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Developments in Education and Training in Japan

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The aim of this paper is to describe developments in education and training in Japan that are a reaction upon the many changes in work, workprocesses, the economy and society.

Keywords: Education, Training, Change

Problem Statement

The population of Japan was 125 million in 1995. It is expected to reach a peak in 2000 and to decline throughout most of the 21st century due to an aging population and a falling birthrate. Between 1920 and 1995 the labour force increased from 26 to 66 million people. In 2005 the labour force is expected to reach a peak of 68,5 million people and then to decrease. After 2010 this decline is expected to be dramatic (Debroux, 2003).

At the beginning of the 20th century Japan was an agricultural society. Between 1955 and 1974 Japan experienced an area of high speed growth and the change of an agricultural society in an industrial society with 14 percent of the workforce employed in the agricultural sector, 34 percent in manufacturing and construction and 52 percent in the tertiary sector in 1974. Between 1974 and 1989 Japan felt the influence of the harsh and international environment of the global economy (the oil crisis of the early 1970s, US abandoning the gold standard, floating exchange rates linked to the dollar, 'voluntary' restraints on the export of Japanese goods by the US) and this slowed the pace of economic growth dramatically (Allinson, 2004). Yet with world wide expanding industries such as auto making and electrical manufacturing, the world's largest financial institutions, and an expanding retail trade Japan remained very prosperous. In the fifteen years after 1974 the GNP grew with an average of 4 percent a year. The period after 1989 in the 1990s is characterized by a financial crisis (the 'bubble economy' burst and the Japanese banks suffered untold losses), replacement of production facilities outside Japan, deflation and a shrinking domestic market, that was the driver of the Japanese economy (Allinson, 2004). In 1995 regular employment fell for the first time in twenty years (Japan Labor Bulletin, 1996). Unemployment rose from 2.1 per cent in 1991 to 5.5 per cent in december 2002 (Japan Labor Bulletin, 2003).

At the beginning of the 21th century Japan has developed into a service economy. In 2000 34% of the workforce was employed in industry, 60% in the service sector and 6% in agriculture (OECD, 2000).

In economical terms the 1990s is a period of 'immobility' also mentioned as 'the lost decade', although Japan retains a high standing internationally, in 2000 its GNP was second only to that of the US. Japan has no natural resources and is for its industrial development dependent upon a good educated workforce. The export sector (10 percent of the GNP) is dominated by large manufacturing firms. Yet most (99 percent) Japanese are employed in medium and small enterprises (Allinson, 2004).

In the last decades the above mentioned changes in the Japanese society, economy, work and workforce have made it necessary for Japanese companies to review their education and training systems and to adapt them.

The Japanese Educational System

Education is compulsory and free of charge between 6 and 15. Japan spends about 4,5% of its GNP on education. The Japanese educational system is characterized by a large number of private institutions. These private schools absorb 70% of all students! Private schools for secondary general education absorb 30% of the pupils. Pupils and their parents provide about 25% of all educational costs. The Japanese general school system is a 6-3-3-4 system. Between age 6-12 (6 years) pupils are educated at primary school. Followed by 3 years in middle school (12-15). Between 15 and 18 (3 years) either general high school can be attended as a preparation for university or a vocational high school.

Also at the age of 15 a choice can be made for a lower form of vocational education. At the age of 18 a choice can be made between two year colleges (18-20) or four year universities (18-22) (4 years) (Kanaya, 1995).

Characteristics of the Japanese Educational System

Japan is well known for having the best educated population in the world. The educational system is characterised by very high enrolment levels in secondary and higher education. About 80% of the pupils start tertiary education and about 70% of all Japanese people enter the labour market with a certificate of tertiary education. The educational system produces high school graduates with a broad general education. Training in occupational and vocational skills is seen as the task of companies (Dore & Sako, 1998).

A second characteristic of the Japanese educational system is its high degree of 'inclusion'. Japan has the highest educational participation in the world. More than 90% of the Japanese labour force received 14 years education. Only about 4% of the Japanese pupils start working at 15 (OECD, 2000). More than 95% stays at school until 18. After the age of 18 about 33% starts working (Dore & Sako, 1998). And despite the difficult entrance examinations 72% of the pupils went to general higher secondary education in 1997 (15-18). In OECD countries this average is 46%. The 28% of the pupils that attended vocational education in Japan were especially taught at school (OECD, 2000).

A third characteristic of the Japanese educational system is that all post-compulsory educational institutions have entrance examinations and since two decades a central examination system exists that acts like the American SAT. Top universities only admit the best students (Dore & Sako, 1998).

A fourth characteristic of the Japanese educational system is the meritocratic selection, the 'hensachi' system, the slicing of the age group into ability homogenous segments all the way down the spectrum; it is not just a matter of creaming off the top quarter. It is the aim of the Japanese educational system to educate the best students to fill the best jobs by way of meritocratic examinations, that are characterised by grueling competition. This is why Okada (2001) describes the Japanese society as a *degreocracy society*. The combination of this examination system with lifetime employment makes excellent school performance a very serious matter for students. It means that they have a very hard time at school until they gain entrance to a top university. Two things are very important in this educational system. First pupils have to make an important choice that is essential for their future career very early at 15. Secondly it is hardly possible to change from general to vocational education and vice versa (Dore & Sako, 1998).

A fifth characteristic of the Japanese educational system are the relations between employers and universities and colleges (Robinson, 2003). Lifetime employment means that initial recruitment is recruitment for a career, not just for a first job, so a great deal is at stake in the educational competition. This motivates students to work very hard and to supplement their school education with education in private cram schools, to take the entrance examination of and be allowed to enter a well known top university, because a good student will already be selected during his studies in a top university by a well known large company that has many training facilities and offers good career opportunities. Well known companies have each certain top universities and colleges from which they recruit new employees (Van Wolferen, 1989).

A sixth characteristic of the Japanese educational system is the absence of a national scheme of vocational training similar to the one in Germany. Only 10% of the labour force acquires vocational qualifications before starting to work. These students obtain jobs in small and medium sized companies that have few means of training. Vocational and educational skills are especially trained in larger companies with many training facilities and possibilities to learn on-the-job for example by rotation (Begin, 1997).

Innovations in the Japanese Educational System

Traditionally the Japanese educational system is characterized by a broadly based general curriculum, that produced highly patient and cooperative people with broad skills. These skills were sufficient for the industrialised society that mass-produced standardised goods in the second half of the 20th century. But changing economic conditions in the 1990s pressure the educational system to produce graduates with the particular skills that modern companies require, such as originality and creativity, and skills that will be of specific value in generating the entrepreneurial drive (Debroux, 2003, Sakaiya, 1991, 2000). This is the reason that not institutional but curricular innovations dominate the educational reforms in Japan during the last two decades. Within Japanese educational policy four directions (OECD, 2000; Debroux, 2003) can be distinguished to correct the pressures of the prolonged economic recession at the end of the 1990s that has led

to reduced recruitment by enterprises, a weakening in employment tenure, and decreased resources for on-the-job training:

- Maintaining inclusiveness of the educational system, by minimising dropout at each transition point by:
 - special guidance and information for graduates
 - training programmes for the unemployed
 - recruitment subsidies for companies that recruit unemployed university graduates
 - equal opportunity legislation, since 1985
 - educational reforms such as measures to increase the vocational relevance of education
- Broadening links between education and the labour market. These links are currently strong but narrow, focused on the recruitment point. Examples of measures taken are:
 - national curriculum reforms: a new curriculum standard has been introduced in 2002 with 30 percent less hours of schooling, it is easier and increases the emphasis on such subjects as foreign languages, computing and welfare. Together with internships these reforms attempt to promote the vocational relevance of the curriculum in all schools.
 - the encouragement of integrated learning and ‘hands-on learning’ in secondary education
 - workplace experience for all senior high school students
 - teacher exchanges with industry
 - partnerships between educational and labour market bodies concerning the planning of for example internships
- Strengthening vocational education especially for the secondary level by:
 - attempts to clarify the role and status of vocational high schools
 - improving access to higher education for students from vocational education
 - reforms of curricula and internships within specialised high schools
- Promoting flexibility and individualisation by providing young people with a wider range of choices and a choice process that gives more weight to individual differences and preferences, and one that keeps options open for longer. For example:
 - Integrated high school courses which combine characteristics of both general and specialised high school courses. First introduced in 1994 and meant to develop individuality, choice and independent learning habits
 - Inter-school linkage system concerning exchanging credits between schools.
 - Encouragement of diversity: more opportunities for schools to develop their own approach
 - More career guidance in high schools

To summarize the reforms in Japanese education focus on the development of creativity and individuality of students replacing rote memorisation by hands-on learning with greater emphasis on demonstration and experimentation. Further students can choose more and from a wider variety of subjects. Last but not least students get more often the opportunity to acquire (some) experience in companies in internship programmes. A related development is the growing cooperation between companies, schools and universities in the area of education (internships) and training (post doctoral courses, research). However, these reforms are of little consequence for the education of the elite that goes to private schools and to the private elite universities (Cave, 2001).

Training in Japan

The Japanese culture has a collectivistic nature in which the (often lifetime) relationship between employer and employee is perceived in moral terms. The company resembles a family relationship with mutual obligations of protection in exchange for loyalty, a ‘community of fate’ (Debroux, 2003). Throughout the working life of the employee all practices of the company deliberately serve to construct, reconstruct and reinforce the affective ethical and social foundations and characteristics of the company. A new employee not only has to learn but also to internalise the unwritten rules of the company in order to fulfil his role as a fully integrated member of the hierarchy. Training is a benefit offered by the company and reinforces the employee’s dependence on the company. Completion of training (gaining a certificate) is an honor to the holder and his group, which entitles the holder to associate with higher-status groups (promotion). As such training plays an important role in social mobility and acceptance. Japanese companies place great importance on the concept of lifetime employment and large companies have a high commitment internal

labour market. This creates a unique context for skill development and learning opportunities for Japanese employees that compensates for the non-vocationally oriented educational system (Drost et al. 2002).

The remuneration system in Japanese companies is based on a skill-grading. In the skill-grading system there are two hierarchies one based on occupation and the other on rank. Rank remains the key element between workers of the same seniority and equal skills, because those with higher ranks earn more. The promotion in terms of rank is based on an assessment of the skill and ability improvement through evaluation and interviews. The pay component is based on merit and can be fin-tuned in a flexible manner to take account of changes in actual duties carried out by each employee during their career, the skill development training undertaken, the actual achievement of given tasks, the ability to nurture the subordinates' talent, as well as the improvement in attitude and behaviour. The employee can only progress one rank at the time and there is a minimum period of time and experience for any rank-up. Further the level of skill of an employee is supposed to accumulate all the time. Therefore demotion is not acceptable in this system. This highlights the importance of performance ratings and career development plans and indications of career progress to motivate young executives. Further the merit-based component of compensation is cumulative and over a career of 30 years or more it has a substantial impact on earning (Debroux, 2003).

Training and development tend to be planned and executed in a diligent and disciplined manner at every level in the company. Training in Japanese companies is thorough, lengthy and ongoing (Begin, 1997). This attitude to training is also grounded in the Confucian idea about responsibility for ones own development and the perfectionism of the traditional Japanese arts. Large Japanese companies have often large training facilities for managers as well as technicians (Drost et al. 2002). Compared with other countries Japanese companies offer their employees much more hours of training. In the car industry this is 370 hours per year compared with 46 hours per year in American car factories and 173 hours per year in European car factories (Begin, 1997). Yet the Japanese training budgets are not very high because learning and training on-the-job gets much more attention than off-the-job, caused by the widespread application of 'lean production'. In this production method the advantages of the (traditional) craft system are regained by using multi skilled workers and the inflexibility of the mass production system is avoided by using flexible automated machines to produce a wide variety of higher-quality products with less investment in tools, space and inventory. The multi skilled workers work in cross functional teams in which employees enlarge their knowledge and skills continually by being coached and by 'job rotation'. Technicians become broadly trained employees (generalists) with a broad knowledge of their company. Further there is a new trend of functional specialization of technicians.

A key recruiting strategy of large Japanese companies is to hire high quality, inexperienced high school (for lower level positions) and college graduates (for white collar or professional positions) at the beginning of their careers. These graduates are hired for their general knowledge and then tailored through substantial internal training (of several months) for the work in the company. Afterwards they may follow a specific career development program of positions that each take a few years. Movement is both horizontal and vertical. The horizontal movement develops the breadth of skills and the vertical movement increases the level of technical competence. Both the managers and the technicians are trained in-house. Large companies have the equivalent of community colleges and an institute of supervisory and technical training. Training concerns every employee in the company. The priority of seniority in promotion prevents that employees that train younger colleagues refuse to share their knowledge. Ten years ago managers were trained to be generalists. At present a manager works in a certain domain, but he is trained in all aspects of this domain. Two thirds of the Japanese managers is trained on-the-job (Tsurumi in Begin, 1997).

The Skills Testing System

In 1958 the skill testing system (gino kentei seido) run by the Ministry of Labour was established by the Vocational Training Law, as a reaction upon the shortages of qualifications of employees of small businesses (Dore & Sako, 1998). Nowadays different ministries such as the Ministry of Education and the Ministry of International Trade and Industry, the MITI, are involved in formulating and testing skills and with the certification of employees. There is an intensive collaboration with the employers. The Ministry of Labour has the most important role. In 1959 this ministry formulated and tested 5 skills in 1993 this number was grown to 133!

In the mid-1980s, the Ad Hoc Committee on Educational Reform distinguished four types of qualifications (Dore & Sako, 1998):

1. 128 qualifications legally required as a condition for exercising certain professional functions (pilot's licence, atomic power technician, dental technician, hairdresser etc.)

2. 29 qualifications legally required as a condition for assuming certain self-descriptions (candidate accountant, registered engineer, health visitor, dietician, sewage superintendent etc.)
3. 23 qualifications required for appointments to government posts (primary school teacher, technical superintendent of waste disposal works, home counsellor for working youth, etc)
4. 306 qualifications designed to certify and encourage high levels of occupational performance

The aim of this skill test system is to raise the efficiency level of those who already have jobs and of the companies in which they work. Less important is that employees are offered an opportunity to improve their marketability and often employees take part in the skills tests for their own satisfaction and pride. Until recently raising marketability was not so important because of lifelong employment. At present it becomes more important because 11% of all jobs are temporary jobs.

The main reason that employees take skills tests is that their employer wants them to. These skills are formulized for business and form an example of quality-consciousness of employers in the eyes of customers. These skills pay no attention to the personal development of employees.

Most skill tests can be taken at at least two levels, Grade 2 and Grade 1 in ascending order of difficulty. In 1993 Grade 3, the lowest level of competence was introduced for a few skills to give young people some work experience. In order to enter for a skill test, the applicant must usually have five years of work experience for Grade 2 tests and 14 years for Grade 1 tests. Further certificates of individuals are only valid for a few years (3 to 5 years). After that a new skill test has to be taken. A skill test is composed of a practical and a theoretical part that both have to be taken to obtain a certificate.

In contrast with the national British NVQ system, the Japanese skill system is not a national cross sectional system of levels. The gradation of qualifications within each trade or profession is independently arrived at according to what are deemed to be its own needs. This makes the Japanese skill test system much more flexibel especially for the intermediate and lower level skills, than the British NVQ system in which skills of a wide variety of occupations must be formulated according to certain rules within an inflexible framework of 5 levels. Another difference is that in Japan the state is heavily involved in skills testing whereas professional associations and educational institutions have far less control over the qualifying process than in most other industrial societies e.g. England. A third difference is that Japanese employees are not tested after taking a course like their English colleagues. For the Japanese certification at the second level is a test that is taken on the basis of at least 4 years of work experience at an age above 30 years. Certification of the first level, the highest, does as a rule not take place before the 40th year and after 8 years of work experience.

Qualifications function much more as a means of raising competence levels and contributing to the employee's advancement in the enterprise in which he is employed than as a means of certifying employability in the external labour market.

Typical for the Japanese skills testing system is that a very small expenditure by the state in maintaining a very extensive testing apparatus evokes a very great deal of learning at the monetary and effort expense of employees and of their employers (Dore & Sako, 1998).

Changes in the Training System

Because of the need to be more competitive, dropping profits, restructuring, outsourcing and budget cuts in Japanese companies the training system of Japanese companies changes. Japanese managers have always been involved in training and mentoring activities of their subordinates on a continuous basis but there was almost never a serious attempt to quantify and standardize these activities. Companies now handle training and development of their employees with greater sophistication. Companies are now using assessment centres to make the initial selection of their new employees while devoting more resources to off-the-job training, sending employees to external programmes or inviting experts to coach within the company. Also informal on-the-job training of multi-skilled workers is now increasingly supplemented with more formal training at in-house schools or even in-house universities (Sony, Toyota) offering a wide variety of courses given by professors and experts invited from outside. These developments include white and blue collar workers. However the traditional approach of Japanese companies to acquire knowledge by informal learning remains very important (Debroux, 2003).

As a consequence of growing competition in the 1980s and the recession in the 1990s, the manufacturing sector lost one million jobs. Part of the reason for this decline has been offshore investment by Japanese companies to reduce production costs (Sako & Hiroki, 1997). As a consequence job openings for high school and university graduates in large firms have declined in recent years. But there is evidence that small enterprises have increased their hiring of young workers during the recession. This explains why youth

unemployment has not grown much relatively (OECD, 2000). In large firms the loss of job opportunities due to the growing cost of maintaining employment of middle-aged and elderly workers is creating a displacement effect between those two segments of the population (Debroux, 2003). An other consequence of the recession is that now about 11 per cent of the employees has a temporary or short term contract.

Although recruiting midcareer hires would be much more profitable for Japanese industries with rapidly changing technologies for which a lack of labor mobility reduces the amount of specialization as well as the cross-fertilization of technologies and ideas across companies, the preference of Japanese companies for recruiting students for a career has hardly changed. Robinson (2003) explains that Japanese recruiting practices highlight aspects of Japanese organizational behavior and the Japanese labour market that are deeply embedded in the Japanese social structure suggesting that Japanese companies are not purely rational in their behavior but bound by social concerns and constraints and tradition. In addition recruiting practices of Japanese companies illustrate the embeddedness of the internal labour market of a company, the norms of what constitutes a desirable company and the selection of new recruits on the basis of organizational fit.

In Japan promotion has traditionally been linked to seniority and not necessarily with a higher salary. At present Japanese employees change companies more often as in the past and this has influenced companies to reduce the influence of seniority in promotions and to enlarge the influence of merit and the evaluation of performance (Debroux, 2003).

Post-war Japan promoted access to education for women leading to quasi-equality in the 1980s. Management practices however continue to treat female labour as temporary filling in an intermediated period between the conclusion of studies and marriage, and providing a flexible subsidiary reserve labour. Meanwhile, Japanese women are more and more assertive in society at large and at work. They are no longer content to remain on the periphery of the employment system. New opportunities have to be offered to persuade them to remain in the labour market based on attractive conditions and respecting the balance between work and family. As a consequence Japanese companies developed multiple career tracks. Besides the existing management career track for core personnel, and the general track for employees that are engaged in routine work, a third 'in between' track has been created. This track has been created to cope with university graduated female employees after the enactment of the Equal Employment Opportunity Law in 1986 to make better use of female workers' talents. This track is for employees who are involved in duties similar to those of the management career track but that do not need to be transferred away from their home base or envisage the adoption of special treatment in terms of working hours, holidays etc. A District Court judgement in Tokyo in February 2002 declared the creation of separate tracks intrinsically illegal, finding that it represents discrimination between male and female. It follows that workers must be allocated to particular tracks according to the content of work and not because of their gender (Debroux, 2003).

Conclusion

Although reforms in Japanese education and educational policy are visible and to be endorsed a few issues need extra attention according to the OECD report on Japanese education (OECD, 2000):

- measures to broaden links with the labour market, and in particular to increase career awareness and develop students' ability to take more responsibility for educational and employment decision making, and diversify the curriculum, should have as much priority within general education as within specialised schools (vocational education);
- the need to address social inequalities and especially gender inequalities more directly;
- the need for more effective 'second chance' opportunities for those for whom the first transition (from school to work) is unsuccessful;
- the need for educational policy-making to take account of changes in the labour market and the workplace, and in particular of changes in company-based training which have implications for the complementary role of education;
- the need to adapt regular data-collection arrangements to more prolonged, less institutionalised and more differentiated patterns of transition.

The strengths of the current Japanese educational system are the smoothness of the transition process, its inclusiveness and the high educational standards which it sustains. One of the main challenges for Japan is to maintain these strengths of the educational system, while responding to pressures for greater flexibility and differentiation.

In the 20th century Japanese companies developed and prospered on the basis of recruitment of graduates, lifetime employment, community of fate, welfare corporatism, and exclusion of women in the labour market. But at the end of the 20th century the Japanese society has changed a lot as a result of for example: globalization, an economic depression, a population that is growing older, more cultural diversity (Tsuneyoshi, 2004), higher educated women that want to work, young people that have their own ideas about work and a growing part of the labour force that has no lifelong contract.

The last decade Japanese companies have made a number of mistakes for instance in continuing to recruit massive numbers of young graduates although the economy was structurally slowing down, and subsequently, in being too slow to adjust their wage curves to the diminishing return on human capital. Nor did they anticipate the trend away from the adherence to the community of fate concept of professional relationships by the youth. Japanese companies are at the stage of trial and error in the transformation of their HRD and HRM practices (Debroux, 2003).

Transparent training and development procedures, pay and promotion schemes based on performance, the recruitment of women and midcareer hires and the diversification of career tracks are essential new HRD and HRM elements that need to become accepted by Japanese companies if they want to survive.

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