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School-Enterprise Cooperation for Technical and Vocational Education and Training in China

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ABSTRACT School-enterprise cooperation is an important way to train vocational and technical talents, which determines the quality of vocational education training talents. This paper discusses the motivation, purpose, scope, content and mode of school-enterprise cooperation in China's vocational and technical education, analyzes the main problems and their causes in the process of its cooperation, and on the base of them, proposed some suggests furthering deepening the school-enterprise cooperation from perspective of government, industry, businesses and schools.

KEYWORDS school-enterprise cooperation, motivation, mode, problem, suggest

Introduction

The school-enterprise cooperation in vocational education has a long history in China. China's secondary vocational education is constituted by three kinds of schools, namely, ordinary polytechnic schools, technical schools and vocational high schools. Among them, ordinary polytechnic and technical schools have deep involvement with industries and enterprises. Before 1990, the majority of Chinese polytechnic schools was run by ministries and commissions of all industries, and thus had extensive cooperation and contact with the enterprises in the corresponding industry. The schools trained professional and technical personnel for that industry. By contrast, most technical schools were run by enterprises, and each state-owned large and medium sized enterprise had its own technical school, which provided reserve labor forces for the enterprise. At that time, the polytechnic and technical schools had a good cooperative relationship with industries and enterprises. The schools' curriculum satisfied industries' and enterprises' needs, while industries and enterprises provided solid support for schools' development in various ways, such as providing schooling expenditure, accepting graduates for internship and offering employment, etc. However, after the 1990s, with the management system reform in national ministries and commissions and the reform of state-owned enterprises, the vocational schools run by industries and enterprises, regarded as a social burden, were separated from the original industries and

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enterprises which they belonged to, and were taken charge of by local educational departments, or transformed into independent self-financing educational entities. The natural tie between vocational schools, industries and enterprises were then severed, which greatly weakened the existing basis of school-enterprise cooperation.

Purpose and Objectives of the Study

Can vocational schools train high-quality technical workers for economics or not depends largely on the quality of the cooperation between schools and enterprises. So the cooperation matters a lot.

The purposes of this study are:

(a) How do the government support the cooperation from the policy perspective of vocational education.
(b) Analyze the motivation, the main fields and the main modes of the cooperation.
(c) Investigate the major problems of the cooperation, both on the macro and micro levels.
(d) Put forward some suggestions to deepen the cooperation in terms of the problems that investigated in the former part.

The State Policies and Regulations to Support the Cooperation between Vocational Schools and Enterprises

In 1985, CPC Central Committee Decision on Education System Reform pointed out, "in order to develop the vocational and technical education, enterprises, institutions and business sectors shall be fully motivated and various units and departments shall be encouraged to establish vocational schools either by themselves, by joint running, or by collaboration with education departments". Industries and enterprises were advocated to participate in vocational education.

In 1991, the State Council Decision on Vigorously Developing Vocational and Technical Education pointed out, "all kinds of vocational and technical schools and training centers shall promote school-run industries and build bases for production practice in light of the teaching needs and its actual conditions. The combination of production and teaching and the combination of work and study are recommended." In vocational education, a training model of combining teaching with production was advocated.

The Vocational Education Law of the People's Republic of China promulgated in 1996 clearly stipulated that "in teaching, vocational schools and vocational training institutions should integrate education with industrial production, aim at serving the needs of local economic development, and maintain close ties with enterprises, thus helping trainees to acquire practical skills and become skilled workers." "An enterprise

shall, in light of its actual conditions, provide systematic vocational education and training for its own employees and for the persons to be employed. An enterprise may establish vocational school(s) or vocational training institution(s) either by itself or in collaboration with other enterprise(s), and it may also entrust existing schools or vocational training institutions to provide vocational education for its own employees or for the persons to be employed." This was the first time when enterprises' responsibilities to provide vocational education were identified clearly by legislature; vocational institutions should develop a training model of combing teaching with production.

In 2005, State Council Decision on Vigorously Developing Vocational Education once again made clear that "[we will] vigorously develop the training model of combining work and study and fostering cooperation between schools and enterprises. We will foster close links with enterprises, create more internship programs in production and opportunities for social practice for students, and reform the traditional personnel training model centered on schools and classrooms. Students in secondary vocational schools will do internships in enterprises and other employer units in their senior year, and the period of internship and practical training for students in higher vocational colleges should not be less than half a year. We will put in place a system by which enterprises accept students from vocational schools and colleges for internship programs."

The National Outline for Medium and Long Term Educational Reform and Development in 2010 further clarified that "we will implement the training model of combining work with study, of school-enterprise cooperation, and of doing internships in enterprises. Industries and enterprises shall be motivated. A school running mechanism that is government-led, industry-guided, and enterprise-involved should be established and improved. Regulations will be made to promote the cooperation between schools and enterprises. The school-enterprise cooperation will be institutionalized. We will encourage industry organizations and enterprises to establish vocational schools and the enterprises may entrust vocational schools to provide vocational education for their own employees. Preferential policies will be formulated to encourage enterprises to accept students for internship and practical training and to increase investment in vocational education."

From the above policies and regulations that are essential to the development of vocational education, we can arrive at a conclusion that nation's regulations for school-enterprise cooperation in vocational education have undergone a constant development from the mere advocacy of school-enterprise cooperation at first to the later formulation of cooperative contents and modes. Although most of the policies on cooperative contents and modes are made only to advocate the cooperation and have no legal force, these policies still play an important role in promoting the school-enterprise cooperation in vocational education.

Cooperation between Vocational Schools and Enterprises in China

Incentives for Cooperation between Vocational Schools and Enterprises

Most vocational schools strongly endorse the principle of collaborating with enterprises and foresee distinct benefits for both schools and students from strengthening or expanding their fields of cooperation. The following main specific outcomes are expected by schools:

- Improving graduate employment
- Enhancing teaching quality through upgrading teachers' knowledge and skills
- Improving school management and administration
- Improvements to infrastructure and training facilities

Enterprises express similar incentives for strengthened ties with schools, with human resource managers and company directors citing the following main positive expected results:

- Identifying suitably qualified and skilled personnel for employment
- Improving the effectiveness of on-the-job training
- Raising the visibility of the enterprise and strengthening public relations
- Meeting particular or temporary demand for skills (i.e. for specific projects)
- Drawing on the 'know how' and technical expertise of school staff

Main Forms of Cooperation between Schools and Enterprises

Skills Training

Practical skills training is the core field of cooperation with almost all TVET schools, to varying extents, seeking to cooperate with enterprises in this field. The principal aspects of such cooperation include:

Development of training programs and curricula

Schools and enterprises cooperate with each other in identifying, planning and revising skills training programs, with enterprise managers and experts engaged in curriculum development and formulation of teaching plans. The curriculum is developed in accordance with the enterprise's actual product line and its demand for skills. Managers and key technicians of enterprises analyze the requirements of a particular job and determine the structure and content of the course and subsequently, compile relevant training materials.

Practical training

In accordance with the skills requirements for specific jobs, schools and enterprises jointly run practical training programs and workshops both inside and outside schools. This type of program integrates practical training with professional skills assessment and certification by employers.

Developing training teams

Schools and enterprises cooperate to develop new "dual-teacher" types of training teams, which are similar to "theory" and "practical application". On the one hand, technical experts from enterprises are introduced to schools as part-time teachers and, on the other, in-service teachers are detailed to enterprises to gain practical experience, kept abreast of new technologies, new equipment and to develop new skills.

Production and Technical Services Provided by Schools

Use of a schools' own resource-base to provide a range of technical and production services is an important field of cooperation with enterprises. Scope for cooperation includes the following activities:

Research and development of production technology

Development of new production technology directly satisfies enterprises' demand for improved production and promotes innovation. Projects to develop production technology seek to integrate the relative strengths of both schools and enterprises. This typically involves close cooperation at management levels and may entail legal agreements.

Provision of technical services

Specific examples of services that may be provided by schools to enterprises include:

- Skills training and upgrading for employees: Schools are able to offer facilities, teachers, equipment and other resources that may not be available in enterprises.
- Providing skills assessment and certification : Schools may establish accreditation entities to provide vocational skills assessment and certification for enterprises as well as students.
- Commissioning of schools by enterprises to organize professional competitions

On the one hand, such events help to popularize both schools and enterprises and are good for public relations. They open-up the schools to enterprises and promote understanding and engagement. On the other, such activities allow schools to obtain information from enterprises about their technological capability and to understand their skills requirements. Each of these contributes to curriculum reform and to improvements in overall education and teaching quality.

Models of School-Enterprise Cooperation in TVET

A number of distinct models have evolved to describe and categorize the fields of cooperation between TVET schools and enterprises.

Order-Based Training

The order-based training model is a work-study combination by which schools and enterprises jointly design skills training plans, agree employment quotas and cooperate on teaching faculty, technology, school facilities, etc. Alternating between work and study, teaching is carried out in both schools and enterprises and students are directly

employed by the enterprise after graduation. It is a popular form of training delivery and has been widely adopted by schools.

The key features of the model include:

- Schools and enterprises sign agreements on employment and training.
- Schools and enterprises jointly design skills training plans.
- Schools and enterprises jointly deliver the training making use of the educational resources of both parties.
- The enterprises are responsible for the graduate employment in accordance with the agreement.

Order-based training does, however, also have its limitations. While it endows students with outstanding professional competencies linked to the characteristics of a particular post and enables them to rapidly adapt to the new job, it also inevitably narrows their perspective and risks restricting their future career development.

"Two + One" Training

Under the "Two +One" model, the school system is divided into two phases. The first phase includes teaching of general knowledge, professional theory and practical training (mainly in the school laboratory or on production training facilities inside schools). The second phase is the stage of post-practice in which students serve interns in production lines of enterprises, under the guidance of trainers assigned by both schools and enterprises. In this way, the skills acquired in schools are applied in actual production. On the third or final year of study, training is focused on exposure to a professional atmosphere and real work processes.

The "2+1" model is commonly adopted in the PRC's TVET system and is provided for in a number of legal and other official documents. There are, however, some difficulties in its specific application. For example, in the internship phase, although students are entitled to an honorarium, some enterprises may take advantage of them as cheap labor which weakens the educational function and diminishes the spirit of cooperation with schools.

Alternation of Work and Study

Through a system of work-study alternation, practical work experience is organized several times over the whole three-year training period, with each period lasting no more than six months or one semester. School-based study and practical work alternate to ensure a close integration of theory and practice. Schools applying this model vary the frequency and timing of students' work practice to reflect the characteristics of different professions.

The work-study alternation model can be flexible in responding to the various cycles of theory and practice and so provide students with a customized learning experience. Drawbacks to the approach are the difficulties caused in management of the various cycles of theoretical study and practical work, which may present a challenge to administrators.

Cooperation in Specialty Subjects

TVET schools have cooperated extensively with enterprises in specific subject areas. Typically, the approach is to set up a professional Steering Committee constituted by key teachers, industry experts and technical personnel from the enterprises. The committee meets regularly to study issues related to the training such as teaching plans, the curriculum, and development of learning materials, practical subject-specific tasks and organization of teaching teams. TVET schools and their partner enterprise may sign a cooperation agreement to establish such long-term relationships.

Practical Training in Schools

To bring the learning environment closer to actual production processes, as well as to solve the problem of heavy investment in training facilities and regular renewal of equipment, many TVET schools have begun to seek cooperation with enterprises to establish practical production training bases inside schools. The most common approach is to set up an actual workstation from the enterprise in the school premises. The school and enterprises jointly invest funds, equipment, and manpower in the project and a joint-stock management system is implemented, whereby the school and enterprise hold a certain percentage of shares respectively according to their investments. With the adoption of the modern enterprise management system of "clearly defining property rights, specifying rights and responsibilities, separating ownership from daily management and adopting scientific management", the practice base is established as an independent legal entity. In this mode of cooperation, the production workshop accepts students from the school for internships and any economic benefits that result from sale of manufactured products are shared by both the school and enterprise.

Enterprise Trusteeship

Enterprise trusteeship is a new approach that has been explored by TVET schools over the past two years. Relying on the strength of their core specialties, schools can accept an enterprises' commission to extend operations and management to the product base of the enterprise, with both schools and enterprises sharing the benefits. Since the commissioning enterprises and the specialties of schools are closely related to each other, schools have the technical capacity to manage production and at the same time are able to deploy students for training and practice. As a result, school teaching can be more closely combined with the practical operations in the enterprises.

School-Owned Enterprises

To better achieve an optimal combination of study and practical work, and to ensure the integrity of students' training without potential risk of exploitation by enterprises, many TVET schools have begun to establish enterprises of their own using their available resources (equipment and professional teachers). Schools rely on the strength of their core specialties to establish training companies that externally contract production tasks and services and internally enroll students of relevant majors for production practice. In this way, a complete integration between school and enterprise is

achieved. This mode enables the school to arrange for students to undertake internship at any time according to their learning requirements and ensure that they have access to a full range of production practices within the school.

Challenges in Promoting School-Enterprise Cooperation

Lack of Legal Frameworks for Cooperation

The rights and obligations of enterprises to participate in TVET are neither stipulated in the Law on Education nor in Vocational Education Law. Article 46 of the Law on Education provides: "The state encourages enterprises, organizations, community groups and other social organizations to cooperate in various forms with universities, colleges and secondary vocational schools in areas such as teaching, scientific research, technology development, etc." This provision is to allow schools and enterprises to undertake cooperation in various forms, but with no legal regulation. As the respective rights and obligations of the enterprises and schools are not identified by laws or supported by guidelines, if one party commits a breach of the agreement it will not be liable to an effective discipline and the rights of the injured party cannot be effectively safeguarded. The cooperation between the school and enterprise is merely based on the goodwill of both parties.

The safety of students, as well as their employees, is a key reason for enterprises being unwilling to accept students for practical training. Insurance costs and lack of clarity over legal liabilities are serious considerations for potential partners in enterprise.

Industrial Associations Fail to Play a Representative Role

Most sectors of industry in the PRC have set up Industry Associations. Currently, however, their role is marginal and influence is limited. They have not evolved as a part of a process of dialogue within industries but originated from executive orders by government authorities in the early stages of industrialization. The shortcomings of such associations are evident and include a lack of independence in funding, workspace and personnel. These serious shortcomings have gradually reduced such associations to nominal administrative units, leaving them unable to address actual needs.

Conflicts between Enterprises' Production Targets and Schools' Educational Goals

Enterprises are production and operations units and are economically oriented, aiming to maximize profits with minimum investment. TVET schools have the responsibility of cultivating highly qualified workers and skilled professionals who are educationally-oriented. Thus, different objectives may result in conflict between an enterprises' production purpose and the schools' teaching mandate. The production process and the teaching process are both continuous, so external interference can easily interrupt the process and affect the actual result. Students in TVET schools are at the preparatory stage of their careers and not yet fully equipped with the knowledge and

skills required for the world of work. Therefore, if these students enter the field of production, they risk becoming a distraction to the enterprises' staff, increasing production costs and causing delays to normal production runs, which are additional burdens for enterprises.

Recommendations

The sound development of school and enterprise cooperation requires joint efforts by all concerned stakeholders, including government, industry, enterprises and schools.

Recommendations to Government

Development of New Policy Guidelines

Policy statements play a guiding role in public affairs. To further promote an effective and high-quality TVET system through enhanced cooperation between schools and enterprises in China, firstly, a school-enterprise cooperation policy must be established. It should include an overall policy of encouraging school-enterprise cooperation as well as a series of specific policies to include a fiscal policy that covers tax relief, capital investment, distribution of profit benefits, sharing of results, intellectual property, employee remuneration, etc. Secondly, clear regulations need to be formulated to ensure the implementation of such a policy. Most policies on school-enterprise cooperation in the past have lacked corresponding regulations. As a result, they had been difficult to successfully implement.

Legal Provisions

When the government has established a policy framework on school and enterprise cooperation, it should simultaneously formulate the necessary laws and regulations to clarify each party's responsibilities and obligations to safeguard their respective interests.

These should focus on two aspects. First, there should be a particular law to support cooperation between schools and enterprises. It should stipulate the capital source, the form and scope of cooperation and give a clear description of the rights and obligations of all parties. It should also serve to enhance the efficiency of resource utilization and deal with potential conflicts over the interests of both school and enterprise. Secondly, relevant regulations on school and enterprise cooperation should be added to the law. For instance, so as to incentives enterprises to enter into partnerships with schools, a provision on tax relief may be added to the Income Tax Law.

Advocacy

The government should make good use of mass media such as TV, radio, the Internet, newspapers and other forms to advocate and publicise the impact and advantages of school and enterprise cooperation. This can create an image or level of public awareness that is beneficial to such cooperation. The government may also

recognise organisations and individuals who have outstanding performance in a given area of school-enterprise cooperation, using mass media to publicise successful cases.

Recommendations to Industry

First of all, steps need to be taken to strengthen the guidance function of the industrial authority within a certain industry. Although enterprises and vocational schools are no longer to be controlled by the industrial authority, the production and management systems of enterprises and the specialty provisions of TVET schools maintain strong features of that industry. Thus, the industrial authority should, through specific provisions in the relevant industry's strategic plan, promote cooperation between enterprises and vocational schools within their industry and let them work together for the sound development of that industry.

Secondly, it is necessary to intensify the function of industrial associations in promoting school and enterprise cooperation. A free hand should be given to industrial associations in determining standards for professional qualifications and for assessment of trainings related to the industry, thus giving industrial associations a key role in the process and strengthening their purpose. The role of the association should also be as an intermediary in promoting healthy cooperation between enterprises, vocational schools and other public institutions within the industry.

Recommendations to Enterprises

Develop Skills-Oriented Strategies

One of the major contributions of vocational schools to enterprises is to supply high-quality technical skills that are in demand. Whether enterprises will wish to cooperate with schools depends to a great extent on the degree of importance they attach to investment in such skills. At present, the majority of domestic enterprises have not prioritized this issue. Enterprises need to recognize that skills are essential to the enterprises' survival and development and the cultivation of a reserve of skills should be central to the enterprises' long-term development plan. Likewise, enterprises should acknowledge that a partnership with schools is an effective way to obtain an excellent supply of skilled labor. This reserve of skilled people will include a good knowledge of corporate production processes and an understanding of the technical requirements for particular positions. They will also have a good knowledge of the enterprises' own culture and development strategies. In addition, costs can be reduced where recruitment is needlessly carried out in the labor market.

Participate in the Management of TVET Schools

Well-founded enterprises, with the support of the government and under clear legal and policy guidelines, should enter into discussions with relevant TVET schools to explore options for management-based partnerships. An initial step should be to establish practical training bases in TVET schools, supported by their own experienced engineering and technology personnel. These experts should be briefed and given

guidelines on how to contribute to the development of the schools' curriculum, operating practical training courses, advising teachers and providing career guidance.

Recommendations to Vocational Schools

Development of Open and Cooperative Education

Firstly, managers of TVET schools should adopt a mindset of open education and develop an outward looking vision based on innovations in external cooperation. As TVET has the closest educational links with the local economy, school managers should actively seek to strengthen links within economic circles, to keep abreast of labor market trends and have the flexibility to make appropriate adjustments. Secondly, school managers should seek to increase enrolment, expand their sources of finance and focus on the optimum allocation and efficiency of resources. Thirdly, TVET schools should specifically cultivate partnerships with enterprises involving work-study combinations under new forms of cooperative education to be provided by law.

Provide Training to Meet the Demands of Enterprises

Firstly, the provision and adjustment of specialties in vocational schools should take full account of local socio-economic development planning and industrial development trends. Schools need to establish systems by which their training provisions adopt to changes in the labor market and the needs of employers. This will serve to increase enterprises engagement in cooperative education. Secondly, the quality of skills training needs to be improved and made more directly relevant. Improvements to the quality of training outcomes are key to ensuring the active cooperation of enterprises and in promoting confidence in their cooperation.

Motivate Teachers to Cooperate with Enterprises

TVET schools should formulate policies to encourage their teachers to work together with the technical personnel of enterprises to develop teaching materials and improve teaching methods, standards and assessment systems. When it comes to their own professional appraisal, which is linked to promotion, a raise in salary or bonuses, preference should be given to those teachers who actively cooperate with enterprises.

Provide a Range of High-Quality Services

TVET schools should provide as many technological and training services as possible, targeted at enterprises and with a view towards long-term cooperation. These may include sending excellent teachers to support product innovation and provide technology upgrades, and providing professional technical training for enterprise employees according to demand.

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Role of the Students' Self-Concept for Their Career Consciousness in Japanese Technical High School: Case Study of a Longitudinal Design in 12th Grade Students

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ABSTRACT The purpose of this study is to explore the role of the Students' Self-concept for their career consciousness in Japanese technical high school by focusing on the career counseling. As a longitudinal design study, a survey was conducted on 251 twelfth-grade technical high school students. We used the "Scale of Career-consciousness (Kawasaki, 2005)" and the "Scale of Self-concept in Technical High Schools (Shimada et al., 2007)". From the survey, we could see an increase tendency of career consciousness in twelfth-grade students. On the other hand, by the multiple regression analysis, we found that self-concept plays an important role in promoting career consciousness in twelfth grade students. In addition we suggested that career counseling plays an important role to promote the self-concept. However, we found an issue that the relationship between "professional skill development" and "future visualize" showed a negative value. It is thought that the reason for this is because the students think a lot about the difficulties of an engineer when students are hunting a job. This is the most important result, and we must tackle this problem as a future study purposes.

KEY WORDS technical high school, students, self-concept, career consciousness

Introduction

The purpose of this study is to explore the role of the Students' Self-concept for their

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career consciousness in Japanese technical high school by focusing on the career counseling.

The aim of technical high schools is to train young engineers to support the technological society of future Japan. This course is placed as a part of vocational education from senior high school level (from 10th to 12th grade). There are a lot of courses in technical high school, including electrical engineering, mechanical engineering, construction technology, textile technology, information technology, fabrication, metalworking and civil engineering. It is expected that students will learn specialized skills and knowledge in these courses (Course of Study, Government of Japan, 1999).

Career education is important in educating students in their views of career and work and in cultivating the ability to proactively select and decide career paths. For that purpose, Ministry of Education, Culture, Sports, Science and Technology(MEXT) is promoting systematic career education applicable to each school stage through experience in the workplace and so on. Therefore, "career counseling" is important at each school stage and supports students in realizing their visions for the future. Especially, this is important for technical high school students to promote career consciousness. In case of Japan, Senzaki(2001) pointed out the importance of self-concept in career counseling. He said that it was important that career counseling clarify students' self-concept, and that the basic principles of career counseling should encourage self-actualization. Also, Super(1957) suggested that the vocational self-concept is clarified at adolescence. He said that this self-concept determine their interest or aptitude for a job. In addition, Adachi(1990) pointed out it was important to correlate current self-image with future self-image deeply after exploring the developing process of vocational self-concept. As seen from the above, students' self-concept is important role to promote the career consciousness.

Generally, it is important for school education to form the students' self-concept with their scholarship. Self-concept can be defined as the concept of oneself that is found by all life experiences (Rogers et al., 1954). Of course, school life is the most important to encourage students' self-concept.

We reported to have analyzed the structure of technical high school students' self-concepts before (Shimada et al., 2007). In this research, a survey was conducted on 1,040 technical high school students in Japan. A factor analysis was carried out, and five factors were identified: F1 attitude toward self-discipline; F2 attitude toward career development; F3 attitude toward professional skill development; F4 attitude toward social values; and F5, attitude toward self-monitoring. It is suggested that the structure of students' self-concepts in technical high school includes these five components. The result of the ANOVA test showed that there were significant differences among students of the three different grades for F1, F2, and F3. The average scores for F1 and F2 became higher for older students, while the average scores for F3 went down for older

students. Also, we made a "Scale of Students' Self-concept in Technical High School." In addition, we researched the interrelations between students' self-concept and their consciousness for "Practical Study" in technical education (2006a). We also analyzed the effect of production activities in "Project Study" on students' self-concept in technical high school (2006b). "Practical Study" and "Project Study" are representative lectures of technical high school education in Japan. As a result, we pointed out that these practical learning experiences had good effects on promoting students' self-concept.

This time around, we tried to grasp the role of the students' self-concept for their career consciousness. For that purpose, as a longitudinal design study, we explored the alteration of the students' career consciousness in technical high school by focusing on the students' self-concept and career counseling.

Method of Research

Subject

The subjects were 251 twelfth grade students in a technical high school at Osaka prefecture in Japan, with 202 students (80.5%) returning valid responses. These students entered technical high school at April 2007, and they are going to graduate at March 2010.

Questions

We prepared a questionnaire which measured the "Scale of career consciousness" (Kawasaki, 2005, see Table 1) and the "Scale of students' self-concept in technical high school" (Shimada et al., 2007, see Table 1). The scale of career consciousness composed five factors; "F1 future visualize" (question item No.1 to 4); "F2 confidence for decision-making" (No.5 to 9); "F3 activeness of information-gathering for the future" (No.10 to 14); "F4 positive identity" (No.15 to 17) and "F5 human relations" (No.18 to 20). Also, the scale of self-concept composed of five factors; "F1 attitude toward self-discipline" (question item No, 1 to 6); "F2 attitude toward career development" (No, 7 to 9); "F3 attitude toward professional skill development" (No, 10 to 14); "F4 attitude toward social values" (No, 15 to 17) and "F5 attitude toward self-monitoring" (No, 18 to 19). Students responded to these items using a 5-point scale (5 strongly agree; 4 agree; 3 not sure; 2 disagree; 1strongly disagree).

Table 1
The Scale of Students' Self-Concept in Technical High School

No.	Questions items
1	I have a foresight of my future or job I wanted.
2	I think that I have to experience I need for my future.
3	If I try hard for an aim, I can do almost anything.
4	I have a plan for my career and life.
5	I can anticipate the possibility that what happens from my important decisions.
6	I can find the cause of a problem when I face the problem of difficult situation.
7	I can make a good plan when I set a goal.
8	I can collect as a lot of information as possible to find best solution.
9	I think that my friends trust me.
10	I want to know that foresight of future job of my friends and action for the foresight of them.
11	I want to know about the job which I can use my ability and originality.
12	I am concerned about future work and life.
13	I think my experience of relation with work and life are useful to my future life.
14	I want to broaden my experience for thinking future job and life.
15	I like myself.
16	I am confident in myself.
17	I follow my beliefs and sense of value at the time of an important determination.
18	I think it is important that harmony with people and rules.
19	I try to be honest for others.
20	I think human-relation is important for my life.

Procedures

The survey was carried out twice (first: when the subjects move on to 12th grade in technical high school at April 2009; second: when they graduate at February 2010). For your information, the academic year runs from April to March in Japan. After the survey is done, firstly, we organized the school curriculum and situation of career counseling in investigated school. Secondly, we examined the alteration of students' career consciousness and self-concept at 12th grade by using an ANOVA. Also, we examined the influence of self-concept on career consciousness by using the multiple regression analysis.

Situation in Investigated School

Table 3 lists the curriculum of mechanical engineering course, 12th grade in technical high school. Students study a lot of specialized subjects about mechanical engineering with general subjects in three years.

On the other hand, Table 4 lists the situation of career counseling. We can observe that there are more events for the 12th grade students than the 10th and 11th grade students. Especially, in investigated school, students take the career counseling in 12th grade in a dynamical way.

Table 3
Curriculum in Investigation School at 12th Grade

Credit	Subject	Credit	Subject
1	Japanese	16	Mechanical Drawing
2		17	
3	Contemporary Social Studies	18	
4		19	Manufacturing Process
5	Mathematics	20	
6		21	Project Study
7	Physical Education	22	
8		23	
9	Home Economics Education	24	Optional Subject 1
10		25	
11	Practical Study Of Machine	26	Optional Subject 1
12		27	
13		28	Optional Subject 1
14		29	
15		30	Homeroom Activity

Table 4
Situation of Career Counseling in Investigation School

School year	Event regarding career counseling
10th	Students take a special subject, “Career Design”. Investigation; the job-hunter/the college-bound
11th	Parent-teacher conference Internship Supplementary lesson for the college-bound students Investigation; the job-hunter/the college-bound
12th	Parent-teacher conference Orientation sessions of college, vocational school and occupation Preparation for employment interview Students take mock examination for the college-bound Homeroom teacher help with resume writing

Results and Discussions

Alteration of Students' Each Consciousness

We carried out the ANOVA based on the mean score of the scale of career consciousness (see Table 5). The result of this indicated significant difference about four factors; "F1, future visualize"($F(1,201)=10.50$, $p<.01$); "F2, confidence in decision-making"($F(1,201)=24.96$, $p<.01$); "F4, positive identity"($F(1,201)=3.90$, $p<.01$); and "F5, human relations"($F(1,201)=11.15$, $p<.01$). These four factors' mean scores rose at the time of graduation. Therefore, we could see rising career consciousness among 12th grade students.

Table 5
Alteration of Students' Career Consciousness

Self-concept	At the time of moving on to 12th grade		At the time of graduation		F-value df(1,201)
	Mean	SD	Mean	SD	
F1, future visualize	3.33	0.74	3.57	0.81	10.50**
F2, confidence for decision-making	3.05	0.59	3.36	0.71	24.96**
F3, activeness of information-gathering for the future	3.98	0.69	4.01	0.69	0.12
F4, positive identity	2.92	0.58	3.08	0.91	3.90**
F5, human relations	3.74	0.72	3.99	0.79	11.15**

On the other hand, we carried out a similar analysis based on the mean score of the scale of self-concept (see Table 6). The result of this indicated significant differences at two factors; which are "F1, attitude toward self-discipline"($F(1,201)=10.85$, $p<.01$) and "F2, attitude toward career development"($F(1,201)=17.85$, $p<.01$). These two factors' mean scores rose at the time of graduation. Therefore, we could see rising self-concept among 12th grade students at F1 and F2. However, there is not much of a change in F3, F4 and F5 of self-concept.

Table 6
Alteration of Students' Self-Concept

Self-concept	At the time of moving on to 12th grade		At the time of graduation		F-value df(1,201)
	Mean	SD	Mean	SD	
F1, attitude toward self-discipline	3.34	0.63	3.55	0.66	10.85**

F2, attitude toward career development	3.31	0.95	3.68	0.87	17.85**
F3, attitude toward professional skill development	3.44	0.72	3.47	0.79	0.27
F4, attitude toward social values	3.85	0.69	3.86	0.77	0.04
F5, attitude toward self-monitoring	3.22	0.84	3.34	0.92	2.05

Effect of Self-Concept on Career Consciousness

Based on the data of the above-mentioned, we tried to indicate the effects of students' self-concept on their career consciousness using the multiple regression analysis. The analysis was carried out, as a dependent variable of the mean score of career consciousness and as an explanatory variable of the average score of self-concept.

*[data score] = [mean score at the time of moving on to 12th] – [mean score at the time of graduation]

The results of this analysis showed a significant multiple correlation coefficient (R=0.45~0.71, p<.01, see table 7). Based on this result, we made a path-diagram as standard on 0.2 or more in order to grasp of effects (see fig.1). From this path-diagram, we could point out four interesting conclusions. These are as follows;

1. Firstly on the whole of path-diagram, we confirmed that the all factors of self-concept have an effect on the factors of career consciousness. Therefore, we suggested that it is important for students' career consciousness to promote the self-concept.
2. According to details of the analysis, we found out that "F1, attitude toward self-discipline" is the most influential among the four factors of career consciousness. We could see the importance of students' self-discipline. "Attitude toward self-discipline" relate to self-discipline in social life, which includes manners, confidence and human relations. From this result, for 12th grade students, we suggested that promoting self-discipline influences career consciousness.
3. Also, we confirmed that "F4, attitude toward social values" was strongly influences "F3, activeness of information-gathering for the future". However based on table 5, there are hardly any changes in the mean score of F3. "Attitude toward social values" means consciousness of students' value and attitude towards the importance of the rules of a school and society. Therefore, we consider that students learn the rules and values of the society by actively learning and by experiencing the school life of a technical high school. These experiences are related to the activeness of information-gathering. Thus, this finding is very important in order to promote the whole of career consciousness.
4. On the other hand, the relationship between "F3, attitude toward professional skill development" and "F1, future visualize" showed a negative value. This result means when students' consciousness of "professional skill development"

increases, the consciousness of "future view" decreases, and this is a problem. It is thought that the reason is because the students often think about the difficulties of engineering jobs when they are job-hunting. Therefore, students' current self-image about professional skill development is negatively related to the future self-image in their mind.

Table 7
Effects of Self-Concept on Career Consciousness (Multiple Regression Analysis)

Dependent variable (self-concept)	Standardized partial regression coefficient (self-concept)					Multiple correlation coefficient	F-Value df(5,195)
	F1 Self-discipline	F2 Career development	F3 Professional skill development	F4 Social values	F5 Self-monitoring		
F1, future visualize	0.18**	0.55**	-0.21**	0.22**	0.05	0.71**	42.53
F2, confidence for decision-making	0.26**	0.08	0.06	0.04	0.38**	0.59**	22.15
F3, activeness of information-gathering for the future	0.12	0.07	-0.04	0.51**	-0.03	0.57**	20.52
F4, positive identity	0.40**	0.01	-0.09	-0.09	0.25**	0.45**	11.35
F5, human relations	0.20*	0.02	-0.11	0.45**	0.06	0.52**	16.19

N=202 **p<.01 *<.05

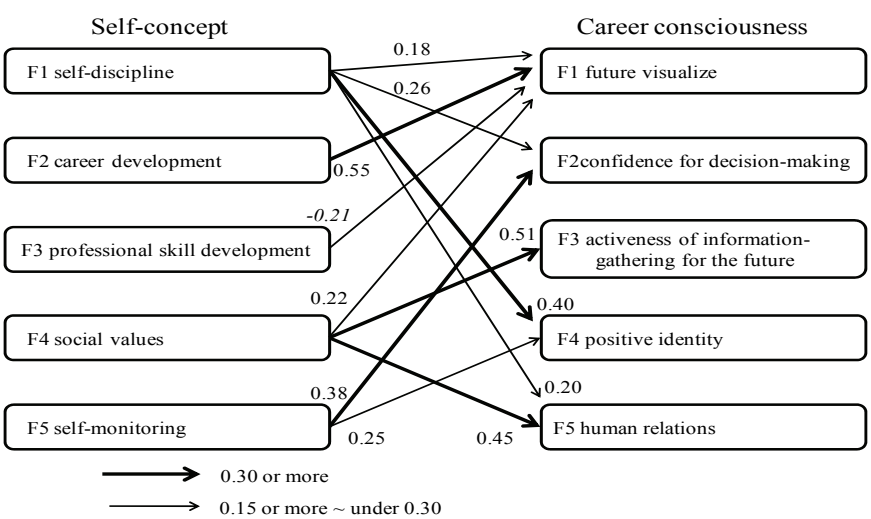

Figure 1. Effects of Self-Concept on Career Consciousness (Path-Diagram)

Conclusion

From these results, we could show the tendency of career consciousness to heighten in twelfth grade students. On the other hand, by the multiple regression analysis, we found that self-concept plays an important role in promoting career consciousness in twelfth grade students. In addition we suggested that career counseling plays an important role in promoting the self-concept.

However, we found out that "F3, attitude toward professional skill development" has a negative effect on career consciousness. This factor relates to the knowledge and specialist skills including knowledge, skills and motivation. It is expected that students will learn the specialized knowledge and skills with their own willingness in his/her major courses of technical high school. Moreover a lot of students will get a job in the manufacturing industry. Consequently, we expected that "F3, attitude toward professional skill development" would have a positive effect on career consciousness. However this result is different than what we expected. It is thought that the reason for this is because the students think a lot about the difficulties of an engineer when students are hunting a job. Therefore, students' current self-image on professional skill development is negatively related to future self-image in their mind.

Finally, for future study purposes, we would take note of the changes of the student' career consciousness and self-concept after graduation. In addition, we would also tackle the above-mentioned problems.

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Implementation of Work Process Based Curriculum in Technician Institute

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ABSTRACT China's rapid economic development triggered a strong demand for highly skilled personnel. In recent years, the MoHRSS organized a number of research projects to explore the model to training highly skilled personnel which both was consistent with China's reality and met the requirements of occupational development. This paper documents one of the key projects, Research on technician training model and curriculum development. The research content includes: i) the occupational characteristics and developmental laws of technicians; ii) designing of work process based curriculum and shaping of teaching-learning process in technician training; iii) learning resources development; iv) implementation of school-enterprise cooperation; v) policy recommendations to technician training.

KEYWORDS technician institute, professional task, learning field, work process based curriculum

Introduction

Triggered by the rapid economic development and industrial restructuring, there is a strong demand for highly skilled personnel in China. By the end of 2009, the number of "highly skilled personnel" (gao ji neng ren cai) in China had reached 11.725 million, including 2.807 million technicians and 0.982 million senior technicians (National Bureau of Statistics 2009). However, the supply of highly skilled personnel still cannot meet the needs of economic development in terms of either quality or quantity. After entering the new century, the Chinese government has begun to take the building of highly skilled personnel as its most crucial strategy of national development. In 2006, the State Council issued a document entitled Views Concerning Further Strengthening the Work on Highly Skilled Personnel (zhong fa [2006] No. 15), emphasizing that we "should improve the system of highly skilled personnel education and training, and speed up the training of a great number of rationally-structured highly skilled personnel with high qualifications". In recent years, the Ministry of Human Resources and Social Security (hereinafter referred to as "MoHRSS") has organized a number of research and pilot projects so as to establish a highly skilled personnel training system and training model that is not only in accordance with China's reality but is also

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consistent with the principles of professional development. As part of these research programs, this paper focuses on Technician Institute's (ji shi xue yuan) work process based curriculum development as well as the pilot projects designed for this purpose.

Genesis of the Technician in China

Technicians (ji shi) are an important part of highly skilled personnel who has been playing a significant role in enterprises' production and business process. The establishment and development of the professional group "technician" in China has historically gone through four stages.

- Granted by the government. The professional title of technician was established in 1950s when technician was an honorary title given by the Chinese government for excellent skilled workers. The system was once stopped in the period of the so called "Cultural Revolution" (1966-1976).
- Assessed within sector administrations and appointed by companies. The technician appointment mechanism gradually restored after the "Cultural Revolution". In 1987, the former Ministry of Labour and Personnel issued the Provisional Regulations on the Implementation of Technician Appointment Mechanism (lao pei zi [1989] No. 3), providing that technician qualification assessment should be organized by sector administrations and those who have obtained the certificate will be appointed by the companies they are working for. This policy turned out to have played an important role in encouraging skilled workers to acquire knowledge and improve their skills.
- Public Assessment. In 1999, the former Ministry of Labor and Social Security issued the Notification of Carrying Out Pilot Program of the Management of Public Technician Assessment (lao she ting fa [1999] No. 25), regulating the implementation of a public technician assessment mechanism in Beijing and the other 16 cities, thus realized the transition of technician assessment mechanism from enterprise management to public organization and management. This mechanism has been implemented across the whole nation since 2000 (Chen, Chen & Zhao 2009).
- Trained by expanding vocational training schools/colleges. At the beginning of this century, a number of gut Skilled Worker Schools (ji gong xue xiao) were upgraded to technician institutes. In 2006, the former Ministry of Labor and Social Security issued Views Regarding Encouraging Technician Institutes to Speed Up Training Highly Skilled Personnel (lao she bu fa [2006] No. 31). From then on, technician institutes have formally begun their exploration of new models of school-based technician training.

In the above phases, technicians' qualifications, means of obtaining the title/certificate as well as ways of technician training tend to be different in specific stages and people's perception of "technician" has also been changing accordingly. With the development of technology and re-construction of work organization, technicians are no longer traditional craftsmen for a single task, instead, they have gradually been required to fulfill tasks that are more comprehensive and that involve work organization

and management, hence the new terms "new technician", "modern technician" and so on. The access to the title of technician has shifted from through enterprise appointment, which was quota-bounded to public authorized assessment, which is quota-free. This has not only broadened the growth path of skilled workers and motivated the young workers to further improve their competence, but also resulted in a rapid quantitative expansion of technicians. Apart from offering a new possibility for the training of highly skilled personnel, the new training pattern of technicians in school-form has also posed a challenge on vocational education. How to train high quality technicians that meet the real needs of industries through a school-based training system? That is a major research topic of this study.

The Actual Situation of Technician Training

Currently in China, training of highly skilled personnel is mainly provided by vocational schools/colleges, training centers, and enterprises. Targeting different groups, they either provide systematic school education and training, or provide pre- and/or in-service training. Among them, vocational schools/colleges have become the main force of systematic training of large numbers of highly skilled personnel thanks to their advantages in number, geographic extension, didactical concepts, training methods and training experience. Therefore, the former Ministry of Labor and Social Security issued Essentials of the Eleventh Five-Year Plan for the Establishment of a Highly Skilled Personnel Training System (lao she bu fa [2007] No. 10), pointing out the need to "establish and improve the highly skilled personnel training system which has the sector administrations and enterprises as the main body, vocational schools/colleges the basis, and schools-enterprises cooperation the tie, …".

However, due to the lack of real work practice, both the occupational community and the educational circles took a skeptical position as to whether the vocational schools/colleges would be able to train qualified technicians. The MoHRSS issued Views on Issues concerning Encouraging Higher Skilled Worker Schools and Technician Institutes to Speed Up Highly Skilled Personnel Training (lao she bu fa [2006] No. 31), putting forward a proposal to train "pre-technicians", and further suggesting two schooling systems for this purpose:

- to recruit vocational school graduates who have already obtained higher-level vocational certificate to learn for not less than two years;
- to recruit high school graduates to learn for at least 4 years for some knowledge based occupations.

The MoHRSS also issued for Highly Skilled Personnel Training (lao she bu fa [2006] No. 33), in which it put forward some detailed requirements such as "to strengthen research on the growth patterns of highly skilled personnel with emphasis on school-enterprise cooperation models, mentoring system, credit system and other ways of training, so as to provide theoretical support for practice", "to promote specialty setting and curriculum reform, develop and improve the syllabus", and so on.

Since 2006, technician institutes started to enroll students for technician training programs and generally set the aim of training "pre-technicians"; however, there wasn't a mutual understanding as to what constituted a pre-technician.

Research Questions and Methodology

Research Questions

This paper attempts to analyze a technician's occupational features and growth patterns. It takes for example six specialties1 like CNC-technology etc. to discuss the training models on the basis of current vocational education system and policies in technician institutes and the curriculum design and planning using work process based approach.

Methodology

The specialized course teachers collected literature about industry development, occupational standards on the national and sector level etc. The main research methods adopted are as follows.

Comprehensive Work Analysis

In consideration of the unpredictable and innovative nature of a technician's work, we did not choose the popular DACUM approach for job analysis. We used the BAG (Berufliche Aufgabe) approach and Expert Worker Workshop (EXWOWO) instead to find out about the "developmental tasks", i.e. professional tasks in a skilled worker's occupational development, and further describe them (Kleiner et al 2002; Reinhold et al 2003; Zhao 2009). Expert workers come from enterprises which locate in the area where the majority of the graduates find their jobs and which are representative in terms of size, equipment, products and organization forms.

Sector Study and Enterprise Surveys

The legwork of occupation analysis in this research project is sector study and enterprise surveys through interviews and on-site observation. The objectives are:

- to better understand the needs of industries and enterprises, as well as the school's current situation so as to determine the specialty focus and training objectives;
- to select expert workers for the EXWOWO;
- to get familiar with the actual situation of the industries and enterprises.

In order for an effective quality control over the investigations, a set of instrumental forms are designed, e.g. Occupational Development Stages and Key Incidents, Record Sheet for Interviews of Technicians, Institute's Authorities, speeches Students and Graduates Questionnaire, etc.

1 The six specialties are CNC-technology, automotive repair, maintenance electrician, welding, toll fitter, animation design a nd production.

Research Activities

The research project started in 2007 and took three years, involving 11 technician institutes2 in six provinces, as well as Beijing Normal University as "wissenschafliche Begleitung". The following activities have been accomplished during the period.

Teacher Training

Since the teachers don't have any experience in curriculum development, training sessions on curriculum development methods are offered to them so as to build a common methodological understanding and a work platform for curriculum development.

Sector Study and Enterprise Investigations

This stage involves a) collecting information about the current situation of the industry sectors and enterprises, their specific needs for the workforce, and their products/services; b) selecting expert workers for the EXWOWO.

Implementation of EXWOWO

Expert workers for each occupation domain are collectively interviewed in form of EXWOWO so as to decide on professional tasks with description.

Establishing Curriculum Framework

This refers to the work of designing specific courses on the basis of the professional tasks, identifying learning content and preparing teaching-learning documents and materials.

Pilot Teaching

Ever since the training year of 2008, the institutes have introduced the newly developed curricula to their technician courses. Teaching-process observation and seminars have been organized to explore ways of teaching-learning organization and evaluation.

Summary and Reflection

The summarizing the project and composing reports about it was done in 2010. The project has already passed the specialist evaluation organized by the MoHRSS.

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2 Beijing Industrial Technician Institute, Beijing Shougang Technician Institute, Guangzhou Technician Institute of Communi cation, Zhongshan Technician Institute, Guangzhou Technician Institute of Public Utilities, Qingyuan Technician Institute, Ha ngzhou First Technician Institute, Shanxi Technician Institute of Metallurgy, Chengde Technician Institute, Anhui Huaibei Co al-Mining and Electricity Technician Institute, Zhejiang Technician Institute of Road Construction.

Research Findings

Occupational Features and Growth Patterns of Technicians

Although the status of technician has been officially established for many years, there is no clear definition, specification or understanding of a technician's occupational features, career development and growth pattern (Ministry of Labour and Social Security, 2001). To ensure a sustainable development of technician training, it is necessary to analyze technician's occupational features with special focus on those who are working under the condition of modern industry.

Occupational Profile and Role of Modern Technicians

The project conducted research in several relative developed regions like Shanghai and Guangdong on the technicians' occupational features in the process of new industrialization. The results show that technicians are specialists who are engaged in the production and business process within the first line. They are experienced and higher skilled, therefore, they not only have to work independently, but also have to communicate with other teams or departments responsible for design, maintenance, etc. in the work. They are the core force for the production and usually play a leading role in a complex work process.

The survey showed that some technicians also do production organization, train and guide lower-level workers, and thus work as the backbone of their enterprise in maintaining normal production and business process, improving production efficiency and realizing technology transfer. Technicians' role and responsibilities vary according to the size of enterprises. In a large enterprise, technicians tend to be responsible for work and business process optimization, technical problems resolution in production, advice and recommendations to management and engineers basing on their on-site experience. In the small and medium size enterprises, beside this, they play a special role between the market, employers and employees, which means they have to (help) determine the business' direction or service development according to the market needs.

In the modern industry, technicians' role displays a trend of diversification and there have been a variety of types such as so-called "operational", "technology-based", "versatile", "knowledge-based" technician. Operational technicians in traditional manufacturing industry are still artisans, technology-based technicians' major responsibility is to organize daily production and handle issues concerning new technology, versatile technicians are multi-skilled specialists in technical innovation, whereas knowledge-based technicians are supposed to work out complex business problems independently (He & Song, 2006). Compared with traditional technicians, the "modern technicians" or "new technicians" demonstrate their value in "professional thinking" and "complicated communication", their work involves both "difficult production -skills innovation- skills passing-on" and "on-site management - technology guidance - technical maintenance - training organization" (Chen, 2008).

Technicians' Characteristics

The study finds out that in modern manufacturing, technicians demonstrate four common characteristics.

- They are in a continuous process of practice. Technicians grow up in continuous production/service practice from low- and medium-level workers to the present higher-level workers. Long-term practice has enabled them to not only have a deep understanding of their work place, related work places, the entire production process and organizational structure, but also accumulate systematic and abundant experience.
- They have strong competence to adapt. As a result of technological development and organisation restructuring, technicians are often faced with changing tools, work methods, materials, product designs and production concepts. Those who have managed to become good technicians are workers who are able to quickly adapt to these changes.
- Their job usually calls for spirit of innovation. Technicians need to improve or create new tools, develop new technology, participate in new product trial production or technology development activities, therefore, they should have a strong competence of innovation.
- They love their jobs and are good at reflection and learning. Technicians generally show a high degree of sense of occupational identity as well as enthusiasm for their work. They owe their growth to self-motivated learning, wise reflections and courageous challenges, which continuous to provide ladder for their further success.

Technicians' occupational features and career development patterns provide essential grounds for technician training curriculum development. The above study shows that modern technicians must have a higher comprehensive professional competence, including not only functional competence for their post, but also processual competence and shaping competence for complex tasks (Rauner et al, 2008). Therefore, technician training programs should embrace the following:

- learning objectives of comprehensive professional competence development, which focus on career development within one domain and cultivate expert workers who are capable of accomplishing professional tasks;
- the combination of professional competences with professional identity, so as to help learners gain the knowledge needed in their work, and connect their personnel skills and talents to their career development;
- the integrative learning model of theory and practice, which facilitates students' overall perception and reflection of the tasks, process and environment in real world of work;
- task-oriented learning situation, in which students work through the complete work process and construct the meaning of learning as well as their social identity in the enterprise (Zhao, 2009).

A Summary of the Achievements in Curriculum Development

According to the idea of work process based curriculum, with reference to the existing national qualification standards, curriculum frameworks of five specialties have been developed in the project. They include the following:

- Curriculum framework: A complete curriculum has been designed for the growth path of lower level, middle level skilled workers, higher level skilled workers and technician according to the professional tasks. It is a comprehensive curriculum aiming at cultivating comprehensive professional action competence. Its content consists of professional knowledge and skill as well as all the elements of work process such work objects, methods, tools, work organization, work requirements (Asia-Link Project DCCD, 2007).
- Curriculum standard: Curriculum standard is a programmatic document for curriculum implementation. It specifies for each subject its learning objectives, the content and means of learning in different "learning situations", and thus regulating and guiding teaching-learning activities.
- Assignments: Assignment is a situation-based teaching plan concerning the organization, procedure and approach of working-learning tasks (Richter & Meyer, 2004).
- Leit-text: Leit-text would be used by the students in self-controlled learning, mainly including learning objectives, task description, guiding questions and learning- process assessment etc. (Zhao, 2009).

Training Patterns

The technician institutes participated in the project have made the following attempt to train pre-technicians.

Patterns of Enrollment and Schooling

Patterns of enrollment and schooling of the pre-technician grogram include the following three:

- Selecting outstanding students from middle-level skilled worker program. Students from middle-level skilled worker program can enter the technician program after they have obtained middle- and higher-level skilled worker certificates.
- Recruiting those who have obtained higher-level skilled worker certificate. Select from graduates of higher-level skilled workers program or those who have obtained higher-level skilled worker certificate according to their performance. The schooling is for 2 years.
- Enrolling high school graduates. Enroll high school graduates with a schooling of 4 years. These students should study for and obtain higher-level skilled worker certificate before they go on to the pre-technician program.

Implementation Forms

In general, these institutes have explored various ways of "cooperation between school and enterprise" (xiao qi he zuo) and "integrating learning and work" (gong xue jie he) to improve the quality of training.

- Teaching projects coming from actual tasks in work process. According to the principles of professional tasks, real work tasks (such as production and technology transfer project) are chosen and designed as "teaching projects in school" and "internship projects in enterprise" for different stages of the training. For example, in Beijing Industrial Technician Institute, 49.1% of its teaching hours consist of teaching projects basing on real work tasks whereas internship projects account for 31.4% of the all teaching hours.
- Setting up an integrated learning environment for theory and practice. The institutes have regrouped their learning resources and established integrated work-learning stations, while strengthening teacher training. As a result, both the hard and soft resources of the institutes have greatly improved.
- Implementing small group teaching with block course arrangement. Traditional big groups of 40 students cannot meet the higher requirement of individualized learning of technician students. The institutes have replaced them with small group with block form, i.e. focusing on the learning of one project during one period.
- Building a team of both full-time and part-time teachers. Technician training has placed enormous demand on the teaching faculties. The project institutes have managed to build teams of both professional teachers and technicians and engineers from enterprises. A dual tutorial system is in practice, where school teachers and business mentors jointly guide students' project learning.

Reflections and Recommendations

The research project has developed a technician training curriculum and has conducted relevant trial teaching, thus has explored new approaches to technician training in vocational institutes. With a grasp of the direction of the vocational training curriculum reform, the project has following innovative features.

"Learning Field" Has Set a Reference Curriculum Model for Technician Training

The curriculum is in line with technicians' growth patterns and reflects the occupational features of higher skilled personnel

The newly developed curriculum embraces the professional tasks which reflect the process of vocational growth "from novice to expert". The learning tasks include both production tasks and those which involve technological innovation, technical guidance and production organization and management. They are not only in accordance with a technician's occupation features, but have also achieved the goals of "integration of the

development of cognitive competence with the establishment of vocational identity" and "the combination of theoretic leaning with practical study" (Zhao, 2009).

The curriculum has changed the traditional discipline-based learning and realized the integration of working and learning

The project has developed a learning field curriculum which integrates both work and learning, and changed the traditional discipline-based learning (Jiang 2003). The corresponding teaching-learning process and organization will help vocational institutes improve their work-based learning and play a reference role for vocation institutes' curriculum reform.

The new curriculum is suitable for school-enterprise collaborative training

The new curriculum has its learning content from occupational practice while its teaching is conducted in a student-centered approach with specific work situations in consideration. The working-learning situations are easy found in enterprises or build in school, and thus suitable for school-enterprise collaborative training.

New Teaching Materials Provide Samples for Learning Resources Development

The project has developed a series of teaching materials such as learning field description, Leit-texts etc., providing applicable and practical auxiliary materials for students' self-controlled learning. These materials are quite different from the traditional textbooks in function and form. For instance, they put emphasis on the comprehensive learning content and an open learning process, and thus providing valuable samples for new learning resources development.

Trial Training Has Implemented New Learning Organization and Provided Experience for Vocational Training Reform

In the trial training program, the project institutes organize their training process according to the action-oriented principle with emphasis on a complete work process of information, plan, decide and evaluation and have achieved good results3. In addition, they also attempt to improve learning environment and evaluations. All these have provided experience for vocational institutes' vocational training reform.

Provide Systematic Method for Work Process Based Curriculum Development

The project tries occupational analysis methods such as sector study and EXWOWO, develops procedures and templates of learning fields description, learning situation design, assignment and Leit-text design, etc. and thus have provide direct for work-process curriculum development.

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3 For example Students from Beijing Shougang Technician Institute won team gold medal in the DVS Welding Skills Com petition held in 2009 in Essen, Germany. Their success was an explicit result of the new curricula.

Provide Inspiration for the Establishment of Technician Training Model

The project institutes are in different regions and industry sectors, and vary in size and training characteristics. Therefore, the technician training model explored and experience accumulated in the research are quite representative and can be borrowed by other vocational institutes for the establishment, implementation and management of their technician training. Besides, the project has helped the project institutes to build a leading team of teachers, and facilitated the institutes' curriculum and teaching reform as well.

However, there are still some problems need to be further explored in the new curriculum.

- First, there has not been widely recognized in the economic circles as to whether vocational institutes can successfully training technicians in school-form.
- Secondly, the new curriculum is very demanding in teachers' teaching competence and work experience and tends to go beyond their current level. The insufficiency of the teachers' competence and experience has greatly hindered to curriculum implementation.
- Thirdly, the majority of the institutes still lack a stable and effective school-enterprise cooperation mechanism.
- Fourthly, the new curriculum calls for changes in the traditional reaching arrangement and training administration system (e.g. separation of theoretic teaching administration from practical teaching administration, etc.), and will result in changes in training evaluation and teachers' performance assessment, and so on. This has posed a great challenge to the current vocational education and training administration system.

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Factors for Students' Enrolling in Practical Arts Programs

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ABSTRACT This study was to explore factors for junior high students' enrolling in practical arts programs. Six hundred and ninety subjects were selected from 15 junior high schools in Pingtung County through a randomly sampling process. Six hundred and eighty three of the selected subjects validly responded to the survey (94.5%). Mean scores and standard deviations were employed to describe factors for enrolling in practical arts programs indicated by the respondents. Statistics of t-test was used to examine differences between male and female respondents, and also between urban and rural respondents. According to analyses, "interests", "career development", "curiosity", "program reputation", and "peer relationships" were recognized as important factors. However, students' reflections on the importance of the factors were inconsistent. Meanwhile, females emphasized significantly more on "seniors" and "brothers/sisters" while males on "peer relationships". Urban students stressed significantly more on "curiosity" rather than rural students.

KEYWORDS career decision making, practical arts programs, junior high schools, career development.

Background

In the early 1990s, the Taiwanese government implemented a project of practical arts education at the junior high school level (Ministry of Education, 1993). Under the project, practical arts programs were developed for those 9th grade students who are not interested in academic learning (Ministry of Education, 2001). The programs have been providing basic practical training, and preparing students for the labor market. It has also been expected that students can acquire successful learning experiences in addition to traditional academic disciplines. Therefore, students may not escape from schools before their graduation (Ministry of Education, 2001).

The project of practical arts education was amended in 2002. The new project emphasizes the concept of career education. In general, junior high students are supposed to have sufficient opportunities for career awareness and exploration through a series of designed learning activities (Department of Education, Taipei City Government, 2004). Junior high schools were encouraged to cooperate with vocational senior high schools in developing particular practical arts programs which benefit

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students' career development (Department of Education, Taipei City Government, 2004; Teng & Lin, 2006).

In order to further benefit those students who are feeble in academic learning, a type of new practical arts programs was proposed in 2007. The new practical arts programs substitute skills training for part of such academic disciplines as mathematics, science, and second language (Central Region Office, Ministry of Education, 2008). The skills training comprises, in general, two or three kinds of vocational skills such as culinary skills, baking, cosmetology, restaurant service, horticulture, design basics, industrial electronics, mechanical drawing, and so on (Ministry of Education, 2011).

In recent years, more than thirty thousand junior high students enroll in practical arts programs every year (Shen & Ko, 2008). However, little information reveals how the programs are implemented and what the programs have accomplished. This study was therefore to investigate the motives and/or reasons which urge students to enroll in the programs. It is expected that results of this study may contribute to further research on the practical arts programs.

Objectives

(1) To explore factors for junior high students' enrolling in practical arts programs.
(2) To compare the differences between male and female respondents' reflections on factors for enrolling in practical arts programs.
(3) To compare the differences between urban and rural respondents' reflections on factors for enrolling in practical arts programs.

Research Design

Subjects

The population of this study was junior high students in Pingtung County. Six hundred and ninety subjects were selected from 15 junior high schools through a randomly sampling process. Six hundred and eighty three of the selected subjects responded validly to the survey (94.5%). Among the validly responded subjects, 334 are male and 318 are female.

Table 1
Numbers of the Subjects, Respondents, Invalid and Valid Questionnaires

	Males		Females		Total	
	n	%	n	%	n	%
Subjects	350	50.7	340	49.3	690	
Respondents	348	50.4	335	48.6	683	99.0
Invalid	14	2.0	17	2.5	31	4.5
Valid	334	48.4	318	46.1	652	94.5

The Instrument

For implementing the investigation a "Career Decision Making Questionnaire" was developed by the researchers. Based on literature review and panel discussion, 15 questions on the questionnaire concentrated on such two categories as person and cause.

Five-point Likert scale was used in the questionnaire for measuring reflections of the subjects concerning the importance of the identified factors. Five-point indicates very important, four-point important, three-point average, two-point unimportant, and one-point very unimportant.

Data Analyses

Descriptive statistics such as mean score and standard deviation were employed to explore the distribution of respondents' reflections for each of the identified factors. Also, t-test was used to examine the differences between the mean scores of male and female respondents, and also of urban and rural respondents.

Findings

The respondents revealed a different manner on factors of the person and cause categories. Mean scores of all factors of the person category described by respondents are lower than 3, range from 1.84 to 2.90, while mean scores of some factors of the cause category are higher than 3. However, respondents' reflections are quite decentralized. Standard deviations of all factors range from 1.19 to 1.56.

The most important factors identified by the respondents include "interests" (M = 3.91, SD = 1.25), "career development" (M = 3.86, SD = 1.21), and "curiosity" (M = 3.55, SD = 1.27). "Program reputation" (M = 3.16, SD = 1.29) and "peer relationships" (M = 3.06, SD = 1.43) have the comparatively higher mean scores. Mean scores of the other factors are lower than 3. Meanwhile, "parents" (M = 2.20, SD = 1.37), "parents' decisions" (M = 2.08, SD = 1.26), "brothers/sisters" (M = 1.93, SD = 1.32), and "relatives" (M = 1.84, SD = 1.19) have the lowest mean scores.

Comparisons between Male and Female Respondents

Mean scores of the identified factors described by male respondents range from 1.80 to 3.96. Only five of them were recognized as important factors. To examine their mean scores, "interests" (M = 3.96, SD = 1.28), "career development" (M = 3.83, SD = 1.23), "curiosity" (M = 3.53, SD = 1.28), "peer relationships" (M = 3.19, SD = 1.45), and "program reputation" (M = 3.11, SD = 1.35) have the comparatively high scores. The mean scores of "seniors" (M = 2.09, SD = 1.44), "relatives" (M = 1.85, SD = 1.17), and "brothers/sisters" (M = 1.80, SD = 1.21) are the lower scores of the identified factors.

In terms of the female respondents, mean scores of the identified factors range from 1.82 to 3.88. Mean scores of four factors are higher than 3. They are "career development" (M = 3.88, SD = 1.18), "interests" (M = 3.85, SD = 1.22), "curiosity" (M

= 3.58, SD = 1.27), and "program reputation" (M = 3.21, SD = 1.21). The mean scores of "brothers/sisters" (M = 2.08, SD = 1.42), "parents' decisions" (M = 2.01, SD = 1.21), and "relatives" (M = 1.82, SD = 1.21) are the lower scores of the identified factors.

Mean scores of male respondents on "seniors" and "brothers/sisters" were found significantly lower than those of female respondents ($t = -2.39$, $p < .05$; $t = -2.67$, $p < .05$). The mean score of male respondents on "peer relationships" was also found significantly higher than that of female respondents ($t = 2.28$, $p < .05$). Table 2 demonstrates mean scores, standard deviations, and results of t-test in details. Figure 1 shows reflection distributions of male and female respondents.

Table 2
Mean Scores, Standard Deviations, and t Values of the Identified Factors by Gender

	Males		Females		t	Total	
	M	SD	M	SD		M	SD
Persons							
Peers	2.89	1.52	2.92	1.42	-.23	2.90	1.47
Professionals	2.59	1.53	2.58	1.60	.04	2.58	1.56
Teachers	2.35	1.52	2.31	1.39	.40	2.33	1.45
Seniors	2.09	1.44	2.36	1.43	-2.39*	2.22	1.44
Parents	2.19	1.34	2.22	1.40	-.24	2.20	1.37
Brothers/Sisters	1.80	1.21	2.08	1.42	-2.67*	1.93	1.32
Relatives	1.85	1.17	1.82	1.21	.32	1.84	1.19
Causes							
Interests	3.96	1.28	3.85	1.22	1.17	3.91	1.25
Career development	3.83	1.23	3.88	1.18	-.57	3.86	1.21
Curiosity	3.53	1.28	3.58	1.27	-.43	3.55	1.27
Program reputation	3.11	1.35	3.21	1.21	-.99	3.16	1.29
Peer relationships	3.19	1.45	2.93	1.40	2.28*	3.06	1.43
Notable suggestions	2.91	1.32	2.89	1.29	.23	2.90	1.30
Academic defects	2.60	1.35	2.46	1.29	1.35	2.53	1.32
Parents' decisions	2.14	1.30	2.01	1.21	1.33	2.08	1.26

* $p < .05$

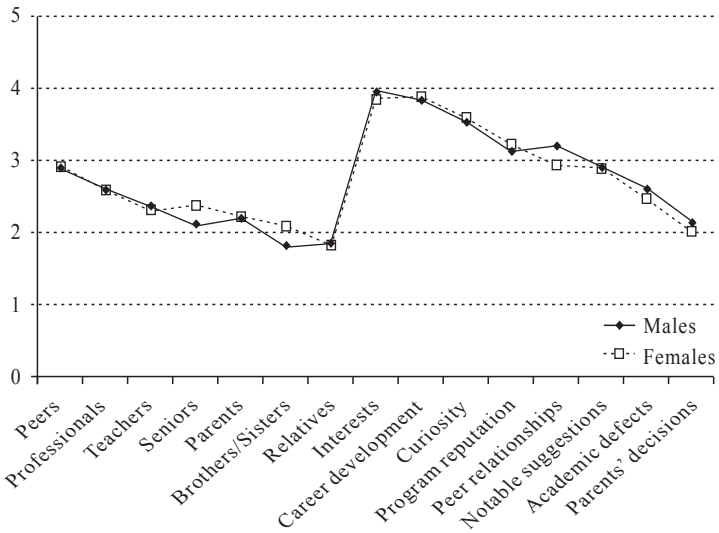

Figure 1. Reflection Distributions of Male and Female Respondents

Comparisons between Urban and Rural Respondents

Mean scores of the identified factors indicated by urban respondents range from 1.85 to 4.00, rural respondents range from 1.79 to 3.86. Respondents' reflections are again quite decentralized. Standard deviations range from 1.16 to 1.62. Such categories as "interests" (M = 4.00, SD = 1.21; M = 3.86, SD = 1.27), "career development" (M = 3.96, SD = 1.18; M = 3.80, SD = 1.22), "curiosity" (M = 3.83, SD = 1.21; M = 3.41, SD = 1.28), and "program reputation" (M = 3.24, SD = 1.26; M = 3.12, SD = 1.30) were given comparatively high scores by both urban and rural respondents. Mean scores of "parents' decisions" (M = 2.10, SD = 1.35; M = 2.06, SD = 1.22), "relatives" (M = 1.93, SD = 1.25; M = 1.79, SD = 1.16), and "brothers/sisters" (M = 1.85, SD = 1.32; M = 1.98, SD = 1.32) are the lower scores of the identified factors. Meanwhile, the mean score of urban respondents on "curiosity" was found significantly higher than that of rural respondents ($t = 4.02$, $p < .05$). Table 3 describes mean scores, standard deviations, and results of t-test in details. Figure 2 demonstrates shows reflection distributions of urban and rural respondents.

Table 3
Mean Scores, Standard Deviations, and t Values of the Identified Factors by Geographic Groups

	Urban		Rural		t	Total	
	M	SD	M	SD		M	SD
Persons							
Peers	2.75	1.50	2.98	1.45	-1.87	2.90	1.47
Professionals	2.61	1.62	2.57	1.53	.28	2.58	1.56
Teachers	2.25	1.41	2.37	1.48	-1.02	2.33	1.45

Seniors	2.16	1.45	2.26	1.44	-.79	2.22	1.44
Parents	2.33	1.40	2.14	1.35	1.68	2.20	1.37
Brothers/Sisters	1.85	1.32	1.98	1.32	-1.15	1.93	1.32
Relatives	1.93	1.25	1.79	1.16	1.44	1.84	1.19
Causes							
Interests	4.00	1.21	3.86	1.27	1.44	3.91	1.25
Career development	3.96	1.18	3.80	1.22	1.67	3.86	1.21
Curiosity	3.83	1.21	3.41	1.28	4.02*	3.55	1.27
Program reputation	3.24	1.26	3.12	1.30	1.15	3.16	1.29
Peer relationships	2.93	1.51	3.13	1.38	-1.61	3.06	1.43
Notable suggestions	2.94	1.42	2.88	1.25	.58	2.90	1.30
Academic defects	2.60	1.33	2.50	1.32	.97	2.53	1.32
Parents' decisions	2.10	1.35	2.06	1.22	.39	2.08	1.26

* $p < .05$

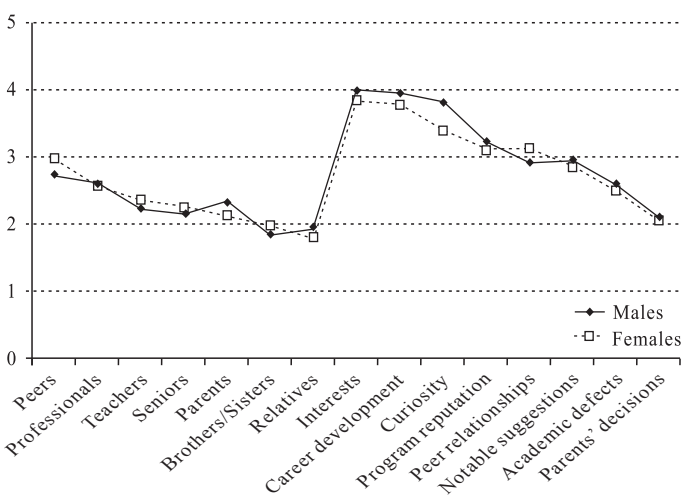

Figure 2. Reflection Distributions of Male and Female Respondents

According to results described above, none of factors in the person category was recognized as an important factor for junior high students' enrolling in practical arts programs. It seemed students tend to neglect opinions from their family members when deciding to enroll in practical arts programs. Even parents could hardly influence students' decisions. Some factors of the cause category were reported to have effects on students' enrolling in practical arts programs. They are interests, career development, curiosity, program reputation, and peer relationships. However, students' reflections on the importance of the factors were inconsistent.

Male students were more concerned about peer relationships than female students. In other words, male students had higher possibility to enroll in a practical arts program for friendship sake. Meanwhile, urban students were more concerned about curiosity than rural students. It is reasonable that urban students tend to participate in a practical arts program simply because of curiosity. They might quit the program because they were not curious about it anymore.

In conclusion, enrollment is an indicator for the success of practical arts programs. Program planners should pay more attention to students' interests. Those programs in which students are interested may reach a higher enrollment. Secondly, adequate advertisements contribute to students' understanding on what a practical arts program is and how the program is implemented. Even reputation of practical arts programs is necessary to be promoted through all possible channels. It is hoped that more junior high students can be appropriately enrolled in practical arts programs. Therefore, the students can acquire successful learning experiences, explore their aptitudes, and learn practical skills for future development.

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Development of the System for Accreditation of the Companies Providing Field Training Leading to Employment

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ABSTRACT The purpose of this study was to develop accreditation system for small and medium enterprises (SMEs) providing the field training leading to employment for unemployed youth. For the development of the accreditation system, preliminary document was collected through a literature review, and by assessing the demands of 116 human resources personnel at SMEs and the data sampled from 73 specialized vocational high school teachers. The validity of the accreditation system was ensured via an expert committee.
The main results of this study were as follows: The purpose of accreditation field training companies should be to secure necessary human resources for SMEs by employing highly skilled technical staffs. To do this, SMEs suitable for field training must be accredited. The accreditation process involves completing an accreditation application, undergoing an evaluation, and then offering support for accredited companies. During the accreditation application stage, the requirements to undertake field training should be minimized so as to allow many companies to participate in. The accreditation evaluation should consist of four areas: field training programs, field trainee employment and post-training management, field training environment and business competence, and previous performance of the field training. In order for excellent SMEs to participate in actively and for the field training operation to be well-operated, there should be support and incentives for accredited companies.

KEYWORDS specialized vocational high school, field training, accreditation system, internship

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Introduction

The government created a new provision related to field training companies accreditation, on April 4, 2011, as part of the Small and Medium Enterprise Human Resources Support Act ([legislation no.10445]), and in so doing provided the legal foundation to certify and support SMEs suitable to operate field training operations. This provision aims to encourage the introduction of an excellent technical and skilled labor force for SMEs, and to spread a positive image of SMEs while expanding the link between training and employment (SMBA, 2011; Ministry of Legislation, 2011). According to the new law, a field-based study must provide an accreditation plan and, there should be specific enforcement ordinances or regulations pertaining to the law.

Field training is similar to supervised occupational experience and internships, providing an opportunity to apply knowledge taught in school to industrial fields (Kang et al., 1998; Kang & Lee, 2003; Bailey, Hughes, & Barr, 1998; Hoerner & Wehrley, 1995). This plays an important role in the youth labor market and in boosting employment, and it supports the creation of the labor force needed in industries (Park et al., 2010; Na et al., 2009). Thus, many governmental agencies, such as the Ministry of Education, Science and Technology (2010), the Ministry of Employment and Labor (2011) and the SMBA (2011a, 2011b, 2011c, 2011d) operate various projects to link youth employment and SMEs. Opportunities for supervised occupational experience are also expanding for specialized vocational high school students to the foster labor force based on field techniques and skills.

However, the numbers of supervised occupational experience and internships in industries do not meet the levels of demand, and various government projects are having difficulty in selecting suitable field training companies. Industries are, to supervised occupational experience trainees, assigning simple and repetitive tasks rather than offering true field education. Moreover, they are not linking the program to proper employment (Kim, Yoon, Kim, & Choi, 2010; Na & Kim, 2010; Na, Chang, Jo, Song, 2007; Park, Baek, Choi, Chang, & Kim, 2010; Jyung et al., 2009; Jung, 2002). At schools, supervised occupational experience lost its importance when it was made an option, rather than mandatory activity, after the Normalization of Supervised Occupational Experience at specialized vocational High School Act (May,'06). Also, schools that run various government projects supporting supervised occupational experience are having difficulty finding and linking to businesses suitable for supervised occupational experience for the education and employment of students.

To solve these problems, first, proper field training companies must be discovered and supported to provide field education and employment for students of specialized vocational high schools. In particular, as a new provision pertaining to field training business accreditation was added to Small and Medium Enterprise Human Resources Support Act, thus building the foundation to discover and support SMEs that can operate excellent field training programs. Therefore, in order to ensure the creation of feasible plans to certify field training enterprises, validity must be secured through study. Based on this enforcement ordinances and relevant regulations must be prepared for the

enforcement of the Small and Medium Enterprise Human Resources Support Act. This will ultimately help solve youth unemployment and human resources issues for SMEs by enabling proper companies to run field training programs for students at specialized vocational high schools and to link the program to employment after graduation.

Based on this necessity, the purpose of this study was to develop accreditation system for SMEs providing the field training leading to employment for unemployed youth. To do this, the demands of industries concerning the accreditation of the company were analyzed and the accreditation system was developed based on these demands.

Review of the Literature

Concept and Purpose of Field Training

Although the term field training is not at present commonly used, it is similar to terms such as supervised occupational experience, an internship, work experience, a field trip, and an apprenticeship (Na et al., 2011). However, field trips focus on indirect observations rather than actual experience and work experience based on short-term work-related experience, which is different from field training which concentrates on actual field activities.

Particularly, in this study, field training refers to "supervised occupational experience, internship or similar program, operated through various policy projects to facilitate labor force provision to companies and to improve the youth employment rate." This is based on the 'Small and Medium Enterprise Human Resources Support Act ([legislation no.10703, enactment enacted May 24, 2011]). Therefore, short-term business experience that is not linked to employment or special lectures by an industry specialist provided on a field trip or at school are not considered to be field training as it is defined in this study.

Generally, the purpose of supervised occupational experience and internship is to secure field-based human resources and provide an opportunity to apply the theoretical knowledge taught at school to industry fields, in order to combine actual work and study (Kang et al., 1998; Kang & Lee, 2003; Oh & Kim, 2008; Na & Kim, 2010; Na et al., 2007; Bailey, Hughes, & Barr, 1998; Callanan & Benzing, 2004; Hoerner & Wehrley, 1995; Reeve & Gallacher, 2005; Slotte & Tynjaelae, 2003). In this study, field training has the same purpose and direction as general supervised occupational experience and an internship, but mainly aims to secure the necessary labor force for SMEs and to improve the field work ability of the introduced labor force, considering the purpose of the relevant provision. Ultimately, it focuses on improving the competence of SMEs, youth employment, and the imbalance in the national human resources supply.

Legislation Relating to Field Training

Legislation directly mentioning the field training of specialized vocational high school students exists in a few provisions of the 'Small and Medium Enterprise Human Resources Support Act'. However, thus far, related provisions were suggested in, as

supervised occupational experience, in the 'Promotion of Industry Education and Industry-Academy Cooperation Act ([legislation no.10907], [enacted Jan. 26, 2012])' and 'Vocational Training Promotion Act ([legislation no. 10776], [enacted Jun. 7, 2011])' and in a few others. Also, more specific regulations of how supervised occupational programs are run are specified in 'Regulations on Operating Supervised Occupational Experience for Schools (Ministry of Education & Human Resources Development order no. 620)' (Ministry of Legislation, 2011).

Current legislation related to field training is based on supervised occupational experience provided in industries. It defines the requirements for the program, preparation instructions, the industry contract, and the criteria for approval of the study credits for the supervised occupational experience, Especially, in terms of the accreditation of a field training business, no specific enforcement ordinances have been written, although the 'Small and Medium Enterprise Human Resources Support Act ([legislation no.10703, enacted May 24, 2011]) includes a list of accreditation criteria, procedures, and funding requirements for the development and operation of a training program. The 'Vocational Training Promotion Act ([legislation no. 10776], [enacted Jul. 7, 2011])' suggests a number of provisions related to selecting companies for supervised occupational experience, and the 'Regulation on Operating Supervised Occupational Experience for Schools (Ministry of Education & Human Resources Development order no. 620)' stipulates how to evaluate the suitability of a business for supervised occupational experience and sets several operation criteria, but none of these acts specifies the accreditation of field training enterprises. Therefore, there is a need for legislation that stipulates more specific items related to the accreditation of field training companies compared to those suggested in 'Small and Medium Enterprise Human Resources Support Act'.

Government Policy Projects Relating to Field Training

There have been various government policy projects relating to field training, and, those pursued in 2011 include those known as the 'Basic Plans for Industry Field training for Specialized vocational high schools' (Ministry of Education, Science and Technology, 2010),; the 'Small and Medium Enterprise Youth Employment Internship' (Ministry of Employment and Labor, 2011),; 'Small and Medium Enterprise Experience Training Project' by SMBA' (SMBA, 2011c),; ' Industry-Academy Customized Human Resource Cultivation Project' (Lee, 2009; SMBA, 2011a),; 'Small and Medium Enterprise Human Resource Package Project'(SMBA, 2011d); 'Small and Medium Enterprise -focused Specialized Vocational High School Project '(SMBA, 2011b) The analysis results of field-training-related policy projects and suggestions for the accreditation of field training enterprises are as follows.

First, current field-training-related projects are generally limited because they do not consider the type of business when recruiting and selecting participating companies. The 'Specialized Vocational High School Business Field training Project' and the 'Small and Medium Enterprise -focused Specialized Vocational High School Project' allow any SMEs defined by legislation to apply, and the 'Industry-Academy Customized Human

Resource Cultivation Project' allows manufacturing and knowledge-based companies who are part of the employment Insurance plan to apply. However, because different types of companies can have different requirements when operating field training programs, the accreditations and evaluations of field training companies must classify companies into different types.

Second, when selecting companies for supervised occupational experience, the projects used various evaluation criteria for supervised occupational experience programs, business competence, and the willingness of management to foster their labor force. Most policy projects when, selecting company, evaluated the suitability of the supervised occupational experience program and the level of business competence. Apart from these basic requirements, the Small and Medium Enterprise Experience Training Project included the management's willingness to participate in a supervised occupational experience program and the suitability of the plan for the program. Therefore, the evaluations for field training company accreditation also need to reflect various criteria and standards related to an improvement of the students' actual work ability and employment through field-training.

Third, thus far, field-training-related policy projects evaluated companies based on submitted documents, which limits the evaluation to certain areas. The 'Industry-Academy Customized Human Resource Cultivation Project' selects participating companies by allowing local SMBAs to review and notify companies when they submit an application document, while the Human Resource Employment Package Project selects applicants with the Korea Federation of companies by reviewing and approving of the documents submitted by associations and organizations. However, to determine the suitability for an actual field training operation, both these documents and a field evaluation are required. Therefore, it is necessary to consider including a field examination in the evaluation process for field training company accreditation.

Fourth, companies that participate in field-training-related policy projects receive support and incentives from various government departments and institutions. Different types of support and incentives encourage many companies to participate. The 'Industry-Academy Customized Human Resource Cultivation Project' incentivizes companies to participate with incentives reflecting the characteristics of the Ministry of Education, Science and Technology, municipal/provincial education offices, the Military Manpower Administration and other organizations. Therefore, it is necessary, for a field training company accreditation system as well, to enable accredited business to receive financial and institutional support from various government departments.

Research Method

Literature Review

A literature review served to preliminary document with which to develop the accreditation system of the companies providing field training leading to employment.

The concept and purpose, related legislation and regulations, and government policy projects of field training were checked. To do this, the study included the policy information of the SMBA,; the Ministry of Education, Science and Technology,; the Ministry of Employment and Labor, and so on; field-training-related research reports and the internal data of the Korea Technology and Information Promotion Agency for companies,; the Korea Research Institute for Vocational Education & Training,; legislation data from the Ministry of Legislation for the Korea Law Service Center; information from the websites of business and field-training-related institutions'; and various statistics databases.

Survey

To suggest the development the system for accreditation of the companies providing field training leading to employment, a survey was conducted from June 4, 2011 to June 24, 2011, with 1,100 human resource personnel in companies providing field training and 188 field training teachers at specialized vocational high schools. They had participated in the Industry-Academy Customized Human Resource Cultivation Project, the 'Small and Medium Enterprise Experience Training Project', and the 'Skilled Labor Mentoring Project,' supported by the SMBA. Among those who received the questionnaire, 116 human resource personnel and 73 Specialized Vocational high school teachers responded (reply efficiency 10.5%, 38.8%). The questionnaire was composed of 1) requirements for field training applicant companies, 2) criteria for accreditation evaluation, 3) classification of the accreditation grade, 4) support and incentives for accredited companies.

Expert Committee

The purpose of the expert committee is to understand the demands pertaining to the accreditation of field training companies and to determine the face validity of the accreditation system drafted by the research team. The committee was made up of nine people, including the CEOs of reputable SMEs, renowned craftsmen, skilled technicians, and field training instructors. The expert committee reviewed the validity of the plan developed by the research team after considering the demands of the industries, in an intensive meeting held on June 10, 2011. The detailed discussion included the following topics: 1) requirements for field training applicant enterprises, 2) criteria for accreditation evaluations, 3) classification of an accreditation grade, 4) support and incentives for accredited companies, and other pertinent issues. Thus, the validity of the system for accreditation of the companies providing field training by the research team was ensured by the experts.

Demands for Accreditation of the Companies Providing Field Training

Demands Pertaining to the Requirements for Accreditation Application

The field experts, including the SME CEOs and the skilled craftsmen, suggested that SMEs applying for field training business accreditation need to have the necessary level of competence to operate a field training program. Evidence of basic competence included being subscribed to Employment Insurance and Industrial Accident Compensation Insurance, and experiencing no insolvency or default (via the conclusion of the expert committee). In addition, demands as discussed by the field experts regarding limitations on business types and, the history, size, the company's own field training program, facilities, and equipment showed the following results:

First, regarding the business type, many expressed the opinion that this should be classified in the application and accreditation process. Among human resources personnel, 82 percent (91), and 87.3 percent of field training teachers (62) responded that accreditation should be based on the classification of the business type. Specifically, the SME CEOs and the craftsmen reported that it is necessary to classify business types during the application and accreditation process because different companies can require different sizes, amounts of revenue, and other factors suitable for field-training.

The majority said that only companies with more than a certain number of years of operation should be allowed to apply (human resources personnel, 61.4%, and teachers, 52.8 percent). Regarding the minimum standard for the number of years, the human resources personnel suggested 'five years' (36.2%) or 'three years' (30.4%), and teachers '5 years' (47.2%) and '3 years. However, the SME CEOs and craftsmen thought that three years would be appropriate so that many SMEs would participate, thus minimizing application limits.

The majority responded that the size of the companies (number of employees) should exceed a certain scale (human resources personnel, 66.7%, teachers, 87.5%). As for the minimum size, human resources personnel gave various answers including 'five employees' (13.6%) and '50 employees' (21.6%). The CEOs and craftsmen said it would be appropriate to apply different standards to different business types because they do not require the same program size for field training and so that many SMEs would be eligible to participate.

Regarding enterprises' own field training programs, most of the human resources personnel (74.3%) responded there should be no limitation on this, but most of the teachers (69.0%) held that it should be limited to companies with their own field training program. As for field training facilities and equipment, most human resources personnel (63.2%) reported that there should be no limitation on this measure, but the majority of the teachers (64.8%) said the opposite. The CEOs and craftsmen suggested that while it may be, better to lower the limitation barriers at the application stage, for effective field-training, the company' own field training program, the facilities, or the equipment can be important and that these should be reflected in the evaluation process.

Demands Pertaining to the Criteria for Accreditation Evaluation

The draft of the evaluation criteria for field training companies (see Table 1) is composed of the following: 1) the field training program, 2) links to employment and post-training management, and 3) the field training environment and business competence level along with detailed criteria. The evaluation criteria of the field training program is composed of suitability of purpose and field, suitability of training contents, the suitability of the schedule, the suitability of the operation plan, and the suitability of the in-company monitoring and management plan. The evaluation criteria pertaining to the link with employment and post-training management is composed of the suitability the of plan to link with trainee employment, the degree of excellence in the company's history of trainee employment, the suitability of the post-training management of trainees, and the degree of excellence in the history of the post-training management of trainees. The evaluation criteria for field training environment business competence is composed of the existence of training specialists (e.g., craftsmen, technicians), the suitability of the training instructor recruitment plan, the assignment of training personnel, and the suitability of training facilities and equipment. In general, the human resources personnel and teachers suggested these criteria take into consideration proper items and techniques.

In general, the respondents demanded, regarding the drafted evaluation criteria, to add a link to field training and employment, the willingness of the company's head to foster talents, and the safety of the field training trainees. The human resources personnel demanded differentiated field training programs (2), a post-training management plan (1), a field training program renewal process (1), and additional points granted for a high employment rate (1), the teachers suggested the addition of employment of field training trainees (3), personality education (1), safety education (1), statements of work hours for field training trainees, and other such factors. The SME CEOs and craftsmen suggested the 'willingness of the company head to foster talent and the suitability of the strategy,' 'classes and credits for field-training,' 'wages (compensation) for trainees,' and a 'specific plan for linking to employment beyond simple field-training'.

Meanwhile, some suggested the omission or modification of certain criteria, and that the 'existence of training specialists (craftsmen, technicians, etc.) should be changed to 'accredited trainers or experienced field workers' considering the circumstances of the SMEs.

Demands Pertaining to the Classifying the Grades of Accreditation

Regarding the classification of grades of field training business accreditation, most of the human resources personnel and teachers were against such a classification, instead preferring a single accreditation. Among the human resources personnel, 77.3% (85) recommended that companies achieving a certain grade or over in the evaluation (single grade) could be accredited. 59.7% the teachers agreed (37) (see Table 1).

Table 1
Demands for Classifying Accreditation Grades

Classification	Human resources personnel		Teacher	
	Frequency (People)	Proportions (%)	Frequency (People)	Proportions (%)
1) Certify enterprises achieving over a certain grade in their evaluation	85	77.3	37	59.7
2) Grading in accreditation	25	22.7	25	40.3
Total	110	100.0	62	100.0

Note 1: Human resources personnel: n = 116, Missing Value = 6, Valid Data= 110
2: Teacher: n = 73, Missing Value = 11, Valid Data = 62

Meanwhile, among the human resources personnel who responded that there should be grading in the accreditation process, when asked about proper grading standards, seven (46.7%) answered that it should be based on the company's history in field training operation (linked to employment, reemployment, post-training management, and other aspects.) and five (33.3%), reported that the company's own competence (e.g., status, circumstance, size, revenue). should be considered.

Demands Pertaining to the Support for Accredited Companies

Regarding the level of demand for support and incentives for companies accredited for field-training, the human resources personnel recommended 'various tax benefits,' 'designation and priority for industrial alternative services,' and 'financial support for wages for field training trainees,' as top priority items. The second most important demands were 'support for unemployment Insurance,' 'designation and priority for industrial alternative services,' and 'priority in government-supported participation in projects'' (see Table 2).

Table 2
Demand for Support and Incentive for Accredited Companies

Ranking	Demand for support and incentive	Frequency (People)	Proportions (%)
First	① Various tax benefits	42	36.8
	⑥ Designation and priority for industrial alternative services	24	21.1
	⑦ Financial support for wages for field training trainees	24	21.1

Second	② Support for Employment Insurance	21	18.4
	⑥ Designation and priority for industrial alternative services	21	18.4
	③ Priority in government-supported Participation in projects	17	14.9
	⑦ Financial support for wages for field training trainees	17	14.9

Note 1: n = 116, Missing Value = 2, Valid Data = 114
2: Proportions means that respondents who select the item
3: Conducted a survey is in response to ① ~ ⑧:
① Various tax benefits, ② Support for employment insurance, ③ Priority in government-supported participation in projects ④ Financial support for wages for field training trainees, ⑤ Financial support for field training program management, ⑥ Designation and priority for industrial alternative services, ⑦ Financial support for wages for field training trainees, ⑧ Secure support for field training trainers

The demands from project SME CEOs and craftsmen in project expert committee can be divided into support during field training operations, support after the employment of field training trainees, and other aspects. First, support during field training operations included compensation for field training instructors, the improvement of field training facilities and equipment, and financial support for wage and transportation fees for field training trainees should be offered. However, the committee agreed that the burden of wages and transportation fees for trainees should be shared by the government and by the companies. Regarding the level of support after the employment of field training trainees, designation as an 'industrial alternative service provider' was regarded as the most important type of support, followed by support for the wages of employed field training trainees and lower interest rates for bank loans. Other demands included providing differentiated incentives depending on the results of the companies' field training operation, such as the link to employment after the graduation of the field training trainees.

Thus, support and incentives for companies accredited for field training are very important to encourage excellent SMEs to participate. Moreover, they should be based on the priorities in each area, as shown in this study. Specifically, there should be a strategic approach to the support and incentives for accredited companies, as it is linked to the government budget and to the improvement of the system, after taking the priorities into consideration.

Accreditation System for the Company Providing Field Training

Purpose and Direction of Accreditation

Consideration of the purpose of introducing the accreditation system for field training companies is important when preparing the accreditation system. First, based on the purpose of the addition of a provision related to field training companies (SMBA,

2011), there are several specific purposes for certifying field training companies. First, it is to secure the labor force required for SMEs by employing an excellent technical and skilled labor force through field-training. Second, it is to pass on important skills and techniques to future workers at SMEs and to improve their actual work ability. Third, it is to spread and improve a positive image of SMEs by operating field training programs at excellent SMEs.

Directions in the accreditation of field training companies rely on determining what level of companies will be accredited for field-training, The direction is essential for suggesting accreditation system later. Directions in accreditation can largely include three options, depending on the level of the accredited companies. The first involves certifying SMEs with excellent field training operation capabilities (option 1). The second involves, certifying SMEs that satisfy the minimum requirements for a field training operation. The third concerns certifying medium-level SMEs (option 3 – a compromise between option 1 and 2). In particular, in order to achieve the purpose of introducing accreditation system for field training companies, it is important to certify remarkable companies so as to set an example for field training provided by SMEs; given that it is the first time, the system must draw the attention and participation of SMEs by means of a simple and clear process. Therefore, the first option, certifying excellent SMEs, appears to be most appropriate.

Accreditation Process

The accreditation process for field training companies concerns the overall process of the accreditation system. It is composed of 1) the application, 2) the evaluation, and 3) the support and incentives for accredited companies (see Figure 1). The application refers to the stage during which SMEs wishing to participate in the accreditation system submit the relevant documents. Later, an accreditation committee is organized and the evaluation panel reviews the documents and the site before transferring the final evaluation to the committee. The accreditation committee finally decides upon the accreditation based on the support range according to the budget and the evaluation, and provides support and incentives for accredited companies. However, accreditation can be cancelled if, during the post-accreditation evaluation, the companies do not perform the planned field training or if they have inadequate results.

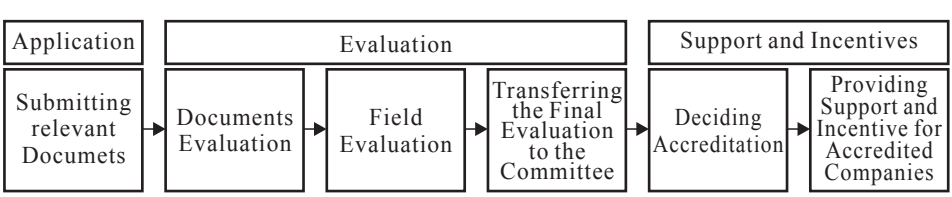

Figure 1. Accreditation Process

Requirements for Accreditation Application

For the accreditation of field training companies, first, they should receive application document from SMEs who want to apply to the application system. Although it is advisable that qualified companies apply for the system, for an efficient accreditation program, it is necessary to minimize the limitations affecting those qualified for the minimum requirements so that various companies can participate. In other words, applicants must be companies which are suitable for the basic purpose of the accreditation system and which meet the minimum requirements to operate a field training program. Therefore, the requirements can be divided into legal requirements and general companies requirements as follows (see Table 3).

Table 3
Requirements for Accreditation Application

Classification	Requirements
Legal requirement	- Manufacturing and knowledge-based companies (This is covered in Article3 of the 'Special act on support for human resources of SME') - SMEs are subscribed to Employment Insurance and industrial accident compensation insurance - No-Closure, No-default Business
General company requirements	- SMEs three years or more since the foundation of the business - SMEs are experienced in field-training ※ This includes participation in government-business related field-training

Note: It is necessary to introduce further standards such as the most recent three years average sales.

Accreditation Evaluation

The accreditation evaluation for field training companies meant to set the level of companies that qualify as 'excellent SMEs suitable for field training' as defined in the accreditation directions. Another intention is to set, evaluation standards when selecting companies that satisfy the standards. First, the level of companies accredited for field training will be determined by an accreditation committee based on the evaluation results and the budget constraints; however normally, they are companies that have good working environments and competence for field-training. An absolute score or a relative ratio can be considered as an option for selecting such companies, but it is necessary to certify all companies that satisfy absolute criteria in order expand the number of accredited companies. For instance, with 1,000 as the full score, around 800-900 could be the minimum number of points.

Although various accreditation criteria can be considered when selecting excellent companies suitable for field training, they first need to have basic requirements and

abilities to operate field training programs. In this study, based on the accreditation evaluation for field training companies was derived the four areas and detailed criteria: the field training program, the link to employment and the post-training management of trainees, the good field training environment and suitable level of competence, and the previous performance of the field training (see Table 4).

Table 4
Evaluation Criteria for Accreditation

Area	Criteria
Field training program	- Suitability of purpose and field for field training program - Suitability of education and instruction contents for field-training · Inclusion of personality education (* mandatory) · Inclusion of life instruction (optional) - Suitability of plan for recruiting and selecting field training trainees · Cooperation with schools, expected number of selected applicant · Final selected trainees (*within 20 percent of permanent employees) - Suitability of the plan for a for field training program · Field training terms for each time (e.g., minimum 1-3 months) · Field training operation period during the year - Suitability of the employment plan for field training trainees · Plan for employment in the same field partly recognized (*within 50 percent of the total number of trainees to be employed)
Employment and post-training management	- Suitability of post-training management plan for field training trainees - Suitability of training personnel required to pass on techniques and skills in industrial fields ※ The personnel should be qualified or experienced in field training instruction (* over five years of experience)
Field training environment and business competence	- Suitability of facilities and equipment for efficient field training operation · Accommodation provided for trainees from other regions - Suitability of human resource development and management, welfare, and other aspects of the company of the company
Previous performance of the field training	- Excellence of the record of employing field training trainees (employment in the same field is also recognized) - Excellence of the record of managing field training after training

Note: Basic requirements must be fulfilled at the application stage.

Support and Incentives for Accredited Companies

Various types of support and incentives need to be provided in order to induce the active participation of excellent SMEs suitable for field training and to expand employment to SMEs. In this study, support and incentives for companies accredited for field training were divided into securing trainees, field training operations, support after the employment of field training trainees, and other incentives for accredited companies (see Table 5).

Table 5
Support and Incentives for Accredited Companies

Area	Support and incentives
For securing field training trainees	- Support linked with to relevant schools (departments) - Information about trainees based on business types
For field training operation	- Financial support for preparing the field training program (e.g., facilities, equipment, special education space, field training program development costs.) - Financial support for field training operations (e.g., instructor fees, textbooks, and practice fees) - Support for wages and compensation for field training trainees (e.g., can apply for separate projects of SMBA) - Support for compensation for field training education and instruction personnel
After employment of field training trainees	- Additional points for designation as an industrial alternative service provider - Support for wages after the employment of field training trainees (e.g., aid for about six consecutive months of employment) - Support for continuing education and financial aid after the employment of field training trainees
Incentives for companies accredited for field training	- Priority when participating in government-related projects (e.g., SMBA, Ministry of Employment and Labor) - Priority for various types of policy-related financial support from the government - Tax benefits - Lower interest rates on loans from banks

Conclusion and Suggestion

Conclusion

This study assessed the demands regarding the accreditation of companies suitable for field training programs from human resources personnel, CEOs, craftsmen in various fields, and teachers who have supervised occupational experience at specialized vocational high schools and developed accreditation criteria for companies to operate field training programs for unemployed youth based on the Small and Medium Enterprise Human Resources Support Act.

An accreditation system for field training companies must, by employing excellent technical and skilled labor personnel in SMEs through field training, secure the labor force required for SMEs, improve the actual work ability of future workers, and strengthen the positive image of SMEs. In order to achieve these goals, many excellent SMEs should be able to participate in field training after they are certified as capable of the excellent operation of a field training program. The accreditation process can be

composed of the application submitting, an evaluation, and support for accredited companies, considering the general accreditation process of the companies.

During the application stage, companies which meet the minimum requirements for field training will need to be given the opportunity to apply, so as to attract many companies. Therefore, it is advisable to allow SMEs that are subscribed to Employment Insurance and industrial accident compensation insurance, survived three or more years since their foundation and are experienced in field training to apply. Accreditation evaluation criteria were developed in order to accredit excellent SMEs suitable for field training programs among the applicants. They include four areas: their own field training program, a link to employment and the post-training management of field training trainees, a suitable field training environment and good business competence, and a history and records of field training, along with detailed criteria. The main evaluation standards should include personality education in the field training program, a minimum of one month of field training, suitability the plan for the employment of field training trainees, the willingness of the CEO to foster talent, the existence of field training personnel, and a history of employment and post-training management of trainees. Also, various types of supports and incentives must be provided to ensure the active participation of excellent SMEs in the field training accreditation system, and for the expansion of employment in SMEs through field training.

Suggestion

For the effective operation of an accreditation system for field training companies, there should be continuous efforts and support from relevant institutions. The following are suggestions for the future promotion by the SMBA, an accreditation institution, and SMEs participating in accreditation system.

The SMBA first needs to embrace the methods developed in this study with respect to an accreditation system for field training companies in the enforcement ordinance of the Small and Medium Enterprise Human Resources Support Act' and prepare and institutionalize 'regulations of the operation of a field training business accreditation project (tentative name)'. Second, the association must support further studies of a specific utilization and company evaluation method for accreditation of field training companies. Third, the SMBA needs to create and operate a 'support center for field training operations (tentative name)' for the operation and monitoring of the field training program and instruction materials, in universities and at other educational institutions.

The accreditation institution must actively promote the accreditation system and encourage SMEs to participate in the program for the continuous expansion of the accreditation system. Second, the institution needs to enhance access to the system by providing comprehensive information on accredited companies and accreditation results to future trainees, parents, teachers and other stakeholders. Third, as the system becomes more established, the application and evaluation criteria must be differentiated according to the business type. Fourth, after the system becomes more established, the support and incentives will need to be differentiated depending on the training and employment results of the companies.

Finally, companies participating in the accreditation system should make efforts in

order to receive excellent trainees and link them to employment through field-training. Secondly, by actively expressing demands relating to the accreditation system to the SMBA or other relevant institutions, companies must help to improve the accreditation system for SMEs constantly. Third, companies need to create organic links between prior education at schools and actual field training through cooperation with schools.

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Factors that Influence Job Satisfaction among Vocational Teachers in Malaysia

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ABSTRACT The effect of globalization on human capital development is decisive. A country that lacks the means to compete in global market is often left behind. Competitiveness is based on a country's capacity to add value to global economic products, services and processes. A key contributor in this regard is the knowledge and skills of the workforce. The education and skills of the workforce will be the key competitive weapon for the 21st century. Thus, the purpose of this study was to explore the career satisfaction among vocational teachers in the selected technical secondary schools in Malaysia. The aspects that were studied include the job domain, the work environment and the flow of information within the organization. A sample of 101 vocational teachers in Technical Secondary Schools in Negeri Sembilan and Malacca was selected. The research instrument consisted of a set of questionnaire adapted from the Job Descriptive Index (JDI). The questionnaire contained three sections: 1) profile of the respondents, 2) job satisfaction, and 3) open-ended questions. Descriptive statistics in the forms of frequency, percentage, mean, and standard deviation were used for the data analysis. The study found that the environmental and job factors are the aspects which bestow job satisfaction to vocational teachers while the aspect of flow of information within the organization was rated low. Therefore the technical school administrative needs to improve the flow of information in the organization especially between the administrators and vocational teachers in order to enhance job satisfaction of vocational educators.

KEY WORDS job satisfaction, vocational teachers, human resource development, job descriptive index, Malaysia

Introduction

Human resource development should be given considerable attention because it is the most important element in ensuring that a country is competitive and resilient, especially in this era of globalization and K-economy. In Malaysia, various initiatives were planned and carried out to sustain its economic competitiveness. A critical challenge that faces post-modern society is to attain full employment and economic growth in the global economy. The future of Malaysia's competitiveness depends on the

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knowledge and skills of its workforce. With the advent of K-economy and globalization, the need for a strong human capital has never been so critical. Thus, human capital development is the main thrust of Rancangan Malaysia Ke-9 (2006) [the Ninth Malaysia Plan (2006-2010)].

Human capital development emphasizes on the acquisition of knowledge and skills in critical areas such as science and technology. Equally important is the enculturation of positive attitudes, civilized mind, outstanding integrity, and high ethical values. In terms of education and training, focus is given to the technical education and skills training. A relatively high amount of public allocation of Ringgit Malaysia 493 million (USD 140 million) was apportioned to enhance students' enrolment in technical, vocational schools and skills training institutions in the Malaysia Ninth Plan (Rancangan Malaysia Ke-9, 2006).

Job satisfaction is the instinctive desire of every employable individual. People who achieve the high state of job satisfaction may be highly motivated and productive in assisting his or her organization to achieve its goals. An employee upbeat attitude is important not only to himself or herself but also to the organization. Job satisfaction can be defined as positive or negative appraisal toward one's career. Job commitment, on the other hand, is an employee's attitude towards the whole organization (Baron & Greenberg, 1990). An employee high commitment towards organization may arise from the acceptance of the organization's values as well as one's willingness to work for the organization.

The study conducted by Schaefer(1986) shows that employees with high job satisfaction have better well-being and longevity than those who are not satisfied with their profession. Job satisfaction also has an impact towards an individual's life condition outside the working hours. Another study shows that the teaching profession is one of the most stressful careers (Kyriacou, 1987). Other studies also show that a prolonged work stress could affect teachers' mental and emotional health and in the long run could affect teachers' teaching quality (Antoniou, 2000; Borg et al., 1991; Kyriacou & Sutcliffe, 1978; Manthei & Solman, 1988; Travers & Cooper, 1996). Abdul Fuad (1997) suggests that the increase in teachers' workload and responsibility should commensurate with the recognition as well as the rewarding system in the career. However, the teaching profession is still perceived as "second-class job", though various efforts have been taken to improve the image of the teaching profession.

The concept of job satisfaction has a close association with teachers' commitment towards the organization and thus influences the effectiveness of the implementation of a program (Avalos & Haddad, 1981; Borne, 1972). Kottkamp(1990) states that the quality of teaching is influenced by various factors such as job satisfaction and teacher's attitudes. Kottkamp(1990) also believes that job satisfaction is positively associated with job performance and commitment towards the organization. Literature shows that teachers' satisfaction is also influenced by the form of communication practiced by their principals (Sim, 1994). Further, an organization may shoulder the cost incurred because of the uncommitted employees. Absenteeism, operational delays and accidents occur in the workplace may be due to employees dissatisfaction. Malaysia's National Institute of

Occupational Safety and Health (NIOSH) reported that accident rate in work place and compensation payments are on the rise (Buletin NIOSH, 2006). This may reflect the predicaments faced by employees in the workplace which might include stress-related problems.

Problem Statement

This purpose of this study was to determine the job satisfaction among vocational teachers teaching in Malaysian public technical secondary schools in the states of Malacca and Negeri Sembilan. Specifically, the research objectives are as follows:

(1) To identify the level of job satisfaction among vocational teachers
(2) To identify the environmental factors which influence the level of satisfaction among vocational teachers
(3) To identify the level of flow of information within the organization which influences job satisfaction of vocational teachers

Theoretical Framework

The theoretical framework in this research was based on Herzberg et al.(1959) dual theory. The dual elements in this theory are hygiene and motivation. The fundamental factors (hygiene factors) include salary, job status, relationship with other employees and employer as well as employees' safety and welfare. Motivation factors, on the other hand, include recognition and the opportunity for promotion. The Herzberg et al.(1959) dual theory states that if these factors are fulfilled positively, the individual's job satisfaction would increase. The independent variables in this present study were gender, age, levels of education, experience, income and marital status. The dependent variables consisted of job satisfaction, workplace environment and flow of information within the organization. Results of past research generally show that job satisfaction increases with age. For the teaching career, past research found that the main factors contributing to job dissatisfaction among teachers include workload, not-so-good relationship with the administrators and limited opportunity for promotion.

Methodology

This study utilized a survey research with limited number of technical schools. Mohd Majid(1998) states that a survey research aims to collect information about the variables which are studied in a natural setting. The population for this study was all vocational teachers in Malaysia. However, the research sample consisted of 101 teachers selected randomly from six technical schools in two states in Malaysia, i.e., Negeri Sembilan and Malacca. A pilot study was conducted to validate the research

instrument comprising of a set of questionnaires. The instrument was adapted from the Job Descriptive Index (JDI) inventory by Smith et al. (1989).

The questionnaire contains three sections namely A, B and C. Section A contains 10 demographic items. Section B consists of 60 items related to teachers' job satisfaction. The sub-domains for Section B include 20 items for Job Satisfaction; 20 items for Environmental Factor; and 20 items for the Flow of Information within the organization. The items in Section B use 5-point Likert scale [1=strongly disagree; 2=disagree; 3=not sure; 4=agree and 5=strongly agree]. Section C comprises of three open-ended questions. The data collected from Section C were analysed qualitatively based on the emerging themes (Miles & Huberman, 1994). The pilot study involving 70 vocational teachers was conducted to determine the validity and reliability of the instrument. Several drafts of the instrument were reviewed by a panel of experts. Revisions were made based on their comments and recommendations. The internal consistency reliability for the instrument using Cronbach's Coefficient Alpha and was estimated to be $\alpha = 0.84$. Therefore, the final version of the instrument was considered to possess an adequate degree of content and face validity and internal consistency reliability.

Results

Background of the Respondents

Table 1 shows the six Technical Secondary Schools [SMT] from Negeri Sembilan and Malacca that were selected in this study. The schools are Sekolah Menengah Teknik [Technical School] Ampangan, Sekolah Menengah Teknik Juasseh, Sekolah Menengah Teknik Port Dickson, Sekolah Menengah Teknik Kuala Klawang, Sekolah Menengah Teknik Melaka Tengah and Sekolah Menengah Teknik Dato' Seri Mohd Zin. A total of 101 respondents, 82 male teachers(81.2%) and 19 female teachers(18.9%) whom are teaching vocational subjects in Technical Secondary Schools. Based on the ethnic group of the respondents, 94 teachers(93.1%) are Malay, 5 teachers(5%) are Chinese, one(1%) Indian and one(1%) from other race. Looking into their marital status, 91 respondents(90.1%) are married and 10 respondents(9.9%) are still single.

Table 1
Demographic Information of the Respondents

Demography	Frequency (f)	Percentage (%)
School:		
1. SMT Ampangan	17	16.8
2. SMT Juasseh	17	16.8
3. SMT P. Dickson	15	14.8
4. SMT K. Klawang	17	16.8
5. SMT Melaka Tengah	17	16.8
6. SMT DSM Mohd Zin	18	17.8

Gender:		
1. Male	82	81.2
2. Female	19	18.9
Ethnic group:		
1. Malay	94	93.1
2. Chinese	5	5.0
3. Indian	1	1.0
4. Other	1	1.0
Marital status:		
1. Married	91	90.1
2. Unmarried	10	9.9

Table 2 shows distribution of respondents based on their academic qualifications that are 63 respondents(62.4%) possess Sijil Pelajaran Malaysia [SPM] or Malaysian Certificate of Education [MCE] or Sijil Pelajaran Malaysia Vokasional [SPMV], 24 respondents(23.8%) have Diploma, 5 respondents(5%) hold STPM and Bachelor's Degree while another 4 respondents(4%) have other academic qualifications. The respondents also obtained different professional qualifications such as 92 respondents (91.2%) have Certificate in Teaching, 5 respondents(5%) hold post-degree Diploma and 4 respondents with other qualifications. Frequencies of respondents based on their specializations are 23 teachers(22.8%) in Automotive, 17 teachers(16.8%) in Building Construction, 13 teachers(12.9%) in Electronics, 11 teachers(10.9%) in Electrical, 8 teachers(7.9%) in Commerce, 8 teachers in Air-Conditioning and 8 teachers(7.9%) in Workshop Machinery Practices. The sample of this research was divided into three age groups that are 58 respondents(57.4%) in the range of 30-45 years old age group, 28 respondents(27.7%) below 30 years old and 15 respondents(14.9%) above 45 years old. In terms of religion, 73 of them(72.3%) are Muslims, 13 respondents(12.9%) are Buddhists, 12 respondents (11.9%) are Christians and two of them(3%) are Hindus. Most of the respondents teach more than 15 hours of vocational subjects per week (52.5%) followed by 10-15 hours per week(38.5%) and only 9% of the respondents teaching less than 10 hours per week.

Table 2
Respondents' Qualification, Specialization, Age Group, Religion, and Teaching Hours for Vocational Subjects

Demography	n=101	Frequency (f)	Percentage (%)
Academic qualification:			
1. SPM/MCE/SPMV		63	62.4
2. STPM		5	5.0
3. Diploma		24	23.8
4. Bachelors' Degree		5	5.0
5. Others		4	4.0
Professional qualification:			
1. Certificate in teaching		92	91.2
2. Post-Degree		5	5.0
3. Others		4	4.0

Specialization:		
1. Building construction	17	16.8
2. Automotive	23	22.8
3. Welding	13	12.9
4. Electronics	13	12.9
5. Electrical	11	10.9
6. Air-conditioning	8	7.9
7. Commerce	8	7.9
8. Workshop machinery practices	8	7.9
Age group:		
1. Below 30 years old	28	27.7
2. 30-45 years old	58	57.4
3. Above 45 years old	15	14.9
Religion:		
1. Islam	73	72.3
2. Buddhism	13	12.9
3. Christianity	12	11.9
4. Hinduism	2	3.0
Total hours teaching vocational subjects:		
1. Less than 10 hours	9	9.0
2. 10-15 hours	39	38.5
3. More than 15 hours	53	52.5

Objective 1: Identifying the Level of Job Satisfaction among Vocational Teachers

Table 3 shows the mean score (m) and standard deviation (SD) for work satisfaction items among the vocational teachers. In general, the overall average (m = 3.60) shows that vocational teachers are quite satisfied with their job. They also believe that the career as a teacher is enjoyable (m = 4.08) and it is a secure job (m = 4.00). However, they admit that the opportunity for promotion like the officers in other professions is limited (m = 2.93). They also believe that the society's recognition towards teachers is also decreasing (m = 2.97).

Table 3
Mean and Standard Deviation of Work Satisfaction

Item	Mean	SD
1. Teaching career is fun.	4.08	0.83
2. My achievement in teaching career could be upgraded.	4.10	0.77
3. I have a promising and bright future in teaching profession.	3.74	0.88
4. Teaching career is my desired career all the while.	3.59	1.06
5. Teachers have bright opportunities for promotion in higher grade position.	3.11	1.15
6. I am assured to work as a teacher.	4.00	0.81
7. I am not planning to resign my current job even though I have been offered with a better salary.	3.84	0.92
8. I will be remain to work as a teacher even though were given an opportunity for early retirement.	3.62	0.79

9.	I will be recommending to my close relatives in choosing teaching profession as their career.	3.38	1.03
10.	As a teacher, I have the promotion opportunity as the officers in other professions.	2.93	1.01
11.	Cash rewards given to me are still quite low and can be increased by working longer hours.	3.72	0.95
12.	I will continue my hard work in order to achieve recognized work performance.	3.98	0.73
13.	I will continue to work even though my superior neglected my work performance.	3.86	0.91
14.	The reward/compensation is appropriate with my work burden.	3.35	0.99
15.	Recognition by other individual towards my career as a teacher increases my work performance.	3.69	0.92
16.	Society recognizes current teaching career at higher level compared to the previous one.	2.97	1.07
17.	As a teacher, I am being respected all along my career.	3.29	0.92
18.	The teachers are being provided with all the similar facilities given to officers in other professions.	2.92	1.03
19.	Carrying out daily tasks are continuous responsibility.	3.99	0.77
20.	I am having fun while conducting tasks in my career	3.82	0.75
	Total average mean	3.60	0.97

Objective 2: Identifying Environmental Factors which Influence the Level of Satisfaction among Vocational Teacher

Table 4 illustrates the mean and standard deviation based on respondents' perception on workplace environmental factor which also influences their work satisfaction. In terms of the school environment, in general, the respondents rated moderately (m = 3.62). Even though, the teachers agree that their relationship with colleagues is good (m = 4.16) and the colleagues offer help in doing tasks (m = 4.00), respondents are unsure or doubtful (m = 3.31) whether the administrators give a fair treatment to school teachers and staff. They are also uncertain (m = 3.11) whether the training programs for vocational teachers are given consistently. Respondents are also uncertain (m = 3.03) whether the administrators take a serious attention to their complaints and suggestions. Nevertheless, the respondents agree that their relationship with the administrators is good (m = 3.93).

Table 4
Mean and Standard Deviation of Workplace Environmental Factor

	Item	Mean	SD
1.	Conducive environment increases focus while working.	3.89	0.76
2.	My body is healthy because of enough rest.	3.68	0.76
3.	Spacious, clean and comfortable workplace enhance my hard work.	3.87	0.76
4.	I am very keen in accomplishing daily tasks.	3.92	0.72
5.	My relationship with school administration is good.	3.93	0.78
6.	My relationship with all my colleagues in school is good.	4.16	0.58
7.	My colleagues always help us while accomplishing tasks together.	4.00	0.65
8.	Friendly relationship among colleagues motivates them to work better	3.99	0.71

9.	Administrator practicing fair treatment towards all the teachers and staffs career.	3.31	0.97
10.	Training programs and courses in related fields are sufficient.	3.11	1.07
11.	Administrators considering staffs' complaints seriously.	3.03	0.96
12.	Role conflicts arose during task accomplishments.	3.43	0.79
13.	School administrators always pay attention on the state of the physical environment.	3.54	0.96
14.	I am being patience even though accomplishing my tasks slowly.	3.50	0.98
15.	School administration takes care of the teachers' welfare.	3.73	0.96
	Total average mean	3.60	0.87

Objective 3: Identifying the Level of Flow of Information within Organization which Influences the Job Satisfaction of Vocational Teachers

Table 5 shows the mean and standard deviation regarding the flow of information relationship in the organization which influences respondents' work satisfaction. The findings show that vocational teachers were less satisfied with the flow of information within the organization (m = 3.30). They are unsure whether they receive repeated instructions (m = 3.18) or too many instructions from the administrators (m = 3.32). Teachers agree (m = 3.59) that they feel stressed for having to finish the syllabus in the time frame which has been stipulated. They also believe that the opportunity to develop their career in the field they are involved with is very little (m = 3.65).

Table 5
Mean and Standard Deviation of Flow of Information in the Organization

	Item	Mean	SD
1.	I am feeling emotionally tired due to my work.	3.32	1.09
2.	I felt running out of energy after working hours.	3.19	1.05
3.	My current work load affected my health.	3.19	1.08
4.	I always received repetitive instructions.	3.18	1.07
5.	I always received too much instruction from my administrator.	3.32	1.06
6.	I felt that I could not reach my work target.	3.17	1.06
7.	I am lucky to acquire harmonious school citizens	3.22	1.08
8.	I am not confident that the teachers are able to assist the administrator to improve performance.	3.16	1.02
9.	I felt the salary given is not proportionate with work load.	3.45	1.11
10.	Too much of work load limits time for recreational activities.	3.26	1.07
11.	Frequent school co-curriculum program which complicates other works.	3.36	1.12
12.	I carry out tasks apart from my specialized area.	3.37	1.12
13.	I have to take sudden or immediate decisions due to last minute orders.	3.39	0.94
14.	I am stressed to complete subject syllabus within the given time period.	3.59	0.92
15.	I always don't have enough time to produce desired quality work.	3.19	1.09

16.	I am not sure about the teachers' authorities and responsibilities.	2.98	1.13
17.	I am feeling or facing emotional conflicts due to heavy work load while accomplishing tasks.	3.23	1.14
18.	I have little opportunities to expand my career in related areas.	3.65	1.04
19.	Monthly salary is not enough to support family.	3.31	1.05
20.	In my view, there is a limitation in opportunity to be promoted.	3.08	1.10
	Total average mean	3.30	1.07

The Results of the Open-Ended Questions

Table 6 shows the teachers' work satisfaction enhancing factors. Research finding identified 51(50.5%) respondents stressed on salary or wages could enhance their work satisfaction. Another 36(35.6%) respondents stressed on conductive working environment and the rest 14(13.9%) respondents mentioned that promotion opportunities may enhance vocational teachers work satisfaction.

Table 6
Factors Contributing Towards Work Satisfaction

Rank/Item	Frequency	(%)
1. Salary or wages	51	50.5
2. Working environment	36	35.6
3. Promotion opportunities	14	13.9
Total	101	100%

Table 7 displays the suppressing factors which cause dissatisfaction on teaching career. Majority respondents, 65 teachers (64.4%) stressed on work load, 19 of them (18.8%) on workplace environment and 17 teachers (16.8%) on limited promotion opportunities.

Table 7
Suppressing Factors on Teaching Career

Rank/Item	Frequency	(%)
1. Work load	65	64.4
2. Workplace environment	19	18.8
3. Limited Promotion	17	16.8
Total	101	100%

Table 8 shows the recommendations to improve teaching profession. Almost half, 50 (49.5%) respondents thought that reward/recognition, followed by 36 (35.6%) teachers stressed on training and 15 (14.9%) of them on motivation could enhance the teaching profession.

Table 8
Recommendations to Improve Teaching Profession

Rank/Item	Frequency	(%)
1. Reward/Recognition	50	49.5
2. Training	36	35.6
3. Motivation	15	14.9
Total	101	100%

Discussion and Implications

Respondents' Reaction on Their Job

Generally, vocational teachers seemingly agreed that job aspects do give them satisfactions while working. Based on overall mean (m=3.60) on work satisfaction, vocational teachers hope their achievement as a teacher may be enhanced (m=4.10). They also thought that teaching career is fun (m=4.08) and their work as a teachers is assured (m=4.00). They believed carrying out daily tasks are continual responsibilities (m=3.99) and they will be working hard till their work performance is being recognized. However, they agreed that equal opportunities to be promoted are limited (m=2.93) and provided with insufficient facilities compared with the officers in other professions. They also noticed that current recognition by society on teaching profession is declining (m=2.97) compared to previous time. This research finding was supported by Maslow's theory (1954) regarding employees being satisfied if they feel their job is secured and assured. Klien (1966) discovered that employees always compare works with their colleagues. Due to these factors, the management should make sure the teachers among themselves are being recognized fairly. It also supports statement by Greenberg (2000) regarding employees' recognition could cause the feelings they are being honored. According to Adam (1963) in his equilibrium theory, as the input from employees produces profit, the company should recognize and honor them in return. If the recognition and honor is fair with other employees as well, they will be satisfied while performing their job.

Greenberg (2000) also discovered that some procedures should be given importance such as the employees can voice out their views on the decisions made by managers to ensure the tasks given to them can be carried out without any problems. Each decisions made by managers should be fair and consistent to all the employees. The teachers also wish to have an established and recognized profession where as they will be given appropriate rewards based on their work load and hoping for involvement during decision and policy making process.

Respondents' Reaction on Environmental Factor

Generally, vocational teachers agreed that environmental factor made them to be

satisfied while working. The total average mean for environment aspect is 3.62, so environmental factor can give satisfaction among vocational school teachers. Work satisfaction aspect is always associated with work environment, organizational atmosphere, and organizational characteristics and employees interest on their career. Respondents agreed that their relationship with colleagues are good (m=4.16) as they always help the respondents while carrying out their tasks together (m=4.00). Friendly relationship among colleagues motivate teachers to produce better work (m=3.99). Relationship with the administrators were good as well (m=3.93). According to Carol and Tosi (1977), if an employee is interested in his work, he will be more committed with the organization, more productive and attain higher work satisfaction. Any individual usually functions well in calm, comfortable and away from negative elements (Mahmood Nazar, 1990). Locke (1976) mentioned that any employees will be satisfied with their work if the characteristics of work and working environment suits personal values and career expectations. An individual will be satisfied with their career if the job is suitable with employees' need and value. The job also must be appropriate to their skills and ability. However, the research finding shows that respondents were not sure and not clear whether the management provides fair treatment towards all teachers and staffs. They were also not sure whether they had received sufficient trainings. Thus, they questioned the seriousness of management in accepting teachers' and staffs' comments and responds to them. According to Kals and Well (1985), work environment plays an important role while ensuring work satisfaction. Lacking in work satisfaction may be due to working condition, content of work, working group, supervision and organization. If the employees are not clear, having conflicts and heavy work load, they will be stressed which led to work dissatisfaction (Hamar & Tosi, 1974).

Respondents' Reaction on Information Flow in Organization

The findings show that vocational teachers were less satisfied with the flow of information within the organization (m = 3.30). They are unsure whether they receive repeated instructions (m = 3.18) or too many instructions from the administrators (m = 3.32). Teachers agree (m = 3.59) that they feel stressed for having to finish the syllabus in the time frame which has been stipulated. They also believe that the opportunity to develop their career in the field they are involved with is very little (m = 3.65) and vocational teachers also felt that their salary is not compatible with the work load (m=3.45). Research conducted by Wendram (1989) is about the connection between work satisfaction, work stress and tendency to quit work among the employees in a company in Selangor. He discovered factory's employee with low work satisfaction going through heavy work pressure while employee with higher work satisfaction was facing less work pressure. Research finding also supports factory employees' with low work satisfaction has more tendencies to quit their job while the employee with high work satisfaction has fewer tendencies to quit their job.

Research by Lee Meng Chun (1990) on 101 factory employees discovered there were significant difference about work satisfaction and behavior aspects by gender, age and working time except with place of origin among employees handling repetitive

tasks. Thus, respondents' work satisfaction is low, could be due to repetitive working tasks which tend to create dissatisfaction, being bored, tired and losing the humanity aspects in work. Aminuddin Mohd Yusof (1994) mentioned that work satisfaction is an outcome of various behavior applied by employees on their job, related factors and life overall. He also stressed that those whom satisfied with their work feels comfortable and always wish to go to work.

Factors Enhancing Work Satisfaction among Vocational Teachers

Findings from the open-ended questions show that 51 respondents (50.5%) mentioned salary or wages play important role to increase work satisfaction among vocational teachers. This finding is supported by Herzberg et al. (1959) whom explained that main factor influences work satisfaction is salary or wages. Satisfaction from salary or wages depends to its value and function. According to Lunch and Ronan (1981), high salary could enhance work satisfaction. Thus, dissatisfaction occurs among teachers with disproportionate salary compared to their work load especially in low rank. Locke (1982) explains salary payment should be proportionate with the completed tasks. Salary is not only motivates them but also one of the factor that causes dissatisfaction.

Dissatisfaction among Vocational Teachers Regarding Their Career

Among 101 respondents, majority vocational teachers (64.4%) were dissatisfied regarding their career. This may be due to heavy work load, as they need to teach the theories and also conducting practical session with unsatisfied working condition. Vocational teachers have to conduct other tasks such as being a class teacher, sports teacher, co-curricular activities teacher and also clerical tasks as collecting school fees and attend courses while in service. Male (1996) researched about the factors teachers quitting their job. Some of the factors were heavy work load as conducting clerical tasks, inability accomplishing high number of students' need, lacking in support by administration and no recognition given to them.

Research by Male and May (1997) in New Zealand discovered factors contributing towards heavy work load among teachers in school is the needs to handle emotional problems, behaviors, moderate and the worst learning problems. They discovered stress, burnout and work load among special education teachers in joined, inclusive or special schools program involving children suffering due to emotional or behavioral learning problems is high. They also identified that 80% of the respondents mentioned working more than 60 hours in a week that causes heavy work load among them. They were going through very high level of stress as they need to handle children with emotional and behavior problems compared other teachers. It contributes towards working environment stress and creates anger, tasks confusion, tiredness, ineffective in teaching, upset, cried, worried and others. Abdul Halim (2000) discovered factors influencing stress among teachers are work load, school administration and interpersonal relationship. Work load factor is the most frequent contributing towards the total stress among male and female teachers.

Inputs from the open-ended questions answered by vocational teachers recommend the ways to enhance teaching profession. Almost half from the total number of

respondents (49.5%) stressed rewards or recognition is the main factor to enhance teaching profession which strongly motivates individual performance. Organizational reward system including salary increment, bonuses, promotion and other benefits besides cash form motivates teachers. Rewards given to teachers should be fair and proportional with their performance. This avoids anger and dissatisfaction among other teachers which may pull down their performance level.

Teachers are responsive towards non-cash incentives such as additional leaves, housing and car loans, chances in pursuing studies and many others. This view was supported by Herzberg et al. (1959) that responsibility, recognition, achievement and professional enhancement contribute towards work satisfaction. Thus, managers in an organization have to be fair when rewarding their employees. Sufean (1993) mentioned that human being needs recognition, appreciation and honor on the tasks they have accomplished and will be carrying out. They act towards better directions, productive, initiatives, more critics and innovative. Work performance may be enhanced if the person receives appropriate rewards with their effort and work achievement. Rewards based on satisfied work performance create work satisfaction (Dressler, 1985). Maslow (1962) stressed on recognition and appreciation as factors contributing towards work satisfaction. According to Rundell (1984), human beings require self-concepts, personality and difference on extrinsic and intrinsic aspects. Teachers need appreciation, recognition, motivation and honor based on intrinsic aspect on what they have done and will be carrying out. If intrinsic need is being fulfilled, teachers will be prepared to carry out any tasks. Teachers will be acting towards better direction, productive, highly initiated, more creative and innovative. Their work performance may be enhanced with appropriate effort and hard work.

Conclusion

Research findings about work satisfaction among vocational teachers based on the three aspects of work satisfaction indicated that environmental and job aspects were contributing towards work satisfaction of vocational teachers while information flow aspect was rated low. Thus, technical school administrators should stress on organizational and communication aspects in enhancing work satisfaction and teachers' performance of vocational teachers. Nevertheless, the findings of this study had limited generalization because it only focused on public technical schools in two states in Malaysia. The findings could not be generalized to all technical schools in Malaysia.

Recommendations

Based on the research findings, the following recommendations may enhance work satisfaction among vocational teachers in Malaysian Technical Secondary Schools:

1. The main finding of this study shows vocational teachers were dissatisfied regarding their prospects in school. Some incentives should be given to

teachers such as promotion, recognition and appreciation. Promotion should be based on merit, experience and commitment, and not on favoritism.

2. Performance evaluation should be based on work achievement and outcomes in the three-year period before promotion. The way of evaluating the teachers' performance should be accurate and includes overall evaluation on teachers' performance. This includes activities conducted in and out of the class. The evaluator should not be limited to the administrator only but also can include other individuals who have knowledge on the teachers' work and contributions.
3. Performance evaluation should be based on work achievement and outcomes in the three-year period before promotion. The way of evaluating the teachers' performance should be accurate and includes overall evaluation on teachers' performance. This includes activities conducted in and out of the class. The evaluator should not be limited to the administrator only but also can include other individuals who have knowledge on the teachers' work and contributions.
4. Relationship between the teachers and administrators should be enhanced. Thus, the administrators should implement open and humanistic approaches such as tolerance, taking care of the welfare of the teachers and listen to the grass-root.
5. Communication and information flow in the organization need to be upgraded.
6. Teachers should be exposed to motivational and self-improvement courses to enhance their morale, motivation and inspiration such as motivational courses, group training and self-confidence which are critical to work satisfaction.
7. Opportunities to enhance knowledge and skills should be added and open to all vocational teachers. Thus, courses related to teachers' need should be held and given priority among the interested teachers.

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The Professional Ethics for Teachers: Analyzing the Incidents of Personal Information Leakage

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ABSTRACT The aim of this research is to examine the qualities of a teacher through addressing both "the required images for a teacher" described on each prefecture/government-decreed city and the number of cases of USB (including reports or assessment data) loss. This research, leaning on educational technology, indicates the professional ethics which is regarded as one of the qualities of a teacher, correlating with the teacher training and career education. We used data of personal information leakage incidents/accidents survey report in 2008. The data of personal information leakage incidents set off by teaching staff were picked up and reconfigured because of discussing distinctive trend. We divided number of cases of leakage of personal information in education/ learning support by number of cases in all industries and we got rate of appropriation each causes and routes, and we considered with attention and in detail the rates. Teachers have some opportunities to train for improvement the lessons that give teachers chance to grow as a teacher. So we say Japanese teachers or schools have some cultures, because it is built on self-devotion and collegiality and worked on hard and continuously. We consider we must teach professional ethics to teachers from view of vocational education or career education in these cultures.

KEY WORDS professional ethics, teacher-training, leakage of personal information, humanity comprehensively, educational skills, sociality comprehensively, qualities of teachers

Introduction

The aim of this research is to examine the qualities of a teacher through addressing both "the required images for a teacher" described on each prefecture/government-decreed city and the number of cases of USB (including reports or assessment data) loss. Especially, the professional ethics, not professional skills, are discussed because the one of the functions of vocational education for a teacher is to cultivate the sense of ethics or

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moral. Through those works, this study attempts to elicit the various aspects of ethics that a teacher is required to have and the difficulties of being a teacher in Japan.

According to Hanada(2010), one of the traits of teachers in Japan had been expressed as "a cleric" before the Second World War, as "a labor" after that, and then as "a profession" for now (p.17). Moreover, he insisted on a teacher of developing humanity, educational skills, and sociality from the view of "improving of teachers' skills". Hanada(2010) framed each term as followings. The humanity is defined as "a human who acquired (or try to acquire) insight and cognition for recent education, the image of an ideal teacher or school, and the qualities, the abilities and culture" (p.17). The educational skills are defined as "the qualities and the abilities that provide each student with solid academic achievement, and that promote (or try to promote) the students' humanity" (p.18). Then, sociality is defined as "the abilities to develop (or try to develop) the human relationships with students, parents, community members, and colleagues of their schools" (p.19).

Humanity, Educational Skills, and Sociality

Through the literature review about the teachers' qualities, Shindo et al. (2010) examined humanity, educational skills and sociality comprehensively. This study placed "the required abilities for a teacher" described in Keihanshin Area (Kyoto Prefecture, Osaka Prefecture, Hyogo Prefecture, Kyoto City, Osaka City, and Kobe City) into two categories: "the required abilities for a teacher universally" and "the required abilities for the future". These two abilities are expressed in the Ministry of Education, Culture, Sports, Science and Technology. The former includes sense of responsibility as a teacher, deep understanding for human developing and educational attachment for children or students, specialized knowledge about subjects, and wide range of culture. The latter includes the abilities to behave with the global view, the required abilities for members of society in order to adapt to the changing world, and the required abilities from the teachers' duty. From the analysis, understanding children and attachment, the skills of practical instruction, and sense of responsibility or enthusiasm for teaching are required. In addition to those, developing the skills of communication and problem solving are required in the university level.

Also, humanity of a teacher is examined in many researches. Konno and Tando(2006), Suzuki(2006), and Kuno and Miura(2008) are discussing the humanity through the empirical approach. Konno and Tando(2006) assumed that "biology of a teacher equal to being or becoming resilient as a labor and as a human". From the questionnaire survey based on teacher resilience scale, burnout scale, teacher efficacy scale, and teacher contentment scale, this study illustrated that each factor group of resilience had functioned as protective toward burnout tendency. And the factor of resilience had close relation with teacher efficacy and teacher contentment. Suzuki (2006) pointed out not only "counselor" or "colloquist" as the role of teachers, but also sympathies as the required abilities for a teacher.

Konno and Tando(2006) indicated a teacher as a labor, focusing how teachers' life would be satisfied in daily works, and Suzuki(2006) expressed a teacher as a professional, focusing the daily educational practices through the dialogues with students. Although each of these has different research questions, they imply the concept of a teacher that improves humanity with educational psychology approaches.

Moreover, Kuno and Miura(2008) analyzed reports or papers written by participants of the training course for leadership improvement at the educational center of Aichi prefecture as main objects. And they defined enthusiasm for education and attachment/solicitude for children as practical sensitivity. In order to develop this practical sensitivity, 1) the better relationship with children, 2) the place that break one's shell, 3) the place that experience self-affirmation are needed.

Also, the researches of educational skills are undertaken previously. For example, Fujiwara and Senzaki(1985) surveyed the period of decision about advancement for universities or department of education, incentive of choosing department of education, the required qualities for a teacher, and abilities as teachers among students taking courses of primary education of the university of education. About the required qualities for a teacher, students gave high evaluation to having a value for playing with children, patient/strive, calm/fair, leadership, and hardworking. Also, about the abilities as teachers, this study distilled three factors: the ability of understanding children, ability of research/study, and the educational/practical skills. Itarashiki et al. (2010) examined the differences of teachers' qualities between elementary school teachers and parents in Kobe city. Their research focused on a sense of responsibility for the lesson, enthusiasm, eagerness, normative consciousness, and communication skills that need for teachers, and argued teachers' motivation or competence toward the lesson from the view of both teachers and parents.

Recently, many countries in Europe, U.S. and Asia try to adopt the Lesson Study of Japanese style, and even in Japan, the methods of lesson study are consistently improved. For example, the research group of educational methods at Nagoya University is promoting a study on the way of traditional lesson studies/analysis via the class observation, encoding video/audio and utterance records, and interpretation these data. In addition, they progress the research including the consultation through making and sharing observing data using sticky and expanded utterance records. These are not the methods for researchers only, but the methods addressed in daily works for researcher, teachers, and colleagues. Furthermore, Sakamoto (2010 and 2011) provided the students taking Teacher-Training Course with the opportunities to learn lesson analysis. This lesson analysis is considered as the pre-service teacher education with the video records and worksheets developed for the lesson studies. From the result of questionnaire survey, this research has proven benefit within those students.

In the researches of sociality, Kadowaki(1999) developed a concept of "social competence", and revealed the mechanism which shape the human as a social animal. This social competence includes both incentives that built the society with one's own accord and qualities that develop/rebuild the society (p.vii, p.61). He argued that children are not missing "sociality" that aspires to sustain the society or to adapt for the

society, but missing "social competence". When Kadowaki(2006) set 26 terms so that measure the social competence as the required qualities for a teacher, 5 factors were extracted; a feeling of trust in the adults, and in the human, attention for the others, intellectual curiosity, and interest toward the unknown. Then, he indicated the social competence had diminished in upper grade, and students with higher social competence had accomplished good results in academic achievement. Although there are some researches that attempt to promote the social competence of children, it is considered that human relationships like communication with parents, members in communities, and other teachers might be included in the researches of humanity or educational skills, except for those of sociality. The researches referring sociality as the required qualities for a teacher are still not enough.

According to Iwamoto(1995), improvement of "the quality" of a teacher would be necessary in every age. On the other hand, if the word, "quality" would have meant "innate, extraction and instinct (Kojien)", "the quality" of a teacher would not be formed or advanced posteriorly, but inhere fundamentally. Hence, according to the meaning the word, it is impossible to improve "the quality of a teacher" (p.49). In an extreme instance with the terms of Pierre Bourdue, as we assume that the quality of a teacher cannot be improved, the natural inclinations toward being a teacher or the quality assurances for the lessons are determined previously. In sum, when the objected, the institutionalized, and the embodied cultural capital are not inherited from parents to their children. As a result, the quality of a teacher would not be reproduced.

In this study, "the quality of teachers" is defined as what improve present situation or what help teachers develop through the knowledge of the career education that promote profession of teachers based on families, schools, and workplaces. With the view toward the micro society, not toward the macro society, the qualities of a teacher would form through the career education consisting the apprentice features that the cultural capital will be reproduced from college teachers, administrators and colleagues. From the era of "a teacher as a labor" after the Second World War, teachers' rights had been discussed in the fields of educational administration or sociology of education, but the debates about moral or ethics as a labor have not been enough. So now, at the era of "a teacher as a profession", discussing about moral or ethics teachers possess would be needed work from the perspectives of teacher training.

From the discussion above, this research, leaning on educational technology, indicates the professional ethics which is regarded as one of the qualities of a teacher, correlating with the teacher training and career education, based on the incidents of loss or divulgation of personal information.

Data Analyzing the Cause and Route of Leakage

In this chapter, we describe personal information leakage incidents/ accidents ("incidents", hereafter) using data of "2008 Information Security Incident Survey Report" (2009) made by Security Incident Investigation Working Group, NPO Japan Network Security Association ("JNSA", hereafter). The data of personal information

leakage incidents set off by teaching staff were picked up and reconfigured because of discussing distinctive trend.

Analyzing the Cause of Leakage

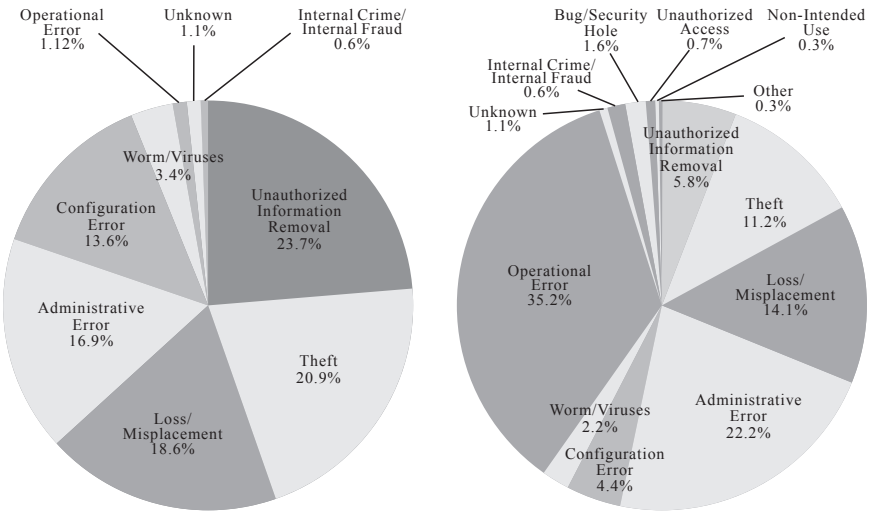
Figure 1 shows the ratio of leaks by cause in 2008, all industry type and education/ learning support. We use each cause by definition of JNSA as follows. "Administrative Error" and "Bug/ Security Hole" are carelessness, errors, or skimpiness by organization or system administration. "Operational Error" and "Configuration Error" are operational human errors that are carelessness or errors for dealing with system or data, for setting the access authority, not apply only to system administrator. "Theft", "Worm/ Virus", and "Unauthorized Access" are incidents that were obtained information by unknown third party, however we could keep out them if we should do. "Loss/ Misplacement" is incident occurred in somewhere because of unconsciously forgetting information which is allowed to bring out. "Unauthorized Information Removal" is to consciously trespass rules, taking-home information, using file-swapping software.

As shown in Figure 1, "Operational Error" accounted for 35.2% (483 cases), "Administrative Error" (305 cases, 22.2%), "Loss/ Misplacement" (194 cases, 14.1%), "Theft" (154 cases, 11.2%), "Unauthorized Information Removal" (80 cases, 5.8%), "Configuration Error" (60 cases, 4.4%), "Worm/ Virus" (30 cases, 2.2%), "Bug/ Security Hole" (22 cases, 1.6%), "Internal Crime/ Internal Fraud" (19 case, 1.4%), "Unauthorized Access" (10 cases, 0.7%), "Non-Intended Use" (4 cases, 0.3%), "Other" (4 cases, 0.3%), and "Unknown" (8 cases, 0.6%).

We focus on the ratio of leaks in "Education/Learning support" by cause in 2008, "Unauthorized Information Removal" (42 cases, 23.7%), "Theft" (37 cases, 20.9%), "Loss/ Misplacement" (33 cases, 18.6%), "Administrative Error" (30 cases, 16.9%), "Configuration Error" (24 cases, 13.6%), "Bug/ Security Hole" (6 cases, 3.4%), "Operational Error"(2 cases, 1.1%), "Internal Crime/ Internal Fraud" (1 case, 0.6%), and "Unknown" (2 cases, 1.1%).

We divided number of cases of leakage of personal information in Education/ Learning support by number of cases in all industries and we got rate of appropriation each cause. Table 1 shows the rates and ranks in descending order.

In general, the news sometimes says that students' report cards or USB potable recordable media saved their school records and so on were stolen by unknown third parties. Minister of Education, the superintendents of education, and principals quite often call attention to check worm and do anti-virus to teachers and staffs. We guess "Theft" or "Worm/ Virus" is the underlying cause, but "Theft" is shown 37 cases (20.9% of Education/ Learning support, rate of appropriation is 24.0%), "Worm/ Virus" is shown 6 cases (3.4% of Education/ Learning support, rate of appropriation is 20.0%). They are not small numeric numbers, however we could get the unexpected results.



<Education/Learning support> <All industries type>

Figure 1. The Ratio of Leaks by Cause in 2008

We focus on “Unauthorized Information Removal”, there are 80 cases (5.8%) in all industries, in contrast, there are 42 cases (23.7%) in Education/Learning support. “Unauthorized Information Removal” is the underlying cause in Education/ Learning support. What rate of appropriation is 52.5% means Education/ Learning support account for more than half the number of leakage of personal information caused by “Unauthorized Information Removal”.

Minister of Education, the superintendents of education, and principals need to call attention to check worm and do anti-virus as shown above, because if personal information leaked from teachers' computers, that is a big deal. However we must note the fact has some ethical problems, we should not settle with just ‘careless’. The leakage of unauthorized/personal information occurred from the fraudulent removal means deliberate or conscious deviation from rules by the leakers.

Table 1
Number of Cases of Leakage of Personal Information in Education/Learning, All Industries Type, and the Rate of Appropriation Each Causes

	Education/Learning support		All industries type		Ratio appropri ation	Rank
	Number	Ratio	Number	Ratio		
Unauthorized information removal	42	0.237	80	0.058	0.525	1

Theft	37	0.209	154	0.112	0.240	4
Loss/Misplacement	33	0.186	194	0.141	0.170	6
Administrative error	30	0.169	305	0.222	0.098	7
Configuration error	34	0.136	60	0.044	0.400	2
Worm/Viruses	6	0.034	30	0.022	0.200	5
Operational error	2	0.011	483	0.352	0.004	9
Unknown	2	0.011	8	0.006	0.250	3
Internal crime/ Internal fraud	1	0.006	19	0.014	0.053	8
Bug/Security hole	0	0.000	22	0.016	0.000	10
Unauthorized access	0	0.000	10	0.007	0.000	10
Non-intended use	0	0.000	4	0.003	0.000	10
Other	0	0.000	4	0.003	0.000	10
SUM	177	1.000	1373	1.000		

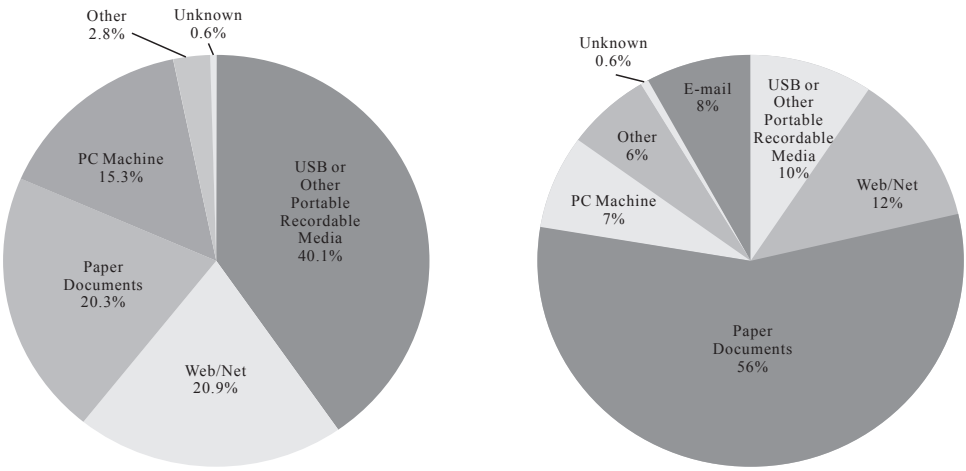
Analyzing the Route of Leakage

Figure 2 shows the ratio of leaks by route in 2008, all industries type and Education/ Learning support. As shown in Figure 2, “Paper Documents” accounted for 55.9% (767 cases), “Web/ Net” (161 cases, 11.7%), “USB or Other Portable Recordable” (136 cases, 9.9%), “E-mail” (111 cases, 8.1%), “PC Machine” (100 cases, 7.3%), “Other” (89 cases, 6.5%), and “Unknown” (9 cases, 0.7%). We focus on the ratio of leaks in “Education/ Learning support” by cause in 2008, “USB or Other Portable Recordable” (71 cases, 40.1%), “Web/ Net” (37 cases, 20.9%), “Paper Documents” (36 cases, 20.3%), “PC Machine” (27 cases, 15.3%), “Other” (5 cases, 2.8%), and “Unknown” (1 cases, 0.6%).

We divided number of cases of leakage of personal information in Education/ Learning support by number of cases in all industries and we got rate of appropriation each routes. Table 2 shows the rates and ranks in descending order.

“Other” (5 cases, 2.8%) and “Unknown” (1 cases, 0.6%) say that the routes of leakage of personal information in Education/Learning support are comparatively decided because numbers of these cases are small.

There are 136 cases (9.9%) of “USB or Other Portable Recordable” in all industries, but 71 cases (40.1%) in Education/ Learning support. Education/Learning support account for a half of the cases of “USB or Other Portable Recordable” route. Teachers need some computers for their works as tools, and they use some media not only to make lesson plans or lesson materials but also to make or manage students' report or school recommendations, records of tests or record cards. Both previous works and these data tell us about it.



<Education/Learning support> <All industries>

Figure 2. The Ratio of Leaks by Route in 2008

Changing the point of view, though all industries except "Education/Learning support" are strictly regulating the usage of "USB or Other Portable Recordable Media", Education/Learning support is not, because main teachers' works are individual activities, not collective activities. Now some researchers point out problems of overtime works or works in their houses, these data have some meanings as evidences for their individual works.

There are 36 cases (20.3%) of "Paper Documents" in Education/Learning support, but just 4.7% for rate of appropriation. Because the greater part of the route for incidents is "Paper Documents", there are 55.9% (767 cases) in all industries. So these reasons have a great effect on rate of appropriation. We guess that the news media shows a handful of cases of personal information leakage.

There is 0 cases of "E-mail" in Education/Learning support in spite of 111 cases (8.1%) in all industries. This means that using E-mail has not been popular in teachers' culture, and there are gap between teachers who use the E-mail/ computers appropriately and teachers who do not use them. Main teachers' works are individual not collective, so we got such result.

Table 2
Number of Cases of Leakage of Personal Information in Education/Learning, All Industries Type, and the Rate of Appropriation Each Causes

Type	Education/Learning support		All industries type		Ratio appropriation	Rank
	Number	Ratio	Number	Ratio		
USB or other portable recordable media	71	0.401	136	0.099	0.522	1

Web/Net	37	0.209	161	0.117	0.230	3
Paper documents	36	0.203	767	0.559	0.047	6
PC machine	27	0.153	100	0.073	0.270	2
Other	5	0.028	89	0.065	0.056	5
Unknown	1	0.006	9	0.007	0.111	4
E-mail	0	0.000	111	0.081	0.000	7
SUM	177	1.000	1373	1.000		

Cross-Tabulation Table, the Leakage Reasons and Routes

The following table 3 shows the leakage reasons and routes in all industry type and education. Here, the leakage reasons are “Unauthorized Information Removal”, “Theft”, and “Loss/ Misplacement”. And the leakage routes are “Paper Media”, “PC Machine”, “USB or Other Portable Recordable Media”. All of these are chosen because of high ratio in education. Also, the table 3 represents the occupancy in education from dividing the incidents of education by those of all industry types, focused on not only the number of cases, but also the sections where the leakage reasons and routes are crossing.

Looking at the reasons of leaks at the table 3, the educational occupancy are “USB or Other Portable Recordable Media”, “PC Machine” and “Paper Media” in descending order. However, in the numbers of incidents, “Unauthorized Information Removal” is “USB or Other Portable Recordable Media (22 cases)”, “PC Machine (9 cases)”, “Paper Documents (5 cases)”. “Theft” is “PC Machine (16 cases)”, “USB or Other Portable Recordable Media (13 cases)”, “Paper Documents (8 cases)”. “Loss/ Misplacement” is “USB or Other Portable Recordable Media (21 cases)”, “Paper Documents (8 cases)”, and “PC Machine (9 cases)”.

Whatever be the leakage reasons, the number of incidents via the route of “USB or Other Portable Recordable Media” is quite large. It might be that personal information would leak when teachers bring USB or other portable recordable media iniquitously and lose or get stolen at somewhere. Unlike USB or other portable recordable media, paper media is easy to find the unauthorized removal and the number of incidents is small. Instead, theft or loss/misplacement attributes the lack of management after the permission to bring personal information.

Table 3
Cross-Tabulation Table, the Leakage Reasons and Routes

Type		Paper documents		PC machine		USB or other portable recordable media	
Unauthorized information removal	Education	5	0.455	9	0.750	32	0.815
	All industries	11		12		27	
Theft	Education	8	0.114	16	0.296	13	0.650
	All industries	70		54		20	
Loss/ Misplacement	Education	8	0.077	2	0.100	21	0.538
	All industries	104		20		39	

Conclusion

Crumbed Safety Dogma in Japanese Schools

The number of fatal and injury incidents caused by invaders outside schools have been increasing. Although Japanese people had believed the myth that schools were not only pleasant places but also safety places, schools are not a safe place any more. Every school came to keep a two-pronged weapon for catching a criminal and ask school visitor to hang his name card in order to keep schools safe. The number of schools that set up surveillance cameras has increased. School is equipped as a fort now.

These measures may enable them to react to the attack from "enemy of outside schools". On the other hand, there is no guarantee to deal with when school would be attacked from "someone of inside schools".

In the middle of 1990s, computers had been introduced in schools. Otani (1997) analyzed the some schools' lessons which teachers used Internet in. He said we had to avoid that the Internet would come to be the Trojan horse for schools under the same conditions. The result of importing the Internet as the Trojan horse had opened the door that protected the schools in the past. The outside culture that is not familiar with education will invade and ruin schools. He used the metaphor to describe that schools will suffer with various conflicts between the closed school culture and the culture that open schools to society through the Internet, and those conflicts can be a possibility that result in the educational instability.

It used in this metaphor, Greek myths of the Trojan horse is the story that the Trojan military receive the big wooden horse in the impregnable fortress without suspicion. After that the military didn't confirm it at all, so the Greek soldiers who hide and lurk in the wooden horse come out at the midnight. And they called in their partners who stood by outside, and then Trojan people are destroyed.

That story can express in the context of teacher's consciousness for using personal information that is managed in the school, that is to say teacher's professional ethics. The principal and other teachers receive a certain teacher in the school without suspicion. After that they didn't confirm his/ her professional ethics at all, so the teacher who does not have a sense of morality as a teacher occurs the incidents unsupervised. And he/she passes report cards, school recommendation, records of students' family to third persons who are in the outside, and then students' parents will not trust in schools and consider "schools are not safe".

Because of that, the school conflicts became having a great impact when the Internet was imported in schools. After the Second World War, since the teachers are no longer "a cleric", there are some conflicts at the viewpoint of teacher's professional ethics. But those conflicts didn't have much impact, so they might be overlooked. As the above, the word of safe education has spread rapidly than expected. And the schools began to equip like a fort. So not only educational party but also the others might insist the necessity of risk management for schools and teacher's professional ethics.

We said the above, in Japan teachers have some opportunities to train for improvement and the lessons that give teachers chance to develop as a teacher through

the cultures based on self-devotion and collegiality and worked on hard and continuously. We consider we must teach professional ethics to teachers from view of vocational education or career education in these cultures.

The Professional Ethics for Teachers

Teachers in Japan start their career through the examination conducted at the board of education of each prefecture or government-decreed cities after they get teachers license. The required characters for a teacher at those boards of education are diversity. As examples, some of "the required characters or images for a teacher" in some prefectures are shown below.

In Tokyo, the image of required for teachers are 1) teachers with enthusiasm and responsibility, 2) teachers with rich humanity and consideration, 3) teachers who are able to develop children capability, and 4) teachers with cooperative attitude.

In Aichi, the images are those who have 1) professional knowledge or skills, 2) attachment for students and enthusiasm for education, 3) broader culture, 4) faculty and energy, 5.health, and 6.calm and patient.

In Nagoya city, they are those who have professional knowledge and culture, enthusiasm for education, and well-balanced mind.

In Osaka, they are humanity (attachment for children, enthusiasm), professional (broader knowledge, skills, independence), and sociality (cooperation with community members and sensibility among student's/ parent's needs).

In Kyoto, they are expressed as "HEART". "H" means healthy (balanced mind). "E" means expert (professional knowledge). "A" means action (vivacity and various experiences). "R" means responsibility (enthusiasm). And "T" means teamwork (self-conscious as a member of organizations).

In Hiroshima, there are two categories. One is the universal term. Another one is the terms described at the program of "Hiroshima as education prefecture". The former terms are sense of ethics, educational attachment for children professional knowledge and skills, and flexibility for the social/students demands. The latter terms are steadfast lesson skills, communication skills, positive attitude against something new, and cooperation skills with other teachers and fulfilling the duties organizationally.

There are 61 prefectures and government-decreed cities in Japan. The table 4 shows "the required characters or images for a teacher" that each prefecture or government-decreed cities released. In Table 4, authors arranged lengthwise names of the prefectures or the cities, described items of humanity, educational skills, and sociality in a left-to-right. The items were picked up from texts written "the required characters or images for a teacher", sorted to humanity, educational skills, and sociality by authors. The authors put on items in descending order. The author considers we must discuss about sociality or professional ethics for teachers, because there is a trend toward each school board of prefectures or government-decreed cities in Japan to downplay these. Number of checks of each item in humanity and educational skills are very large. Sociality has enough number of items, but does not have enough number of checks. The maximum value in sociality is 12 for "communication".

The professional ethics for teachers are divided into the ethics required for society (the first layer), the ethics required for labors (the second layer), and the ethics with professionals that is needed among teachers (the third layer).

Considering "spitting gum" as one of examples, the first layer means it makes roads or someone's' shoes dirty. The second layer, taking over the first layer, means the ethics as a member of organizations that he/she is belonging because of the possibility of losing their company's reputation. And the third layer, including the first and second layer, express the ethics based on the rule adopted in school culture. This third layer would be peculiar to schools.

In the case of Islamic education, it is said that what teachers do is only instruction. They do not have charge of "disciplinary or manners", students will be brought up through the understanding Koran. On the other hand, teachers in Japan have to be not only "the person who teach", but also "the better model for students". For that reason, the behavior as a teacher gives an important representation of their whole characteristics.

When a teacher shoplifts, he/she is punished accordingly. That is responsibility of the first layer ethics. Taking responsibility of the second layer indicates punishing from his/her workplaces (castigation, dismissal, salary reduction). So what do he/she need to take responsibility at the third layer? A teacher who shoplifts will attract the attention from society (the first layer), workplace (the second layer), and students (the third layer). Although the teacher takes responsibility, students will have a question without answer about the teachers' instruction, "Do not steel someone's belongings…" At the third layer, we cannot take all responsibility. The teacher commits a crime that a problem of education as a human will be retained among students. If some want to be teacher because they like kids, and if prefectures or cities require that, teachers have to think and work carefully about the sense of ethics as a teacher.

Table 4

The Required Characters or Images for a Teacher

categories & items prefectural and city governments	Humanity																				Educational Skills														Sociality												
	sense of mission	humanity	passion	physical and mental well-being	motivation	belief by students, parents	partnership with parents	cheerful character	teacher-minded	wealth of experiences	belief by pupils/students	challenge	sensitivity	humility	model for younger teachers	individuality	endurance	reflection	thankfulness	pride as a teacher	ability for teaching	affection to pupils/students	filial understanding	specialized knowledge and skills	cultural accomplishments	brainstorming by himself/herself	knowledge of subject	coping appropriately with social change	feel delight to growth	growth with pupils/students	competence for teacher	qualification	studies for teaching material	counseling	communication	collaboration with another teachers	sense of ethics	enlightened citizenry	building a personal relationship	member of the organization	respect for persons	feeling of responsibility	regional understanding	feeling interest in foreign countries	competence for management	preciousness of life	service
Hokkaido	1								1												1	1		1																							
Sapporo city	1	1	1																			1	1		1						1																
Aomori	1	1	1	1	1				1	1	1				1						1				1	1									1	1				1							
Iwate		1	1		1																			1												1											
Miyagi		1	1											1												1			1																		
Akita					1											1					1	1		1	1		1		1																		
Yamagata	1			1	1																1	1		1	1	1									1	1	1						1				
Fukushima	1		1	1																		1		1	1	1											1										
Ibaraki	1	1	1	1	1																1	1	1		1				1			1															
Tochigi	1	1		1				1									1				1	1		1	1														1								
Gunma	1	1																				1	1	1	1		1												1			1						
Saitama	1	1	1	1				1													1	1	1	1	1					1									1			1					
Saitama city	1	1	1											1							1				1	1																					
Chiba	1	1		1	1	1		1													1		1		1				1								1	1									
Tokyo	1	1			1																1		1					1				1				1				1		1					
Kanagawa		1					1														1		1												1												
Yokohama city	1	1	1		1	1															1					1		1																			
Kawasaki city																					1		1							1			1														
Niigata	1		1																		1														1										1		
Niigata city	1	1	1			1															1		1	1																			1		1		
Toyama			1		1							1		1				1				1				1																				1	
Ishikawa	1				1	1		1		1											1	1		1	1	1							1									1					
Fukui	1		1																		1	1	1	1			1	1																			
Yamanashi	1	1	1																		1	1		1	1	1																					
Nagano		1	1	1			1																		1	1	1									1		1									
Gifu	1	1						1			1		1								1	1	1		1										1												1
Shizuoka	1				1																1	1	1		1		1																			
Shiwuoka city	1	1	1	1																			1	1															1								
Hamamatsu city	1		1							1											1		1															1	1	1							
Aichi	1		1	1																		1		1	1	1										1		1								1	
Nagoya city	1	1	1	1			1																	1		1									1						1			1			
Mie						1																1	1			1				1								1	1		1	1					
Shiga	1	1	1																		1	1																									
Kyoto	1	1	1	1		1															1	1				1												1					1	1			
Kyoto city																						1	1																								
Osaka		1				1	1														1		1	1															1								
Sakai		1	1	1		1															1	1		1																	1						
Osaks city	1		1																		1	1			1									1													
Hyogo	1											1									1		1						1						1	1	1		1								
Kobe city		1			1																1				1																						
Nara	1					1															1							1																			
Wakayama		1					1																1	1					1														1				
Tottori		1									1		1								1	1																									
Shimane													1													1									1												
Okayama	1	1					1						1								1	1					1	1			1					1		1	1							1			
Hiroshima	1	1			1							1									1	1		1				1								1	1	1			1							
Yamaguchi	1	1										1										1	1	1	1	1										1		1				1						
Tokushima	1	1	1						1												1										1						1										
Kagawa																																															
Ehime	1																		1	1												1						1									
Kochi	1	1																			1	1	1		1		1									1			1	1		1			1		
Fukuoka	1		1		1																1	1		1						1																	
Fukuoka city			1																						1																						
Kitakyushu city	1	1																			1	1	1				1	1														1					
Saga	1	1	1																			1	1			1		1									1										
Nagasaki			1	1				1														1	1				1		1	1																	
Kumamoto	1		1			1	1		1		1										1					1														1	1						
Oita	1	1																			1			1																							
Miyazaki																																															
Kagoshima		1	1	1																			1	1	1										1												
Okinawa	1	1								1											1	1		1	1	1		1																1			
(SUM)	40	36	30	15	14	10	7	6	4	4	4	4	4	3	1	1	1	1	1	1	39	32	25	24	24	19	9	9	7	5	3	3	2	1	12	9	9	9	8	6	6	6	4	4	3	2	1

As mentioned above, teacher education in Japan often discusses how teachers like children, how they use the better and technical methodologies at their classrooms, and how they develop their own teaching skills. But, we need to provide the specific teacher education that build sociological competence through the sense of professional ethics as a teacher, not through establishing the curriculum, legislating teaching guideline. Learning the sense of ethics with notion of copy writer including the media usage would be effective because computer or information technology do not take root in teachers' culture yet.

Remained researches we are faced with are to trace the ethics in Japanese teachers' culture through the ethic education except for teachers (including risk management), the teacher education in foreign countries and the formation of vocational ethics

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Vocational Training: A Key for Employment in Nepal

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ABSTRACT People who have not been able to benefit from formal education and training must be given opportunities to acquire new vocational training and skills that will give them a second chance in life and at work. Simple vocational training could easily double or triple the annual income of overseas workers of Nepal. This paper discusses the socio-economic context and employment situation of Nepal to find out the gap including constraints and obstacles. Within the scope of the qualitative research method, the data were collected through the examination of the literature. The paper is concluded based on the information of the literature and authors' observation and experience at vocational training field in Nepal. Nepal needs to develop the model giving value to the vocational training and skills that will help the workforce become more flexible and responsive to the needs of local labor markets.

KEY WORDS vocational training, employment, Nepal

Introduction

Role of Vocational Training

It is widely recognized that poverty reduction measures must translate into incomes for the poor, reinforced by access to education and skills training opportunities which increase their employability and prospects for generating sustainable livelihoods. Human resources are the key to competitiveness in the world. Business or employment market, technical education, and vocational training links help to provide young professional with the skills and experiences, and they will need to move from the school environment into the work place. The opening of the economy and liberalizing of the policies have brought in challenges for the existing industries and new opportunities for entrepreneurs. In order to meet growing unemployment and underemployment, it needs to create technological changes and human resource management program. It is said that basic elements of an enterprise consist of people, goods, money, and information. Among them, human resources are vital to continuation of the enterprise. Quality of the manpower is essential to run the enterprises and this technical education and vocational training plays a vital role in the sector. The rapid changes of work mean that learning

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must be continuous and the work study link must be strengthened through entrepreneurship, enterprise and partnerships to be able to adapt to change. Innovative work-study programs should be closely linked with highly relevant needs driven research on agricultural-rural employment to ensure relevance for the changing economy and workforce development needs of industry, particularly in countries in transition. These must be accessible to the marginalized (illiterates, itinerant, migrants etc) rural poor, and provide pathways through adult and non-formal education. Technical education and skills training are especially needed for the most vulnerable groups to reduce their risk of falling deeper into the poverty trap and to increase their chances of climbing out of it.

There is no doubt that of 21st century technology has a major role in improving a nation's economic competitiveness and quality of life. Economists believe that vocational and skill training alone cannot create employment. A favorable economic environment creates the market for skills that link training to productive employment. Thus, the economic environment determines the size and nature of skills and the economic benefits of training for both individuals and enterprises. It is the responsibility of educational planners and educators to shape their education and training system in accordance with the economic realities linking training with economic productivity. In Nepal jobs such as programmer, system analyst, network manager, computer operator etc. which were unheard of only a short time ago, are now growing the fastest. But channeling of the unskilled workers into new growth areas of employment will not happen automatically. A sustained and coordinated effort by different segments of the country is needed. The organizations and institutes responsible with technical education and vocational training should come up with consolidate policy and program which should be of independent and professional nature that can help to create more jobs at market. In order to link vocational training with the employment and productivity, active participation of business and industry in skill development is essential in the national efforts of preparing appropriately trained and competent workforce.

Purpose

The purpose of the paper is to discuss current employment situation and role of vocational training in employment. The reason for choosing this title is a vast number of adults have either not been to school or not received any vocational training. The paper, first of all, discusses the socio-economic context and employment situation of Nepal. Then, it attempts to find out the gap between vocational training programs and employment. The paper further discusses the constraints and obstacles regarding the vocational training and employment policy and practices in the context of Nepal. Within the scope of the qualitative research method, the data were gathered through the examination of the written documents. The documents related with vocational training, employment and socio-economic conditions of Nepal was examined with the methods of descriptive analysis. The paper is concluded based on the information of the literature and authors' individual observation and experience at vocational training in Nepal.

Socio-Economic Context

Nepal is landlocked country surrounded by India in east, west and south and by China in north. It offers a panorama of wildest mountain ranges, exotic wildlife, exciting waterways, fascinating temples and monasteries, colorful ways of life and rich cultural heritage. It is topographically, culturally, linguistically, and ethnically very diverse despite its relatively small geographical size. It has three eco-zones (i.e. Mountain, Hills and Terai) that feature high mountains with harsh environmental conditions in the North to flat lands with tropical weather in the South. Nepal is a mosaic of many different cultures, languages and religions. The population census (2001) has recorded more than 101 ethnic groups in Nepal with ten major ethnic groups occupying 69% of the population. In addition, there are 92 different languages and a number of dialects having status as mother tongue. Nepali language is prominent both as the lingua franca of the country and the state language. In terms of population by mother tongue, about 48.61% speak Nepali, 12.30% speak Maithili, 7.53% Bhojpuri, 5.86% Tharu, 5.19% Tamang, 3.63% Newari, 3.39% Magar, 2.47% Awadhi, 1.49% Gurung and 1.47% Limbu. Given this kind of cultural and linguistic diversity, it is a major problem that there is a centralized national curriculum with little provision for flexibility and localization and that the language of instruction is Nepali.

Numerous roads and bridges have been built over the past 50 years, and other infrastructure developed, but still large swathes of the population live many days walk from the nearest road head, and without ready access to basic facilities such as drinking water, health services, schools or rural electrification (or at least to those of any quality) in Nepal. Deaths and permanent injury as a result of geographical isolation – including being unable to reach medical services or receive appropriate treatment in time, coping with the drudgery of bearing heavy loads up and down mountainous slopes, or suffering accidents crossing rivers, etc - are common. Fertility rates are high (partly but not entirely due to lack of access to birth control), with maternal and child mortality also being high.

The basis of the rural economy is labor-intensive agriculture, cultivating fragile soils and raising livestock for low returns. Land fragmentation is extreme, and many households have insufficient land for food security. Given that opportunities for earning beyond basic wage labor are scarce, out-migration (to urban areas or out of the country) is an inevitable and widely practiced strategy – both seasonal and longer-term. Indeed, remittances represent a substantial input into the rural economy, but they are often poorly managed. Opportunities for savings and credit for households to invest in health, hygiene and education are also limited. The following table shows the farm land ownership and distribution.

Table 1
Farm Land Ownership and Distribution (Average Holding with Percent Household and Area Owned)

Holdings	Percent holdings	Percent area (ha)
<0.50 ha	46.93	14.70
<1.00 – 0.50 ha	27.22	24.18
>1 ha	25.85	61.12

Source: Central Bureau of Statistics. (2001). Agricultural Census.

The social context of Nepal provides an additional twist to the geographical and economic gap between people living in remote areas and those living in or close to urban areas. Traditional Nepali society is extremely hierarchical, structured by caste and class - with the higher castes (particularly Brahmins, but also Chetris and Newars) dominating the hill peoples (such as Tamangs, Gurungs, Sherpas and Majhis) and practicing severe discrimination against the "untouchable" occupational castes or Dalits (shoemakers, blacksmiths, tailors, etc). It is the hill peoples and (to a lesser extent) Dalits who are more commonly found in remote areas; furthermore, each ethnic/caste group tends to be fragmented – meaning that it is difficult to come together with a united voice. Poor literacy levels due to poor schooling and lack of information on political and human rights have also contributed to such groups being generally excluded from political decision-making processes. The same can largely be said of women – although gender relations vary according to caste, class and ethnicity.

Nepal's performance on the economic development front since turn of the century has lagged behind that of the other South Asian economies. It is now where Sri Lanka was in 1960, Pakistan was in 1970, and India and Bhutan were in 1980 (ADB, DFID & ILO, 2009). The HDI (Human Development Index) represents a push for a broader definition of well-being and provides a composite measure of three basic dimensions of human development: health, education and income. Between 1980 and 2010 Nepal's HDI rose by 2.4% annually from 0.210 to 0.428 today, which gives the country a rank of 138 out of 169 countries with comparable data. The HDI of South Asia as a region increased from 0.315 in 1980 to 0.516 today, placing Nepal below the regional average. The HDI trends tell an important story both at the national and regional level and highlight the very large gaps in well-being and life chances that continue to divide interconnected world.

Table 2
Human Development Index: Trends 1980 – 2010

Year	World	South Asia	Nepal
1980	0.455	0.315	0.210
1990	0.526	0.387	0.316
2000	0.570	0.440	0.375
2005	0.598	0.481	0.400
2010	0.624	0.516	0.428

Source: UNDP(United Nations Development Program)

On the poverty front, remittance flows and investments in rural infrastructure have helped reduce poverty incidence from 42% in 1995/96 to about 31% in 2003/04. An emerging concerns is the sharp rise in inequality- in terms of the Gini coefficient, inequality increased from 0.34 in 1995/96 to 0.41 in 2003/04 (NPC, 2005). The reasons for such decrease in poverty are the wages increase in agricultural and non-agricultural sectors, increasing urbanization, rise in the economically active population, and huge amount of remittances. The empowerment approach stresses enhancing people's abilities to realize their basic rights and exercise the freedoms promised by democratic forms of governance. Together, empowerment and democratic governance structures have the potential to make development equitable and inclusive. If human development flourishes best when it draws on the indigenous capacities of a country, Nepal has many rich sources to mine. The following table shows the existing situation of Nepal.

Table 3
Dimensions of Poverty

Development index	Mountain	Hills	Terai	Nepal
Poverty rate	32.6	34.5	27.6	31
Human poverty index				39.6
Human development index	0.38	0.51	0.47	0.47
Overall human empowerment index	0.35	0.45	0.47	0.45

Source: UNDP. (2004); NLSS. (2003/04).

Although GDP (Gross Domestic Product) registered an impressive 3.5 growth in 2009/10 compared with 3% in 2006/07, the surge was largely due to timely rains leading to a good harvest of main agricultural crops and a rise in tourist arrivals, and not due to major improvements in economic fundamentals. Nepal's growth in total investment and fixed investment rate has been the slowest in South Asia. Break up of private sector investments in 2006/07 suggest that the investments remain low particularly in infrastructure development and agriculture. Moreover, the global recession threatens to drastically reduce the inflows of remittances and tourists.

Nepali economy now is facing various problems such as high inflation, low economic growth, declining productivity, increasing unemployment, uneasy investment climate, unequal development, climate change, high and low rainfalls (Budget statement, 2009). The proportion of Nepalese households that received remittances rose from about 23% in 1995/96 to about 32% in 2003/04. Access to education and vocational training remains inequitable and is partly responsible for unequal access to opportunities. People residing urban areas and the highest expenditure group, tend to have more years of schooling than others earned very large premiums in 2003/04. As a result, per capita expenditure grew by 76% for highly educated people during 1995/96 – 2003/04, while it grew by only about 42% for the population as a whole.

According to the Nepal Living Standard Survey (NLSS) the poverty is closely related to issues of geographic location, caste, and gender, and there are high levels of socioeconomic disparities. For example, the literacy rate varies notably by gender,

location and ethnicity. As evidenced by 2001 census, 65.5% males and 42.8% females are literate. Similarly the rural and urban literacy rates are 51.0 and 71.9 % respectively, while by development regions the literacy rate in the Western Development Region is the highest (i.e. 59.3%) and that of the Far-Western Development Region is the lowest (i.e. 48.7 %). The literacy rate also varies according to ethnic groups as evidenced by the fact that while Kyastha, Thaklali, Hill Brahmin, Bangali, Newar, Maithali Brahmin have the rate of 82.05%, 75.66%, 74.90%, 72.51%, 71.22% and 71.21% respectively, deprived groups such as the Dom and Mushahar have literacy rates of only 9.39% and 7.28% respectively (Dahal, 2003). The following table shows the education status of population aged 15 and over.

Table 4
Population Aged 15 and over Level of Completed Education

Description	Male (%)	Female (%)	Total (%)
Never attend school	32.4	58.2	46.7
Less than primary	13.2	8.8	10.7
Primary	16.7	10.9	13.5
Lower secondary	11.2	7.0	8.9
Secondary	17.0	10.4	13.4
Higher secondary	5.4	2.9	4.0
Bachelor and masters	3.3	0.9	2.0
Others	0.7	0.8	0.7
Not stated	0.1	0.1	0.1

Source: NLFS. (2008).

Nepalese have been migrating to work for the past 200 years, so it is not a new phenomenon. Labor migration is a business and like any business it is driven by the laws of supply and demand. However more than three quarters of those going abroad for employment do not even have the most rudimentary of skills in their hands. Seeing the way Nepali migrant workers are cheated by middlemen, harassed at the airport on departure, ill-treated by staff in Nepal's own national airline and extorted when they return, it is hard to believe that they are the pillars of the country's economy. No major impact study has been done on how the money that the workers send back is spent. With food prices increasing, a larger chunk of it probably goes to the upkeep of the family back home. In other words, what is the social cost Nepali families' pay for overseas migration? Is it worth? How Nepal can maximize the benefits and minimize the risks of foreign employment until Nepali workers find jobs for them at home? In 2007 alone, 754 Nepalese died in the Gulf and Malaysia. Besides accidents, there is a mysterious increase in the number of workers whose deaths are registered 'heart failure' in the gulf. There has been an alarming increase in cases of domestic violence, even murder, due to suspicious of infidelity. The spread of HIV, divorces, children falling into bad habits due to lack of supervision are other social side-effects.

Employment Situation

Nepal is predominantly a rural country where 84% of 29 million inhabitants live in rural areas. The agricultural sector is contributing almost 40 percent to the national GDP. It has been estimated that the total labor force growth rate will be 2.6%. Most of them are either school dropout or those who failed School Leaving Certificate (SLC) examination without employable skills. Despite some relief in the employment problems of the country due to an increasing access of Nepali people in the labor market abroad, the number of youths who do not have access to employment opportunities is also large. In the latter period, the number of non-skilled youths as well as educated unemployed has also been increasing fast. Hence, effectively addressing the problem of unemployment has been another challenge (Budget Speech, 2009/2010).

The great majority of people in Nepal are based on seasonal agriculture which gives them only about a ninety days work in a year. Working just for 3 months is not sufficient to fulfill entire leaving expenses of their family round the year and at another side, due to limited industries and trade houses, most of the youth have difficulties to find a job after completion of their School/College. Lack of job is a cause of poverty which puts people in the frustration and that may create lots of social/economical problems. Conflict has been identified as a key creator of extreme and long-term poverty through damage social, economic, institutional and physical capital, and loss of livelihoods and destruction of personal assets, disruption of markets, breakdown of informal coping mechanisms and social cohesion and loss of human capital through disruption of education. Conflict may be accompanied by weakened state capacity and legitimacy.

The total number of currently employed persons increased from 9,463,000 in NLFS (Nepal Labor Force Survey) 1998/99 to 11,779,000 in NLFS 2008. The employment-to-population ratio (the proportion of persons aged 15 and above who were employed in the survey reference week) has declined from 84.3 percent in 1998/99 to 81.7 percent in 2008. On the other hand the proportion of paid employees has increased from 16.0 percent in 1998/99 to 16.9 percent in 2008. Moreover based on the classification of industry 73.9 percent people work in the agriculture sector and 26.1 percent are engaged in non-agriculture sector. Among the employed persons, 68 percent worked 40 hours and more, 20 percent 20-39 hours, 11percent 1-19 hours and an insignificant proportion reported that they did not work in the reference week in 2008 (Central Bureau of Statistics,2009).

Over the last 10 years, underemployment among the country's labor force has increased from 32% to 42%. The increase in underemployment rates indicates a lack of capacity of the local economy to provide productive employment opportunities for the growing labor force. In particular, underemployment among the unskilled labor force, which has no or little formal education, is high. In compare with urban and rural, urban rate of unemployment is high which is 14.2 and rural is 4.2. But in underemployment urban rate is 29.25 and rural is 32.51. Due to limited education, many women face additional challenges regardless of employment generation.

It is necessary to make involvement of the youth and adult manpower who were

taken out of school or not admitted to the school , illiterate and not obtained any kind of skills either technical education or vocational training of income generating activities for their livelihood (TEVT Policy, 2007). In this context, due to the lack of productivity of the manpower involved in domestic or overseas employment, various problems are appeared in employment sector. Non-Nepali workers are displacing the Nepali workers both in formal as well as informal sector. The income and labor situation becomes an alarming way. The poor and better-off restructure their livelihood activities in strikingly different ways: poorer households have turned to low-paid agricultural wage labor, while more advantaged households have taken on better-rewarded work through migration, or investment in agriculture. Diversification of livelihoods has not improved gender relations: on the contrary, migration of the male labor force has led to heavier exploitation of women in agriculture in Nepal (Blaikie & Seddon, 1998).

Nepalese enterprises have been experienced problems in labor market concerning competitiveness, motivation, creativity and labor flexibility. The productivity, competitiveness, motivation and creativity of workforce are deteriorating because of the lack of appropriate education and training. The areas of vocational education and training are poorly developed. The workforce development and foreign employment had operated in isolation. This is due to lack of overall planning, labor market information and coordination. Absence of such coordination mechanism makes it difficult to devise the training system to respond to the skill shortages faced by the industrial sector (Joshi, 2005). Public sector employment is disappointing due to administration reform programs. Women population into the labor market is increasing due to the change of economic base from agriculture to industry. Nepal has a national Labor and Employment Policy endorsed in 2006 but never implemented. The need now is for the Labor and Employment Policy and sectoral policies to be widely reviewed by the social partners and also required to review of institutional capacity at both central and decentralized levels from the standpoint of improving the articulation between the two and endeavoring to remove any bottlenecks that could impede the success of the Policy (ILO, 2008).The following table shows the foreign employment situation of the country.

Table 5
Population Aged 15 and over Level of Completed Education

Cumulative number of foreign employment		Going out for foreign employment		Countrywide data of foreign employment (2009/2010)	
Year	Number	Year	Number	Country name	Number of people
2001	250,000	2006/07	204,533	Malaysia	113,900
				Saudi Arab	63,700
2007	500,000	2007/08	249,051	Qatar	57,340
				United Arab Emirate	33,840
2008	800,000	2008/09	219,965	Kuwait	8,255
2011	1,500,000	2009/10	294,094	Oman	3,285
	projected	2010/11	354,700	Others	13,774

Source: Department of Foreign Employment Promotion.

Nepal has to compete with other countries for the price of labor and to compete; Nepali workers need to be more skilled, productive and disciplined. Economists and experts say that aside from facilitating paperwork for overseas workers and protecting them from exploitation, there should be an urgent campaign to upgrade their income by giving skills training before they go. Simple vocational training could easily double or triple the annual income. Most Nepali migrant workers work in restaurants, department stores and plantations for $ 200 a month. A semi-skilled laborer is paid twice as much as unskilled labor and a skilled worker can earn up to 10 times higher salary. If Nepal started a coordinated policy to upgrade skills, there will be rise of 25% in remittances from the same number of workers. Neither recruiter nor employer can ever cheat a skilled worker who has been trained and knows his rights. Also get better treatment at work; they enjoy more safety, security facilities and health insurance. Above all, they can live with dignity in an alien land. The government has announced strict punishment for rogue recruiters, but that doesn't seem to deter them. Expert says incidents of cheating could go down dramatically if the government makes vocational training or technical education mandatory. The following table shows the occupation of the currently employed population.

Table 6
Percentage of Currently Employed Persons Aged 15 Years and over

Occupation	Total	Male	Female
Legislators, senior officials	0.6	1.1	0.2
Professionals	1.7	2.8	0.8
Technician and assistant. professionals	2.0	2.7	1.3
Clerks/Office assistants	1.0	1.8	0.3
Service workers	7.3	9.3	5.5
Market agriculture	3.1	2.7	3.5
Subsistence agriculture	64.0	52.9	73.7
Craft and related workers	8.4	11.6	5.5
Plant and machine operators	1.4	2.7	0.2
Elementary occupations	10.5	12.2	9.1
Armed forces	0.10	0.10	0.0

Source: NLFS. (2008).

Nepal lacks skills manpower in many areas. That clearly affects the whole economy and well-being of people and nation. Young people from rural, poor and challenged backgrounds have limited opportunities to improve their situation; resulting in children ending up on the streets, children ending up in very bad labor circumstances and people leaving country.

Education, Training and Development Program

The education system of Nepal consists of 5 years (grades 1–5) of primary

education, 3 years (grades 6–8) of lower secondary education, 2 years (grades 9–10) of secondary education, and 2 years (grades 11–12) of higher secondary education. A school leaving certificate (SLC) is awarded by a centrally administered national examination at the end of grade 10. The Government is considering integrating grades 6–8 into primary education and grades 11–12 into secondary education, making for a fully integrated school education from grades 1–12.

According to the present school system of Nepal, there is no technical vocational subject related with technology in primary and lower secondary level school courses. At the second stage of secondary level (after ten), the students have the opportunity to study two fields: i) academic, and ii) technical and vocational education. In the academic field, there is a separate stream of Social Sciences, Management, and Science. The technical and vocational field of study has streams like Agriculture, Forestry, Construction, Health, Computer and Information Technology. The Council for Technical Education and Vocational Training (CTEVT) is responsible for technical and vocational education and training in Nepal. Higher technical education is provided by the universities. More sector-specific training programs are offered by different sector departments such as cottage and small industries and tourism. Excluding the universities, there is an estimated national training capacity of about 50,000 trainees annually. The school-based TEVT began in 1971, with the expectation to develop students' marketable skills upon completion of school education. However, this program could not be sustained and the concept of trade schools under CTEVT was developed. Some schools are developed as annex schools affiliated with CTEVT.

The reality with respect to education is that not all students who complete different levels of school education will pursue higher-level education. There are several terminating points during the school period. Less than half of all children complete the primary cycle and only 15% of those entering grade one reach grade 10, even after repeating several times; less than half of the secondary level students pass the SLC examination; pass rates in higher secondary and at the University are comparable . Most of the students who leave school after completing or failing certain grade or level are either exposed to the world of work because of economic and social reason or join Technical Education and Vocational Training (TEVT) centers that are run by or are affiliated with the CTEVT.

Poverty alleviation/reduction has always been a major agenda in development plan since the beginning. The 10th Five Year Plan (2002-2007) and Three year plan (2007-2010) addresses education in relation to poverty and poverty reduction through a number of policy objectives that go some way towards acknowledging the multi dimensional nature of poverty. The plan further stresses that education should be job oriented, skill oriented and productive. In such situation of the country, some NGOs and INGOs scattered across the country are helping the government in various socio-economic aspects such as poverty reduction, education, healthcare, tourism, the disabled, the dalits, community forestry, women and children, corruption control, local development and micro-finance. Other concern areas are emergency relief, construction works, skill development and saving and credit programs.

For the last 3 decades Nepal government has been expanding a substantial amount in providing formal and technical education, including vocational and professional trainings. It is estimated that about 400,000 people in Nepal (220,000 males and 180,000 female) have received vocational training outside the school system. The major subjects of vocational and professional training are dress making/tailoring (mainly for women), agriculture and animal husbandry, health related training, computers, teacher training, typing/secretarial driving skills and electrical (almost males). 80% of these training last less than six month. In fact, in a quarter of all cases the training lasts less than a month. Many of the courses in agriculture and in health related topics last for less than a month (NLFS 1998/99). But there is an increasing demand for and concern about the quality of manpower being produced by various institutions. It seems necessary to review the technical vocational education and training policy, training packages and curriculum being offered by the universities, CTEVT technical schools and vocational training institutes so as to meet the demand of skilled and competent work force by the various sector of economy. An integrated national vocational training policy need to be adopted for improving the quality of working life and developing human resources needed to face challenges of growing competitive environment.

Vocational training plays a useful role in developing skills of the workforce. Different agencies like UNDP, ILO, ADB etc. are contributing to provide skill and vocational training in the related field. Each contributor has a target group, but there is an overlap and duplication. Each agency has its own objectives, and their training courses are justified in terms of their objectives but not the necessity of the users or employers. Government and NGOs initiated poverty alleviation programs are emphasizing vocational training, saving and credit as well as social mobilization components. The programs which are targeted to promote rural employment are Participatory District Development Program, Local Governance Program, Vocational Training and Community Development, Skills for Employment Project, Training for Employment, F-skill, Rural Development Banks and credit operations of the NOGs engaged in banking services. Presently, more than 30 NGOs are working as micro–credit institution with permission to operate from the Nepal Rastra Bank (Central Bank of Nepal). In addition there are other NGO programs like Swabalamban (Rural Self Reliance Development Program) which was initiated in the mid–eighties under the umbrella of an NGO.

The good news is that vocational training is making its way on to the radar of the various influential bodies that have the power to generate change. For instance, Skill for Employment Project has been established with a target of creating 80,000 skilled people in Nepal. The main purpose of the project is to promote poverty reduction by increasing the engagement in domestic (wage and self) and foreign employment through market–oriented short term (MOST) skills training particularly for women, dalits and disadvantaged groups. This is 6 year project started from 2006 and will be completed at March 2011. The total cost of the project is US $25 million. There is growing engagement by the Asian Development Bank, the Ministry of Labor and Industry, industry organizations like FNCCI, private institutes and various consultants who

recognize the importance of skilled and employable youth population. The challenge for Nepali policy makers is to ensure that both the supply-side players i.e. the government and the private sector, enter into a symbiotic relationship to battle the perception issue plaguing the demand for vocational training. They need to work with each other to create impact on a large-scale to plug the massive human resource gap. The government has the advantage of existing infrastructure, credibility and scale, where as the private sector is innovative, dynamic with strong links to the industry space. At the same time, industry is recognizing the importance of having skilled workers and is coming forward to actively involve itself – we can see this in the form of FNCCI adopting trade school (Elam Prashikshana Kendra) entering into a partnership with government organization CTEVT.

Access to credit is extremely important to promote the employment through micro enterprise development program. At present about 10,000 saving and credit groups are operating in the country. Apart from providing access to credit, these programs have tremendously helped rural people overcome economic dependence and promote their employment opportunities through skill training. The CTEVT has been implementing vocational training and community development program aimed at harmonize and improving rural life since 1992. The approach emphasis on promotion of community development organization through social mobilization combined with skill training, demonstration and implementation of small scale projects in agriculture, health and livestock. This approach primarily focused on upgrade the competencies of the villagers so that they become employable and manage to sustain process.

Vocational Training Centre of labor department is working in the area of vocational training since 30 years. The main purpose of the training centre is to promote employment opportunity of the economically deprived people through skill training. The training centre conducted training in more than 28 courses in different sectors. Franchising Skill (f-skill) and Training for Employment (TfE) project financed by Swiss Development Cooperation (SDC) also initiate improvement of working skill and ensuring employment of poor and disadvantage. The policy and programmed for FY 2008/09 has made a special provision of "Youth Self-Employment Fund" demonstrating a political commitment with a priority for the development of demand-based TEVT programs.

Constraints and Obstacles

The biggest constraint in Nepal is the wide gap between policies, plans and programs and their actual implementation. Lack of political stability, weak governance, inadequate political commitments, infrastructure shortcomings, labor market rigidities, industrial relations problems, inequitable access to opportunities, inadequate resources and inefficiency of the public systems have undermined growth and poverty reduction. Rural especially the disadvantaged, have no access to training and commercial banking systems as they lack collateral, and the necessary information, education and knowledge

of how to formulate business plan.

Nepal current education policy as "a factory that churns out jobless people", there needs to be a complete transformation to make it work. The main trouble is that CTEVT, Department of Cottage and Small Industry, professional and Vocational Skill Development Directorate and other government institutes can train only 40,000 peoples a year where as 8 times that number enter the job market annually. Lack of access to meaningful education and training and decent work opportunities, as well as channels for exploring skills and talents, often combine to push people towards the margins of society and increase the likelihood that they will fall into the poverty trap. The investment in vocational training is just not sufficient; education should get 25 percent of the national budget and of that one-third of the money must go to technical and vocational education. The educational policy should be employment oriented, accessible, scientific and free for all the citizens of the country.

The challenge has been to change gender biased perceptions with regard to technical training and promote broader, more diversified training courses for women, including courses traditionally considered as exclusively male domains.

Conclusion and Recommendation

National TEVT systems of Nepal need to develop the model giving value to the vocational training and skills that will help the workforce become more flexible and responsive to the needs of local labor markets, while competing in the global economy. Education and training are rapidly becoming inseparable, especially as the notion of a job for life is being replaced by the necessity for lifelong learning. TEVT systems must also be open and all inclusive to give even the most underprivileged access to learning and training. Because of continuous change in economic, social and technology, skills and knowledge become quickly out-of-date. People who have not been able to benefit from formal education and training must be given opportunities to acquire new vocational training and skills that will give them a second chance in life and at work.

Vocational training would not just benefit workers going abroad, but also give jobs within country. It should primarily be targeted at the domestic job market with a coordinated employment generation campaign in agriculture, finance, infrastructure and manufacturing. Development activities should be oriented more towards remote areas for regional balance and women, who constitute half the population, emerging as a powerful part of Nepal’s workforce. Focus on human resources development in a cost effective manner should be emphasized and different programmed should be launch to promote self-reliance and expand self-employment opportunities. Individuals should be able to choose their own job in accordance with their wishes and training so that the best possible use of cultural, technical and vocational qualifications is guaranteed.

The private sector plays a very significant role as it provides and acts like the knowledge unit and helps to regulate the kind of students put out there. The technical and vocational education should demand-led and students should train as per the needs

of the employer and business. The relationship between private sector and vocational /technical training is a mutually beneficial because private sector gets better workers and students where gets better jobs. In Nepal, the FNCCI has a huge role to play. Because of culture and rich heritage, Nepal can sustain in tourism for a long time and construction and agriculture, which doesn't necessarily mean learn from other countries, could be the feasible professions for the Nepali people.

The department of employment should charged with adapting the areas of labor market organization, vocational information and guidance, integration into working life, technical relations with enterprises and enterprise and job creation to changing trends - taking regional and local structures into account - and with identifying the needs of specific groups. It is also responsible for planning, updating and monitoring the implementation of technical and normative instruments and legal regulations.

The future of technical education and vocational training institutions in Nepal will depend on their ability to link their training programs with employment demands. Institutions that are successful in placing their student in high wage jobs will be always in demand and will not encounter financial problems. For future survival, vocational training programs in Nepal should emphasize employment outcomes so that these programs will be considered an effective means for promoting employment and productivity. Vocational training system needs to adapt to the rapidly changing demands of the labor market, respond to the employers' needs, and provide work-based experiences to its students in order to establish effective transition from training to employment.

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