of link sectoral and regional approaches.

5. Policy Recommendations for the Development of SCs in Korea

Finally, based on the results of previous surveys and research, we proposed several policy suggestions about the development of SCs. Especially we stressed the importance of explicit consideration of interests of various stakeholders related to the activity of SCs. Such is reflecting the fact, on the one hand, that there have

already been several reports about the development of SCs and that, on the other hand, without taking account of complicated interweave of various interest, actual implementation of those policy suggestions may confront much difficulty and even become to be unfeasible. So in the first place, we carried out interest analysis of various stakeholders, and based on such analysis, proposed policy recommendations for the development of SCs in Korea.

16. Koreans' Occupational Consciousness and Work Ethic(2007) - In the Context of International Comparison -

Hong-Geun Chang · Young-Hoon Oh · Ji-Hee Choi · Dong-Im Lee ·
Yoon-Gyeong Jung · U-seok Seo · Gihong Yi

KRIVET has done a series of survey researches on Koreans' occupational consciousness since 1998. With the influence of persistent globalization and the impact of economic crisis around the end of 1990s, the Koreans' socio-economic perspectives and consciousness have changed significantly. Considering the situation, this study focused on illuminating the Koreans' occupational consciousness in the context of international comparison. The countries compared in this study were Korea, Japan, the United States and Germany, each of which is considered to have become an advanced IT society.

For empirical investigation, data were collected in July and August of 2007 by the Access Panel Survey. The Survey population was workers in the age group of 15 through 64 in the four countries. Each country's sample size was 1,200, making the total 4,800, which the Access Panel database selected based on the sex and age distribution of each country.

Based on the survey results, we analyzed the life and work satisfaction, work values, occupational prestige etc. Chapter 1 is a brief introduction of basic issues of this research, and chapter 2 presents a summary of previous research, its implications and the methods used for data collection and analysis. Chapters 3 through 8 deal with the following topics respectively: the satisfaction of life and job; occupational values in IT society; organizational commitment, job commitment and trust in workplace; occupational prestige consciousness; work ethic; job-qualification and occupational consciousness. Chapter 9 summarizes the entire project report.

The major findings presented in chapter 3 highlight that the life and job satisfaction were highest among American workers, the Koreans were the lowest but the Japanese. In terms of the degree of interpersonal relation, economic rewards, working hour, work environment, self-development chance, and social reputation of their own job, the workers of the United States and Germany were somewhat high, whereas those of Korea and Japan were relatively low. Especially the Koreans showed the lowest satisfaction on working hours and work environment.

Chapter 4 discusses the attitudes towards work values. Our survey results shows that the Koreans put more emphasis on economic rewards and employment stability than other country workers do. And Korean workers evaluate the importance of work in life most highly, whereas self-esteem on their job was lower than any other country workers. So Korean workers' attitude on work values shows somewhat undesirable or out-of-date characteristic which is not suitable for advanced IT society.

Chapter 5 dealt with organizational commitment, job commitment and trust in workplace. According to our analysis, Japanese respondents turned out the least positive in terms of work enthusiasm, pride in their jobs, and organizational loyalty among the four countries. However, U.S. and German workers were found to be more positive and active about their jobs than the Koreans and Japanese. Overall, the workers of the United States and Germany showed more positive attitudes towards job commitment and trust in workplace. This appears to imply that, among such western countries, isomorphism occurred in various aspects relating to occupational consciousness.

Chapter 6 analyzes differences in attitudes towards occupational prestige by country. According to our analysis, the Koreans evaluate the prestige of lawmakers, pharmacists, and middle or high school teacher highly and the Japanese did the prestige of lawmakers, pharmacists, and software developers. Whereas the Americans and Germans put comparatively high score to the prestige of software developers, mechanical engineers, pharmacists, businessmen. And occupational prestige gap was the biggest in Korea, while it was the smallest in the United States. This suggests that the Koreans have the most strong differential consciousness towards occupational prestige. Multiple regression analysis shows that job satisfaction, education level, working years and earn-ins have positive influence on self-evaluated occupational prestige.

As to work ethic, chapter 7 indicates that Korean people tend to take responsibility, spontaneity, and job competency into account seriously while less do so on creativity, conformity to organization, and integrity. The Japanese showed similar pattern to that of the Koreans. Whereas the Americans and Germans consider creativity, and integrity comparatively more important than do the workers of two east-asian advanced countries. Self-evaluated level of work ethic of one's own occupational group was highest among American workers and next the Germans. The Koreans and Japanese evaluate their own work ethic level comparatively low.

Chapter 8 dealt with perception about the relation between job qualification and occupational consciousness. On the items which represent the individual's capability, work experience was considered first in all 4 countries. Next, the Koreans and Japanese considered educational backgrounds to be more significant than certification, but the Americans and Germans thought in the opposite way. According to our analysis, job qualifications seems to have more or less positive influence on organizational and job commitment.

17. A Study on How to Enhance Global Competitiveness of Higher Education

Seung-bo Kim · Tae-joune Park · Soo-young Lee ·
Chang-yong Song · Yeon-hee Ku

With knowledge-based society bringing rapid changes in labor market and social environment, there is more attention paid to the role of higher education. In terms of the educational function of the university, there is a growing importance of providing high skilled workers to be available in the global market. The university's research function is increasingly being highlighted due to the emphasis placed on intellectual property formation and technological renovation. It is well-known that the scope of the university-industry relations and the commercialization in the university sector expands to create industrial added value. This study focuses on the extension of the three functions of higher education, namely, education, research and social service. It questions how each function corresponds and contributes to the competitiveness of individuals, organizations and nations in the global era, and examines the factors that drive Korea's higher education to improve competitiveness under the pressure of global competition.

The international comparison on the total expenditure on teaching and R&D in higher education shows that the ratio of R&D expenditure to GDP is much lower in Korea than in any other developed countries, while the ratio of expenditure on teaching to GDP is not much lower but inefficient in use. The regression analysis on the policy on inbound overseas students shows that the universities in Korea take the revenue-generation approach rather than the skilled migration approach. The case analyses on competitiveness policies of higher education in 4 countries (US, France, Japan, Singapore), which are considered to be typical in appearance for attracting overseas students, showing that the national and institutional policy of higher education focuses on inviting high-grade students and scholars abroad and, for this, active investments are made in education and research. For instance, Ritsumeikan APU in Japan which appear to adapt skilled migration policy has made an ambitious plan for filling 50% of the students and professors with foreigners. Singapore National University motivated by skilled migration policy has already filled more than 60% of the scholars and students with foreigners, especially in the graduate school level.

Based on the above quantitative and qualitative analyses, following policy directions are identified and specific policy tasks are suggested as follows: 1) expand basic infrastructure for reinforcing the functions of education, research, and social service in higher education institutions; 2) construct a competitive system among higher education institutions and among faculty members; 3) strengthen the global network and enhance the ability to attract high-ranking talented scholars and

students; 4) open the higher education market to the world more and induce quality competition among colleges in Korea.

18. Irregular Job Worker's Career Formation

Eui-Kyoo Lee · Il-Gue Kang · Sang-Jun Lee · Hak-Su Oh

This study regards suitable activation plan for irregular job worker's career formation in business environment and high skill society system that is diversified by analyzing irregular job worker's environment factor with change of labor market. This study also compares with Korea's system through a case study of career formation of Japanese irregular job worker. Through this study, necessity of policy support for activation of irregular job worker's career formation will be determined.

1. Career Formation from the Perspective of the Enterprise

First issue is the various support for career considering the enterprise's unique qualities. Enterprise need run programs to support career formation reflecting high ratio of woman resources especially in sales and service. The programs must meet with government human resource development policy and for proper education close relationship with government is required.

Second, enterprise should establish a career formation support plan which reflects the limits of irregular job worker's working and educating condition. In the field of sales and service, education for professional service was not made use of by the workforce and workforce with professional career were not provided education at all. Thus, programs of various levels with diverse contents to attract vibrant participation should be created.

Third, to activate career formation for irregular workers, enterprise must recognize the necessity of education and training for irregular workers. Enterprise must participate in lectures and meetings provided by the government for business proprietor. Through the participation, they need to establish personnel management strategy of low cost and high effectiveness.

Fourth, as examined in the case study of Japan's irregular job career formation, to promote career formation, cost related problems, obligations followed by marriage, birth, and employment must be solved. The government support the situation by setting or complementing programs and laws. However, Korea depends more on the government policy that enterprise. This results from lack of understanding in utilizing irregular workers and biases view that irregular workers are only temporary workers. To activate the career formation of irregular workers, participation of enterprise is most required.

2. Career Formation from the Perspective of the Individual

To activate career formation, first, it is most important to raise their will to build career. According to the result of research on the irregular job career formation, there were a number of enterprise that provide equal education for the full-time workers and irregular workers. Especially, in financial business, irregular workers were transferred to full-time job when they accomplish certain level in their career. In addition, they were provided job training depending on their duties. Therefore, irregular workers need to plan ahead in career formation and make use of provided education.

Second, financial support for career formation is necessary. Irregular workers need to make use of the programs provided by the government to minimize individual's expense.

Third, there needs active support for woman resource that have not worked for a long time. Middle-aged women who have stopped working due to marriage and birth and who are willing to work again need to update their resume in local employment centers. They should utilize the local education centers and continuing education academies run by universities to plan their future with career formation.

19. The Research on the Social Pact for Human Resource Development

Tong Park · Dong-im Lee · Hong-geun Chang · Eun-sang Cho

1. Research Outline

This research examines the possibility of social pact for HRD in Korea based on an analysis of the recent social dialogues and social pacts for HRD in advanced European countries and the survey analysis of the Korean labor and management. Through this research, the policy alternatives were presented to establish the systems of the social pact for HRD systematically linked to the lifelong learning - lifelong working - lifelong welfare on the various level. Particularly, this research is focusing on exploring the micro foundations of the possibility and the way of promoting the social pact for HRD in Korea.

There are two reasons of emphasizing the social pact for HRD at this point. One is that the social pact for HRD is the most powerful alternative which can achieve the national competitiveness aiming at the economic effectiveness and the social balance simultaneously. The other reason is that the social pact for HRD is the most effective way that can change the paradigm minimizing the social conflict between labor and management.

The core agenda of social pact before the 1990's in advanced European countries focused on the demands for the distribution but have since been changed to the supply side. The point is that the change in the policy paradigm about the labor market in advanced European countries is to convert the distribution-centered paradigm to the activation policy for HRD centered paradigm.

This research examines the processes of developing the social pacts for HRD in Germany, Sweden, France and England. The implication from these cases, and the micro foundations and the possibilities of promotion of the social pact for HRD are explored by assessing the current situation of the Korean labor-management and the policy for driving the new social pact for HRD in Korea are suggested on the basis of these analysis.

2. Results of the Research

The social pact for activating HRD in Germany, Sweden, France and England is connected with the economic crisis and political change. Generally, the more critical crisis happens, the bigger demand for the social pact appears and the stronger effectiveness strengthens. And there are variations of the core-standard of the social pact for HRD.

Also there are differences among participants of the social pacts for HRD in European countries. In Germany and Sweden, three parties of government, business and labor have conducted the role as the core participants of social pacts on the regional and national level. On the contrary, in France, they have stuck to the rule of labor-management initiatives thoroughly.

And finally, the keynotes of the social pact for HRD in European 4 countries are summarized as follows. In Germany, the way of social pact for HRD is expanding the level from the region to the nation. In Sweden, three parties of government, business and labor is most fortified, appearing as the earliest in the world. In France, the way of the social pact for HRD is that labor-management concludes the social pact for HRD by periods, and this is legalized by government and diffused on a national scale. In England, government and business without labor have conducted social pact on the industry/occupational level.

This research found out that the social pact for HRD is not concluded on the particular level uniformly and not conducted by singular participant. Ultimately, it is settled by variations that are the dynamics among the interested parties, the historical and systemic conditions, or the seriousness of crisis. We need to attend to these points to promote the social pact for HRD successfully in Korea.

3. Policy Implications

1) National-Level Policy Tasks

Firstly, it is needed to strengthen the effectiveness of social pacts for HRD. Our social partners reached agreements several times on the employment and HRD issues. However, according this research, firm-level labor and management didn't comply with the national-level agreements. To solve this compliance problem, it is very important to induce participation of social partners in various HRD-related projects.

Secondly, regional-industry or sectoral specific partnerships are more successful than national level partnerships. Especially both labor Unions and management prefer sectoral level social pacts to national level pacts(decentralization problem).

Thirdly, it is urgent to guarantee substantial participation of labor and management on the human resources policy. Both labor and management strongly urge government to put more efforts to expand the roles of social partners.

2) Sectoral-Level Policy Tasks

Firstly, it is needed to establish 'focused partnerships' taking account of the characteristics of specific industry. In practicing cooperative training, the social partners prefers the same kind of industry and the same size of enterprise to a broad based partnership (labor union 68.7%, management 73.6%).

Secondly, it is necessary to promote social partnerships and contract social pacts among sectoral-level peak organizations. Through these sectoral partnership, the

degree of social understanding about the importance of HRD can be enhanced.

3) Regional-Level Policy Tasks

Firstly, it is necessary to integrate RHRD related agencies and to expand the participation of regional representatives. Duplication of RHRD related agencies causes lots of loss of regional capabilities.

Secondly, the governance structure of regional employment and HRD needs to be innovated. To reform the regional governance system, All the stakeholders of RHRD need to be incorporated into a new regional agency.

4) Firm-Level Policy Tasks

Firstly, it is necessary to sublate unilateral firm-led training customs to induce the active participation of rank-and-file labors. At present, approximately 70 percent of workers consider firm-led training as a waste of time.

Secondly, a new competency based compensation system needs to be established. To do this, the Korean social partners need to design a new social compromise to change wage systems.

20. Social Capital and Human Resource Development (II) : Social Capital of Enterprises and Corporate Competitiveness in Korea

Young-Hyun Lee · Ahn-Kook Kim · Han-Gu Ryu · Mi-Ran Kim

The purpose of this study is twofold. The first is to measure the social capital and business performance of Korean enterprises. The second is to devise effective ways to develop social capital towards enhancing corporate competitiveness.

In order to achieve the above objectives the concept of an organization's social capital must first be defined. In this study, social capital has three dimensions: the structural (trust), the relational (network), and the perceptual (shared vision and values).

A survey was conducted and the responses were analyzed with the goal of determining the level of social capital and business performance of Korean companies. The sample group consisted of 100 for-profit organizations-mostly in either finance/insurance or business services sector. The survey team visited the companies to gather responses to four different types of questionnaires each designed for the HR manager, the employee representative, the team manager and the working-level staff. Respondent teams/departments were selected based on their significance in the company's business as well as their headcount. In general, departments that are key to the value creation, such as those responsible for R&D, planning and product development, with a manpower of more five people or more, were considered as a potential respondent. The survey was carried out over the course of nine weeks from July 16th to September 14th, 2007. This part of the work was outsourced to a professional research firm to ensure greater reliability of results.

The questions cover the three dimensions of social capital, namely the relational (trust), the structural (network), and the perceptual (shared vision and values), as well as the business performance as represented by, amongst others, knowledge activities, organizational commitment, labor-management cooperation and corporate efficiency. In addition to the above areas of focus, the questionnaires also deal with the company's management system and the general information about the firm.

The results were analyzed to gauge the impact that the company's management system - i.e. work organization, employment practices, organizational culture - has on social capital. Key structural factors affecting social capital include employee headcount, the number of years the company has been in business, the number of ranks in the corporate ladder and the degree to which a professional management system is established within the company.

Under the current employment practices, the level of social capital was found to be higher with more employment stability and less discrimination in the reward for individuals. Autonomy of the operating units that comprise the organization,

ease of communication, information sharing, and knowledge and information system appeared to have decisive influence on the level of social capital accumulated by Korean businesses. This implies that in creating social capital it is essential to empower the operating units, facilitate communication, establish knowledge and information system and foster information sharing.

Building upon the above findings, an in-depth analysis was made to identify the impact of social capital on organizational performance - namely knowledge activities, immersion in the organization, labor-management cooperation, and corporate efficiency.

The study found that an organization's social capital has material impact on knowledge-related activities, such as knowledge creation and sharing, and participation in learning. Trust, meanwhile, substantially affects the sharing of knowledge, which is also influenced by the internal network that is formed among the organization's members as they engage in work. The study results also showed that common vision and values have strong effect on learning while the degree of knowledge sharing had only limited impact on learning. Interestingly, the knowledge creation process in a business organization was most effective when the sharing of values and vision was mediated by learning. Trust and networking tended to have more immediate impact on the sharing of knowledge than on its creation.

The study also looked at the relationship between social capital and the degree of the individual's commitment in the organization, and found that often the one could explain the variation in the other. More specifically, the degree of meaningful sharing of vision and values appeared to have significant influence on the commitment dimension while level of trust and networking did not. This implies that if organizations seek to better engage their workers, their focus should be more on inducing them to see a common vision and values rather than on fostering networking and trust.

Another aspect the study dealt with was the correlation between social capital and labor-management cooperation. Trust and networking were found to have indirect impact - in other words, impact mediated by the system of performance recognition and information sharing, etc. - on the relationship between the employees and their management. However, the common vision and values variable may be considered to have more direct impact on the degree of labor-management cooperation. The results imply that the existence of a sound performance recognition system and fulfillment of promises made to the employees may contribute more directly to fostering productive labor relations.

Finally, the study examined the relationship between corporate efficiency and social capital. Efficiency was measured by a number of indicators, including growth in revenues, the company's place in the market, product quality and innovation initiatives. The measured efficiency was treated as a latent variable of human and social capital. Human capital was found to have significant and positive correlation with social capital, which in turn has significant and positive correlation with efficiency. However, the study could not confirm a direct impact of human capital on corporate efficiency. This finding is quite interesting in that it implies that social capital contributes more to efficiency than human capital, and as such a wealth of excellent human resources will not guarantee efficiency unless the organization also has ample social capital to support it.

Based on the above findings, the study makes a number recommendations for effective creation of social capital.

First, it is important to provide the opportunity for interaction and exchange amongst members of the organization. The management should help employees in one department get to know their colleagues in another by, for example, rotating the work responsibilities amongst employees in a business division or setting up a cross-functional committee. Moreover, the organization should provide the time and place for productive exchange between its members.

Secondly, the work organization should be designed to maximize flexibility. In an organization pursuing knowledge management and learning organization, the work organization should accommodate easy access and sharing of knowledge and information while expediting and supporting learning activities. To achieve this, the organization should reduce the overall steps in the hierarchy towards a more horizontal structure, at the same time fostering a network that links the different segments of the organization both horizontally and vertically.

Thirdly, employment stability makes cooperation amongst members possible, which ultimately contributes to the formation of internal social capital. When members of an organization can reasonably expect stable employment and thus to have lasting working relationships with his or her colleagues, than they are more inclined to help each other.

Fourthly, a rational organizational culture is essential. Establishing a shared vision and values requires democracy within the organization and recognition of individual differences and plurality. A prerequisite to fostering a culture of mutual trust in a company is to have a multilateral channel or forum for communication.

Finally, it is imperative to foster the use of knowledge and information system. One effective way to accumulate greater social capital is to encourage the employees within the organization to engage in cyber space.

21. Establishment of a Cooperative Network for Regional HRD

Il-Gyu Kang · Nam-Chul Lee · Eui-Kyoo Lee · Yeo-In Yoon

1. The Purpose of the Research and Necessity

The rapid progression towards the knowledge-based society of the 21st century has seen the possession and creation of knowledge emerge, along with competencies, as the core factors in terms of individual, organizational, and national competitiveness. The growing importance of human resources has in turn heightened individual countries interest in this particular factor.

In Korea, the Participatory Government has identified human resources as the core factor in terms of fostering national development in the 21st century, and has to this end attempted to establish various policies and strategies relating to a pan-national approach to the development of human resources. In addition, in the name of balanced national development and the expansion of the decentralization policy, the government has also established and implemented regional human resources development (Regional HRD) policies that meet the geographical, industrial, and economic characteristics of the targeted regions. At this level, the importance of regional HRD policies can be understood to lie in the fact that they are designed to alleviate existing unequal development between regions, foster a centralized policy for education and the use of human resources, and to establish a basis for balanced national development by educating human resources that mesh with regional characteristics and demands.

Meanwhile, the Ministry of Education and Human Resources Development has since 2004 supported regional human resources development centers in 13 cities and provinces outside of the capital area. Furthermore, in accordance with the Special Act on Balanced National Development, regional innovation councils(RIC) have been established in 16 cities and provinces. Sectional innovation councils closely related to regional HRD have in turn been established within 10 of these RICs. Nevertheless, the activities of these centers and councils have to date been limited. The linkage between the main actors involved in regional HRD has also been weak, thus rendering the conducting of effective operations difficult.

This study is focused on the establishment of a local-specific HRD System to be brought about through the constructing of a multilateral cooperative network between the various main actors involved in the activation of Regional HRD.

2. Conclusion and Policy Suggestions

There is an urgent need to construct a Regional HRD System between the local autonomies through which decentralization and balanced national development can

be achieved. The participation of the main actors, and the construction of a cooperative network between these main actors, should be premised on the establishment of a regional HRD policy. It is particularly important that a direction for this regional partnership (governance) be established that makes it possible to go beyond the central-local relationship discussed above and foster the development of actual local human resources. In short, it is necessary to determine clear roles for each of these main actors (public sector, R&D sector, those in charge of use and effectiveness, and the civic sector). It is especially essential that the administrative and financial roles of the local autonomies regarded as the party or manager responsible for regional HRD be clearly spelled out.

In order to construct a regional HRD partnership system, local autonomies should establish cooperative plans not only with regional actors, but also with the central government. Moreover, they should also play a leading or active supporting role in the implementation of such cooperative plans. For their part, universities and research institutes should focus on educating local human resources, while also playing an active R&D role in ensuring that these local human resources become permanent members of their respective local communities. In addition, enterprises and labor unions should change the existing industry-academic cooperation paradigm into one that is based on a form of enterprise (demander)-oriented industry-academic cooperation system through which actual business is conducted using the human resources and technologies developed in accordance with emerging types of industry-academic cooperation. Therefore, the provision of support to the academic sector should also encompass the integrated and comprehensive support needed to cover students, professors, and the human resources from enterprises. NGOs and citizen groups, in their capacity as monitors, should play the role of analyzing the HRD demands made by local residents, preparing countermeasures, and inspecting the legality and transparency of the HRD policies in place in each individual field.

In short, the legal and institutional devices, financial resources, and financial support needed to construct a cooperative network for regional HRD must be secured through the establishment of laws and institutions related to the regional HRD cooperative network, such as those pertaining to a cooperative network where human resources policy is concerned. To this end, the following suggestions are introduced herein:

First, it is necessary to clearly separate the roles of the central and local governments, and to transfer the relevant authority and resources to local governments.

Second, it is necessary to guarantee the representativeness of regions by establishing separate bodies such as a Vocational Education & Training Council, Regional HRD Council, and Lifelong Education Council, each with their own clear roles, and activating the organization and operation of a Regional HRD Council whose specialization can be guaranteed.

Third, there is a need to restructure the functions of the HRD related departments in local autonomies in a manner that makes possible the full use of the regional HRD organizations that have been created within local autonomies.

Fourth, there is a need to promote an awareness of the importance of regional HRD amongst residents, and to provide the various actors involved with pertinent

information in a transparent and open-minded manner. The voluntary participation of residents is essential if government-government or public-private cooperation for regional HRD is to succeed. To conclude, local governments should put in place and expand the windows through which regional organizations and residents can aggressively participate in the process of forging decisions relating to human resources development (HRD).

22. A Vocational Training Demand Survey: Estimation of Training Demand Following the Implementation of the Korea-U.S. FTA

Hye-won Ko · In-joong Ju · Sang-jun Lee · Sang-ho Kim

With the Korea-U.S. FTA taking effect as of April 2nd 2007, both countries are now awaiting legislative ratification. The main purpose of this study was to conduct a survey on vocational training demand arising from employment adjustment and manpower demand following the agreement.

The major findings from this study are as follows:

Firstly, in order to analyze the impact of the FTA on labor markets, the primary terms of the Korea-U.S. FTA and their impact on each job were investigated.

Secondly, the vocational training demand resulting directly from employment adjustment and manpower demand following the implementation of an FTA with the U.S. has been divided into estimates for each industry, job, and training program.

By deducting the adjusted employment number from the net job creation thanks to the FTA, the increase of manpower demand is estimated to be around 75,200 to 395,900 jobs in total. The agriculture & fishery industries, which are under more pressure for employment adjustment, might not show an increase in demand for human resources, however about 19,000 more jobs are expected to be created in the long run. In the manufacturing sector, it is estimated that there will be an increase in manpower demand in the range of 5,800 to 92,800. As a driver of job creation in the Korean market, the service sector will see an increase in manpower demand of 69,400 to 283,700.

Looking into the manpower demand derived from the agreement by job type, the biggest beneficiaries in the next decade shall be beauty, accommodation, travel, entertainment, and sport related jobs, which will experience an increase in manpower demand in the range of 25,000 to 100,000, while positions in the textile & clothing industries are expected to increase by 8,000 to 55,000.

On the basis of the previous estimation, the training demand for each job category was analyzed by classifying 75,162 jobs as a minimum demand arising from FTA in each job training program according to demand volume: other service (22,702 persons), tourism & accommodation service (5,949 persons), sewing (4,292 persons), maintenance · facilities (3,463 persons), clothes making (2,098 persons), and construction (2,092 persons).

In addition, 395,940 jobs was analyzed to be the maximum manpower demand arising from the agreement, and by job training field these can be broken down as: other services (92,231 persons), sewing (31,086 persons), maintenance · facilities (18,386 persons), and clothes making (15,197 persons).

Thirdly, targeting about 390 businesses in the machinery, electricity & electronics, clothing & textile, and the automotive & auto parts sectors, all of which are expected to be strongly affected by the Korea-U.S. FTA, surveys as well as interviews with associations representing each industry and industry leaders were conducted regarding the anticipated job & vocational training demand brought about by the FTA, and how prepared they are for the resulting changes.

In general, rather than a direct and quick effect, businesses anticipate long-term effects from the Korea-U.S. FTA. Taking a mid & long-term view, 3 years or more into the agreement the domestic market will witness job increases to some degree in the R&D sector, and another slight increase in mechanical, office, sales, and technical jobs. Meanwhile, low-skilled labor jobs are anticipated to decrease in demand. In addition, businesses in overseas markets are more likely to have an increase in manpower demand that is much higher than their overall sector.

As it is still very much in controversy for many parts of the country, it is not easy to clearly forecast the effects of the agreement between Korea & the U.S. on our economy. However, policy must be shaped to prepare countermeasures that respond to the impact of the bilateral agreement. In other words, the framing of policy should be based not on the prospective result, but should be made with reference to the result. It is much more important to prepare a contingency plan which can respond to general situations expected from the prospective result.

23. Future Changes of HRST Policy Environment and New HRST Policy Strategies in Korea

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STEPI: Mi-jung Um · Ki-beom Park · Woo-sung Lee · Jong-young Kim · Hyung-joo Kim

This study aims to bring the HRST(Human Resources in Science and Technology) issues into the core governmental policy-issue, to derive the direction of future HRST policy and to show the most urgent issues.

Here, HRST are people who fulfil any of the following conditions:

- i) successfully completed professional education equivalent to the third level in an S&T field of study
- ii) currently employed in a S&T occupation where the above qualifications are normally required
- iii) potentially employable in the above S&T occupation.

The reason of the wider definition of HRST in this report comparing with the definition of Canberra Manual in 1995 is to allow the current convergence trend (ie. emergence of Web-designer, IT contents provider etc) and to include the S&T education under the secondary education in the Sci-Tech policy. In this study, it is reminded that the HRST policy is a human resources policy to cultivate and to provoke S&T development. The scope and definition of HRST is evolved in responding to the change of the S&T and its policy.

During conducting the study, there were several panel-discussions among S&T policy makers, human resources policy maker and relevant researchers, which allow a fruitful policy-community and the diffusion of the results of the study. The direction of HRST policy and the raised issues, which are expected as the main driving force for the coming national- development, were derived from the combined analysis of internal/external environment, of others' experiences of HRST policy(EU, USA, UK, Germany, France and Japan), of current/previous Korean HRST policy.

We analyzed the general government policy directions for HRST in Korea as well as the specific policy strategies and programs in related government Ministries.

First, the policy direction for developing the core talent aligns with general trends of future forecast, environmental change and trends found in other countries. However, many policies are mainly concentrated on the support for higher education since higher education is a critical stage to develop the high talent in High Technology, which is believed to be a driving force for enhancing national competitiveness. Inevitably, duplicated policy efforts are found among various programs initiated by different Ministries. Therefore, it is important to identify and

clarify object, purpose, target and expected outcomes of various HRST programs and evaluate the relationship and the possible duplication between similar programs and foster collaboration, connection and coordination among programs. In addition, the target of HRST policies should include K-12 education beyond higher education. HRST-related Ministries should pay more attention to the improvement of overall K-12 education, in particular, the improvement of mathematics and science education through increased financial support and interests.

Second, the current HRST policies lack a global perspective. As the HRST market has become more globalized than ever, Korean HRST policies also should concern the development, utilization and distribution of the global talent.

Third, the HRST policies have been concentrated on the development stage because outputs of development-oriented policies are often more visible and it is easy to intervene. However, the HRST policies should include the utilization of human resources in the market, which implies that the policies should reflect the needs of industries and markets.

Forth, there are increasing needs for developing HRST information and statistics infrastructure such as the creation of HRST database system and providing basic demographic information on HRST.

Mid and long term HRST policy directions and strategies follow as below.

A. HRST policy directions

- 1) from a domestic perspective to a global perspective
- 2) from quantitative growth to qualitative improvement
- 3) from the development of HRST to the development & utilization of HRST
- 4) from direct policy intervention to indirect support

B. HRST policy strategies

- 1) Innovation of overall K-12 education system and STEM education to promote creativity and diversity
- 2) Diversify the higher education system by areas and levels to cultivate human resources who can maximize their potential in various areas
- 3) Innovation of higher education that enhances fusion technology
- 4) Foster global competitiveness of higher education
- 5) Support for effective utilization of the global talent
- 6) Utilization of the middle to old aged and retired HRST
- 7) Development and utilization of women HRST
- 8) Overcome the problem of avoidance of study in science and engineering by the high talent through improvement of the compensation system for HRST
- 9) Establish the basic infrastructure for HRST policies
- 10) Connection and coordination of HRST policies

24. Classification of the HRD Related Policies and the Evaluation of Their Effectiveness

Chong-Bum An · Seung-Bo Kim

1. Introduction

This research has three objectives. First, by classifying the HRD related policies in terms of their characteristics, we will attempt to make HRD policies more systematic. Second, we will construct the basic model evaluating the HRD-related policies using the existing micro data and more scientific and rigorous methods of policy evaluation. Third, based on the evaluation results, we will analyze the effectiveness of the policies and draw some policy measures solving the problems.

2. The Contents of this Research

1) The role of the government in HRD

HRD programs have traditionally been developed by government. However, considering the other developed countries' cases, we can find that the governments' development of the HRD programs plays less important role except the public education in which the possibility of market failure is considerably high.

2) HRD-related policy and characteristics by type

A. The present state of the HRD policies

The main frames of HRD-related policies are the National Human Resource Development Plan from Ministry of Education & Human Resources Development, the Life-time Vocational Education from Ministry of Labor and related Ministry, and the Female Human resource Development Plan from Ministry of Gender Equality and Family.

B. The classification by the targets of the policies

We specify the policies of vocational training and education by the target group; general people, young people, female workers and needed person.

C. The classification by the ministries

We classify the policies for the vocational education and training projects and the projects for creation of jobs as the result of the former policies.

D. The classification by policy instruments.

Based on the classification by the ministries, we classify the project into education, reeducation, vocational training and the supply side of social jobs creation.

E. The classification by financing methods

We divide the policies for the national HRD, life-time vocational skill development, and female HRD.

F. Taxation and social security policies

As the related policies with the reinforcement of selective-social welfare system, these policies enlarge special deduction on labor workers and enable firms to treat the expenditure on vocational training as welfare cost.

3) The main contents and the objects of evaluating the vocational training projects.

A. Vocational training

As the major program of the Ministry of Labor, it supplements the sectors which are not covered by public education system in terms of vocational training.

B. Training program for the unemployed

Training the unemployed consists of the training program for the unemployed and programs for helping those avoiding unemployment.

C. Training program for improving the current employees

The main point of the government's policies is that it makes the firms implement the skill improvement training for the current employees autonomously. From the employment insurance fund assigned to the firms, the government supports the firms' training programs financially. These policies include supporting training cost program and giving loans for employer.

3. Policy Evaluation Model and Evaluation of Job-training Program

This chapter introduces the policy evaluation methods for induced standard model of HRD policy and compare them. First, evaluating the impact of HRD program is divided by relevance, efficiency and effectiveness of program. Second, standard procedure for evaluating the effectiveness includes various methods of social experiment and quasi-experiment. Evaluations tended to use conventional regression methods using quasi-experimental control and experimental groups. The evaluation method using the quasi-experimental method can be applied for analyzing the effectiveness of the job training programs. Before and after model and difference in difference methods using cross sectional data or instrumental variables are also applied to both experimental group and control group. In addition, this research introduces the difference in difference method using panel data.

Most of the researches often confront limitation of data. Therefore, this chapter reviews the data available for using job-training evaluation. Those data set includes the Korean Labour & Income Panel Study(KLIPS), the Korea Welfare Panel Study(Koweps), the Youth Panel, and job-training file from the Center for Employment Information in the Department of Labor.

4. The Evaluation of Vocational Training Programs

To evaluate the vocational training programs, firstly, we need to construct the evaluation criteria based on goal and feasibility of program. Second, we have to consider that the program outcome has been achieved. Finally, we should evaluate the efficiency for financial outcome. However, we face the problem of lack of data set, leading to the conclusion that we should consider policy coordination for improving efficiency.

5. Conclusion and Further Study

This book investigates the evaluation models estimating the effectiveness of job-training using the micro & panel data sets. Especially, the main purpose of this book is evaluating effectiveness of various HRD programs in terms of comparing benefits and costs. Based on these evaluations, we can focus on the procedures of the HRD policy making.

And we also intensively analyze how to improve HRD using the Cafeteria-plan that have been introduced in 2001. This is very important, because development of HRD evaluation model and evaluation of program effectiveness can analyze consistency, durability, and efficiency of the HRD policies implemented by the Korea Government. As a result, it could raise HRD policy to success and accomplishment of various evaluation.

25. Survey Research on the Vocational Education and Training in the Asia-Pacific Region: Laos

Ji-Sun Chung · Ji-Soon Chang · Janet Han

Laos, which is located in Indochina Peninsular of the South East Asia, is one of poor countries in the world. Even though Laos has been in the transition to the market economy from social economy during 20 years, she still is short and lack of labor-force. Especially, the participant rate and conditions of higher education is deteriorated, which has been an important motive agent of economic development. There are only 3 universities in Laos. To overcome this obstacles, Laos has implemented to set up the 'education system' as the prior task of national agenda and strategy. The higher education develops the skilled worker through vocational education and training suitable for the industrial structure in the present stage. In addition, Laos tries to receive aid and support for the development from the Korean experiences.

According to this necessity, the aim of this study is to investigate the current situation, to solve the problems and to find out the improvements through survey of vocational education and training in Laos. The detail of the contents of this study is as follows.

First, it is to analyze the environment and the social and historical background of Laos. For this, we had surveyed the history and present, politic and economy, society and culture of Laos. Second, the educational system is researched especially in terms of higher education, education development plans, and participation rates, etc. Third, present and actual conditions of vocational education and training in Laos are analyzed. For this, we had surveyed the labor market, vocational educational institutes and centers, policies and strategies. Fourth, we conducted the conclusion and recommendation on the basis of this survey and contents.

The research methodologies are employed: literature review, fields survey, related data collection, and interview with the experts and officials of the Ministry of Education in Laos.

Above all, the conclusions are as follows.

First, we draw a conclusion that Lao has a good prospect for the future development for it has potential to grow in the aspects of politics, economy, society, and culture in Laos. Especially, political stability can sustain and drive forward the national development strategies. Moreover, the trades relations between Laos and Korea are increasing, and also Korean interest in Laos begin to arise.

Second, according to the actual conditions of the educational system in Laos, it is necessary to support and supplement the higher education institute, such as vocational education college and universities. The ratio of higher education population show only about 1 % of the total population, and it is short of requirement

skilled worker in industrial development.

Third, according to the demographics, the size of the population of young generation is very big, which means a big population of labor force. But there are not enough institutions and centers for vocational education and training.

Through the conclusions, we would like to suggest some recommendation for the development of Lao. First, the further study should be carried out to implement the feasibility of new request project including vocational education & training considering the priority of national development task in Lao. Second, more field survey should continue to get plans of not temporary but long term strategy on vocational education training as well as human resources development in Laos. Third, the support and supplementation of educational institutions, which were supported by Korea, should be continued, for expert dispatch, advisory work, curriculum development, textbook development, training for staffs and teachers etc.

26. Innovation-Driven HRD CLO Program Development

Jeong-Taik Lee · Sung Lee · Tong Park

1. Research Outline

- This development and management project aims at developing HRD CLO (Human Resource Development, Chief Learning Officer) Training program, based on KRIVET's 2006 research project, Developing Innovation-Driven HRD Professional Cultivation, KRIVET #2006-33, which is expected to be used as guide for workplace-level HRD professionals in designing their in-plant manpower development master plan.
 - Basic framework and components of organization-level HRD globalization-workplace convergence-based HRD CLO cultivation program are illustrated.
 - Ways for building up industry · academia · R&D · government cooperation network as functional scheme for developing workplace-driven HRD globalization-local specificity convergence HRD CLO program, are suggested here.

- Methodology
 - Data, information, and advices are constructed, collected, and sought through implementation of pre-survey on needs, and steering meetings among professionals and government officials.
 - Pre-survey with needs identifying questionnaire is conducted with 500 respondents.
 - Both local and overseas workshops are held. Local one is focused on discussions among participants over the extents to which needs and course evaluation are matched. Overseas one is held at Center for the Study of Learning, George Washington University, Washington DC, USA with 10 participants. Bench-marking of the USA experiences is the main purpose.

2. Theoretical Background

- Reference quoted in the courses of discussions is McLagan's HR Wheel Model (1989), on the basis of which further discussions about various learning organization and knowledge management-related Korean-written papers or articles are made.

- HRD-globalization-local specificity convergence was conceptualized. Convergence criteria, procedures, components, and evaluation are suggested and discussed.

3. Major Research Contents

- Simulation-based HRD globalization-local specificity convergence HRD CLO cultivation program is shown.
 - Main contents shown in the simulation.
 - The contents comprises of the following ten: HRD CLO course schedule, MOU signed by JoongAng University, HRD Korea, and KRIVET, pre- needs survey questionnaire, the survey results, brochure1, brochure2, lecture text drafting guide, lecture schedule and list of lecturers, preparation and steering committee meetings, workshop at George Washington University.
 - Main program contents:
 - ① 1st Phase: Lectures on Theories.
 - Keynote speech delivered by President, KRIVET is on Vision and Task in an era of 'Human Capital is the Key.' Lecture on human resources development with the focus on conceptualization as well as theoretical and policy development process is followed.
 - ② 2nd Phase: Policy and Strategies.
 - It lasts four weeks. Major focus is on government policies as well as understanding and effective application of the strategies. Important topics include HRD as national key growth engine, Korean ministries' policies, future national HRD policy directions, policies both on vocational capacity building up and education and training institutions, and government assistance details in the field of HRD.
 - ③ 3rd Phase: Techniques and Cases.
 - Up-to-date techniques and cases are introduced to boost trainees' wide application. Assessment on quality of human qualification, strategic approach to action learning, learning organization construction, and related further progressing of HRD are also discussed.
- Ways to upgrade Global Standard-Local Specificity Convergence Synergy Effects.
 - Key areas where synergy effects to be enhanced are intra-organizational HRD development fields.
 - Four areas where cooperation, adjustment, and network construction among key factors to be forged are as follows:
 - They are enhancement of in-plant HRD CLOs' individual learning capacity, upgrading of organizational learning capacity of the organizations they work at, speedy and smooth delivery of needed learning materials and information, and commercialization of intra-organizational HRD leadership development programs.

- Concrete areas where HRD global standards-local specificity convergence synergy effects are to be substantiated include:
 - Individual learning capacity, organizational learning capacity, teaching and learning information delivery, and teaching/learning program commercialization.

4. Policy Suggestions

- Suggestions for government assistance in construction of industry · academia · R&D · government cooperation network toward cultivation of HRD CLO.
 - A special team within MEHRD (Ministry of Education · HRD) with membership of professionals representing large · small enterprises, universities · technical colleges, and central · local governments, is to be newly built up.
 - Industry · academia · R&D · government cooperation network toward cultivation of HRD CLO need to be forged under the initiation of the team and practical government assistance guide and programs are to be designed.

- Concrete suggestions for HRD CLO cultivation
 - National comprehensive HRD CLO capacity components and elements need to be designed.
 - Equivalent ones at both public and private sectors need to be forged accordingly.
 - Ways to linking systematically both levels of the frameworks need to be developed to insure goodness-of-fit in terms of high applicability and model inter-connectivity.

- Suggestions for CLO competency training and business activities.
 - Government assistance in sectoral specific CLO competency cultivation fields.
 - Assistance in developing tailor-made CLO cultivation plans.

- Suggestions for developing learning organization of CLO leadership capacity building.
 - Financial and institutional incentives need to be developed to boost self-directed learning capacity for CLO development.
 - Tailor-made training programs need to be developed .
 - Learning organization for CLO leadership needs to be constructed substantially.

27. Korean Education & Employment Panel(2007)

Hangu Ryu · An-Guk Kim · Ju-Hong Min · Ji-Young Ryu · Dong-Jun Shin · Hee-Jeon Son

1. Necessity and Purpose of Study

- This study aims to generate panel data that are sustainable and representative in the long view to closely analyze the relation between education and the labor market while generating education-related information for the younger generation.
- The characteristics of this year's survey
 - 1,600 high school students were added to original panels for the purpose of comparativeness the first cohort(high school students in 2004) with second cohort(middle school students in 2004).
 - The second cohort's school administrator and their teachers in charge were surveyed with Web.
 - The survey solution system changed PDA to UMPC.
- In 2007, the fourth Korean Education & Employment Panel (KEEP) Survey has been conducted.
- Subject and the number of samples for this fourth survey was consisted of original samples and added samples, with 6,000 original students including 2,000 third-grade students from middle school, 2,000 third-grade students from general high school, and 2,000 third-grade students from vocational high school in 2004, and with 1,000 vocational high school students, 300 science high school students and 300 foreign language high school students newly added in 2007. Most of them now are in their third grade in high school or are sophomore in a technical college or university. Some ceased studying and are now employees. Some are preparing for college or university admission. And some of the men were conscripted into the army. This study also investigated 3,600 guardians of these high school students.

2. Results of the Third Survey

- In the third wave, we tried to survey 4,521 samples--but 1,479 samples were conscripted, studying abroad, left home, or dead. We successfully surveyed 90.5% of them.

- The raw data for the third survey was revised through the first and second cleaning works. In case there is an error or a need to be checked, this study asked directly to the respondents about whether it is right or not.
- Providing Additional Information
 - The additional information about the school of the applicable respondent such as school type, region (city/province), day or night school, coeducation, size of region, date of establishment, total number of students and the number of students in each grade, number of classes in each grade, number of teachers, number of special educational classes, number of female teachers, and other finance-related information were provided.
 - Also the additional information of the classification codes(family relationship, major in university, industry and occupation etc) were provided.
- Distribution of Research Data for Academic Conference
 - The research data for the third academic conference was distributed in June, 2007 to the researchers who submitted their research plan to the third Korean Education & Employment Panel Academic Conference.
 - The third Korean Education & Employment Panel Academic Conference was opened in October, 2005. Various opinions on the provided data type, data structure and questionnaire, explanation of variables, necessity of the additional processed variable, verification on subjective information, provision of a complementary user's guide, and management necessity for the expert group and data users were accepted through the meetings of experts after the academic conference.
- The research data for the third Korean Education & Employment Panel Survey will be officially distributed at the end of January 2008.
 - The final data along with text data will be provided in the form of SPSS and SAS data type.
 - The three sets of data by each questionnaire are likely to be provided, and the various kinds of data including the wholly integrated data or the partially integrated data are likely to be provided.
 - Users can directly download, in home page(<http://keep.nhrd.net>), various types of data like the data by each questionnaire or the partially integrated data, and user's guide, code book, layout, and questionnaire will be made.
- 『The third Korea Education & Employment Panel Academic Conference』 was held on October 9 (Tuesday), 2007
 - Date: October 9, 2007 (Tuesday) 13:30~18:00
 - Venue: Convention Center, Hoam Professor Hall, Seoul National University
 - 24 theses with 7 research themes were presented in the academic conference
 - The themes were classified into seven themes including "the effect of private tutoring, social class and entrance into university, learning motivation and achievement, entrance into labor market, schooling and determination of the course, choice of the course and experience of higher education, deschooling factor and influence"

- Also 3 award theses of graduated students were presented in the conference.
- 『Korean Education & Employment Panel Basic Analysis Report (2006) 』, which was made by analyzing statistically the results of the second survey in 2006, was written.

3. Development of the Questionnaire for the Fourth Survey

- The questionnaire for the fourth survey was divided into
 - The questionnaire for high school students, including general high school, vocational high school, science high school and foreign language high school.
 - The questionnaire for adults, including university students, employed and not employed etc.
 - The questionnaire for school administrator and school teacher in charge in high school.
 - The questionnaire for guardians of high school students.
- Three experts' conferences were held with related specialists from inside or outside the concerned field to flesh out questionnaire-related issues and ensure the validity of its content. The questionnaire process and system was repeatedly improved through the 10 brainstorming sessions conducted by the researchers.
- Change of Questionnaire by Respondent

1 st Year (2004)	2 nd Year (2005)		3 rd Year (2006)		4 th Year (2007)	
3 rd -grade students of middle school	→ 3 rd -grade students of middle school	→ Those who are working or studying for admission into a university	→ 2 nd -grade students of general and vocational high schools	→ Those who are working or studying for admission into a university	→ 3 rd -grade students of general and vocational high schools	→ 3 rd -grade students of science, foreign language and vocational high schools (additional samples)
3 rd -grade students of general high school	→ 3 rd -grade students of high school, freshmen of college or university		→ 2 nd -grade students of college or university		→ Those who are university students, employed and unemployed	
3 rd -grade students of vocational high school						
Guardians	→ Guardians		→ Guardians		→ Guardians(only high school students)	

- The questionnaire for high school students is added 1,600 panels, who are in science, foreign language high school and vocational high school in 2007, and those who were in third-grade middle school in 2004, are now in their third year in general high school or vocational high school. The questionnaire was in three different types.
 - The questionnaire for high school students consists of queries on school life, family life, leisure life, private education, work experience, course plan and course guide, vacation, and other factors deemed relevant.
- The questionnaire for adults, who are university students, employed and unemployed, is for those who were in their third year of high school in 2004. This questionnaire is the only type, but included various type modules, which are irrespective of university or its feature and employed and unemployed conditions. This questionnaire for adults was combined earlier two types questionnaire, which were for university students and those who were working as employees and studying to enter university.
- The questionnaire for adults consists of queries on school life, family life, leisure life, education · training, working experience as a student, course plan, private tutoring, job-hunting activity, job history, on-the-spot training, general features, current status with the present job, features of the current job, whether they want to get a job or not, and the job-hunting preparation etc.
- The questionnaire for guardians is similar with that of 2004 to check the family conditions of students and those who are working.
 - The questionnaire for guardians consisted of queries on change of guardians, economic status of the male guardian, economic status of female guardian, household income, assets and debts, household expenses, and dwelling conditions.

4. Fourth Year Main Survey

- Before conducting the fourth-year main survey, panels were managed through various methods such as telephone interview, mails, giving gifts since the third survey was conducted in 2006, to maintain contact with the subjects of the survey.
- This study judged the success of the survey based on the ability and quality of the interviewer. That is the reason why the researchers were careful in selecting the interviewers by region, and supervised the training for interviewers, while sometimes educated and supervised the interviewers.
- This survey started on July 20, and is still currently being completed.
- The questionnaire survey by 1:1 interview was conducted using UMPC. In case of new added panels, paper-aided group interview (PAGI) was used for the survey.

- As of the fourth week of November, the survey was finalized with 3,295 students(83.6%).
- The survey of new added panels was finalized with 1,261 students(79.8%)
 - Those who early graduated science high school is being surveyed until February.
- Present Status of the Old Panel Survey
 - As of the end of November, the survey on 73.3% out of the old panel, 3,295 subjects, was completed.
 - The subjects who are unavailable for army service were 1,742. So we planed another survey for army service.
 - The subjects who are unavailable for survey due to overseas study, and disappearance from home reached 130 students.
- Present Status of the New Panel Survey
 - As of the end of November, the survey on 79.8% out of the new panel, 1,261 subjects, was completed.
 - 319 subjects (20.2%) are scheduled to be surveyed by computer-added personal interview (CAPI).
- Difficulties in Survey
 - In 2004, the survey was conducted with the permission of the school principal or teachers. So some students thought that they had to forcefully participate in the survey. That's why some students opted not to participate in the second survey.
 - Because of the characteristics of panels, there are many cases of changes in address and contact number. Especially, this kind of problem is very serious in case of students in vocational high schools. Sometimes, these kinds of problems made the survey impossible.
- Countermeasures for the identified difficulties
 - In case the students or guardians rejected the survey, the official correspondence for cooperation along with survey guide shall be sent
 - In case the address is not clear, the address will be verified through the Ministry of Government Administration and Home Affairs.
 - After using all prescribed means in the official correspondence including the survey guide, the interviewers will try to personally interview those who are not yet responding.
 - Incentives will be offered to encourage interviewers.
 - Those who reject the survey will be given appropriate incentives to encourage them to participate in the survey.
 - Currently, 1:1 interview survey using UMPC is the basic principle of the survey. But if the sample student does not want to be visited, the interview may be done through mail questionnaire.

- Direction for the Next Survey
 - All the panels have to be contacted several times, especially those who have rejected the survey, or in case interviewers could not find the subjects' contact number, or when subjects break their appointment. Accordingly, it is necessary to extend the survey period for sending and receiving mails, and to continue making follow-up on the address of problematic students.
 - 1:1 interview survey using UMPC is the basic principle of the survey. But the survey using web questionnaire can be considered for the convenience of the respondents.
 - If the need arises to improve the means of the interviews, will improving interviewer incentive be considered? survey success proportion will become higher by applying different incentive programs according to the situation or regions.

5. Questionnaire System

- Questionnaire system has been introduced for fast and efficient collection of data from panel, to improve the reliability of the survey, to shorten the data verification period, to make the survey-related expense reasonable in the long term.
- Through the three years of Korean Education & Employment Panel Survey, we encountered unexpected problems and inefficiencies. Accordingly, such problems and inadequacies were complemented through the system development.
- In conducting the main survey, the interviewers had difficulties in operating PDA, so there were many errors in the early period of the survey. Server errors also occurred when many interviews access simultaneously.
- In Forth survey, survey tool changed into UMPC(ultra mobil PC) and server system changed into fitting UMPC. Therefore the survey system was faster and more stable than PDA .
- In 6th survey(2008), using web survey system will be considered. Using this system will reduce survey cost.

6. Future Plan

- To make the final data set that contains various types of data like the data by each questionnaire or the partially integrated data, and user's guide, code book, layout, and questionnaire to officially distribute the data for the second survey.
- To publish the basic analysis report under discussion about proclamation with

the National Statistical Office using the data of the second survey.

- To conduct data cleaning within this year after completing the fourth main survey
- To develop the questionnaire for the forth survey by March 2008
- To maintain and repair CAPI(computer aided personal interview) solution

28. Human Capital Corporate Panel Survey(2007)

Ahn-Kook Kim · Han-Gu Ryu · Young-seop Choi ·
Ju-Hong Min · Seung-Rok Hwang · Jong-Ho Lee

In the global economy, the quantity and quality of human resources possessed by a corporate is a key indicator for its competitiveness. Human resources of firms are playing an ever more important role as firms face with such changes as rapid technological progress and changes in consumer demand.

The Human Capital Corporate Panel Survey(HCCP) has been launched with an object to build up panel data which enables to measure the level of human resources of firms both at the firm level and the worker level as well as to measure the relationship between the level of human resources and the performance of firms.

The HCCP first wave data was obtained from the 454 firms and 13,000 workers in 2005. We cleaned the data using various error checking methods for several months. And we added to the data not only the financial informations from Korea Information Service Company but also the patent informations from Patent Agency of Korea.

In 2007 we have surveyed the panel firms to create the second wave data. In total, about 450 firms have been surveyed along with approximately 17,000 workers who are team leaders and teammates. The data collection process goes through December 2007.

In order to reduce the attrition rate, the survey has been conducted as a joint effort between KRIVET and the Ministry of Labor(MOL) of Korea. Also we made efforts to give the services to the panel firms, especially HR(Human Resources) seminar and HR letter on the state-of-the-art human resources methods. From the 1st wave data, we calculated each firm's HRI(Human Resources Index) scores and delivered them to the panels with the averages in industry and firm size to guess how high the level of each firm's HR is.

So far, data collection has been made successfully. Data collected still needs to go through validation process where firms and employees will be contacted to verify the answers that are proven incomplete or incorrect. The second wave of HCCP still has the following processes which are composed of error checking, academic seminar, writing basic report, and opening to the public.

29. UNESCO Regional Center Project(2007):Global Workplace-based HRD Expert Education Program Development

Sung Lee · Soo-Young Lee · Youngmin Lee

The purpose of this study was to develop an educational system to bring up HRD experts who can effectively and creatively conduct HRD tasks including analyzing the needs of employees and organizations, designing, developing, and implementing HRD curricula and programs, and evaluating HRD programs and students of their organizations.

To accomplish this research purpose, the researchers looked into various educational programs and educational systems designed to develop HRD experts in Korea and overseas. A survey questionnaire was administered to identify which competencies and expertise HRD specialists want and need to competently conduct their tasks in the field. Based on the survey results, a pilot education program was developed to test the validity and effectiveness of the pilot program and to derive implications for the development of a high-quality HRD expert education system.

The pilot program was operated for one day(7 hours) a week for 8 weeks(from 2008. 11. 1~2008. 12. 20), that was a total of 56 course hours. Thirty HRD practitioners from 24 organizations participated in the program.

The study found that most of existing education programs for HRD practitioners of commercial vendors often run for short time(usually 1 day to 5 days), which is not enough for the participants to develop needed knowledge, skills, and methods. Moreover, the contents of those programs differ from vendors to vendors because the programs are usually developed based on a vendor's educational purposes and experiences without considering holistic approach to systematically bring up HRD experts.

The competencies that HRD practitioners most want to equip with were found to be 'Development' and 'Evaluation' competencies. Most of the HRD practitioners wanted to develop a higher level of competencies and asked for higher level education programs which can provide appropriate skills, knowledge, and methods to the level of HRD experts.

HRD practitioners requested to develop a national HRD Expert Certificate program with a high standard to be authorized as an expert. The HRD practitioners also suggested that the Certification program should require a certain amount and level of educational course work, field experiences, practices as well as a certification test.

In order to develop the national HRD Expert Certification program, this study suggested that the authority should first develop a competency model for HRD practitioners. Based on the competency modeling, each educational vendor and HRD

department of organizations will be able to develop educational programs for the HRD practitioners. For the educational programs, the researchers of this study defined 5 levels of competencies for general HRD experts in each area of Analysis, Design, Develop, Implement, and Evaluation(i.e. ADDIE).

The education program to certificate the first level experts in Analysis area should include Level 5 of confidence in Analysis, Level 3 in Design, Develop, and Implement area, and Level 4 in Evaluation area. The education program for the second level experts in Analysis should provide Level 4 of confidence in Analysis, Level 2 in Design, Develop, and Implement area, and Level 3 in Evaluation area. Likewise, the education program to certificate the first level experts in Evaluation area should include Level 4 of confidence in Analysis, Level 3 in Design, Develop, and Implement, and Level 5 in Evaluation area. The education program for the second level experts in Evaluation should provide Level 3 of confidence in Analysis, Level 2 in Design, Develop, and Implement area and Level 4 in Evaluation area.

It is also suggested that the authority needs to systematically assess the educational needs of HRD practitioners and should provide educational programs to develop HRD experts based on the competency modeling. In addition, the authority needs to develop various degree programs for HRD experts such as Master's and Ph. D. programs through the cooperation between universities, industries and research institutes.

This study found that the level of skills and knowledge that HRD practitioners' possession is not high enough to apply their skills and knowledge to their tasks in order to satisfy their superiors and clients. Therefore, the authority needs to provide long term intensive educational programs or courses so that participants can have enough time to equip with from the basic to the high level of knowledge and skills and learn how to apply those skills and knowledge in the field.

30. A Study on Building up Chief Learning Officer Competency Modelling Framework

Jeong-Taik Lee

1. Research Outline

Research Purposes

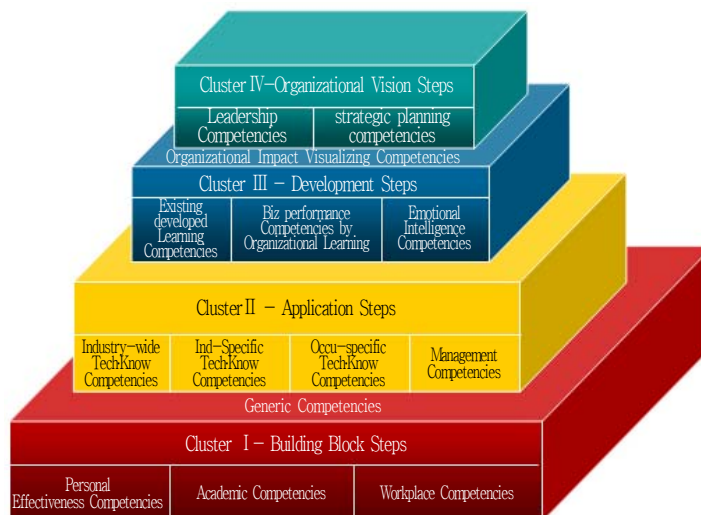
- Building up Chief Learning Officer(CLO) Competency Modelling Framework.
- Suggesting its application ways and policy alternatives.

Approach

- Literature Review and Construction of the Framework
 - Materials whose sources were introduced by Center for the Study of Learning(CSL), George Washington University were referred to and the following three summaries were drawn:
 - Critical issues facing CLOs: linking learning and development offering to corporate strategy; job-specific learning; measuring impact; leadership programs; providing innovative learning.
 - Four CLO competencies: demonstrated leadership skills; experience with strategic planning; knowledge of the learning and development process; demonstrated impact on business performance.
 - Building Competency Models: 6 step process to building competency models.
- Based on review of the above, CLO Competency Modelling Process Framework was designed by the researcher.
 - 9 tiers of competencies, emotional intelligence, leadership skills were put together and clustered into 4 steps.
 - Tier-wide systemic linkages were emphasized.
- Korean version of the Framework was introduced to Korean participants at CLO Leadership Program organized and administered by Korea HRD Co in Nov 21, 2007 in Seoul.
- The version was reexamined through the courses of meetings at CSL during Nov 26-29, 2007.

2. CLO Competency Modelling Process Framework

○ Framework



○ Features

- Substantial number of competencies are clustered into four steps.
- Multi job approach was applied for.
- Four steps(basic, application, development, strategic leadership) are in systemic linkage.
- Administering or managing competency is located at Application Step.
- Emotional intelligence capacity is located at Development Step.
- Under Korean context where the CLO competency modelling is executed, not only systemic linkage among the four steps but positioning of both administering and emotional intelligence competencies at the specified steps is an important signal for success of the framework.

3. Policy Suggestions

□ Concrete suggestions for HRD CLO cultivation

- National comprehensive HRD CLO capacity components and elements need to be designed.
- Equivalent ones at both public and private sectors need to be forged accordingly.
- Ways to linking systematically both levels of the frameworks need to be developed to insure goodness-of-fit in terms of high applicability and model inter-connectivity.

- Suggestions for CLO competency training and business activities.
 - Government assistance in sectoral specific CLO competency cultivation fields.
 - Assistance in developing tailor-made CLO cultivation plans.

- Suggestions for developing learning organization of CLO leadership capacity building.
 - Financial and institutional incentives need to be developed to boost self-directed learning capacity for CLO development.
 - Tailor-made training programs need to be developed.
 - Learning organization for CLO leadership need to be constructed substantially.

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