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Persistence and education: the formula for Japan’s economic success

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The evaluation of education systems with regard to the demands of the labour market and from the perspective of economic growth and of employment policies
Introduction

The Japanese are the dominant competition throughout the markets of the free world and hold important positions in the major business sectors. Many of the manufacturing industries have grown rapidly and now take world leadership positions. Japanese businesses other than manufacturing, such as banking, insurance, real estate, commercial aviation, and recreation, are also taking significant positions.

Much has been written about the economic success of Japan and several theories have been advanced as explanations for the success. There are those scholars that support the theory that a type of cooperative conspiracy exists between the Japanese government, corporations, and others in order to advance their shared interests. The participants, led by the Ministry of International Trade and Industry (MITI), conspire to achieve worldwide dominance of industry by tariff protection, tax relief, subsidies, and marketing agreements.¹

Others support the theory that Japanese businesses succeed because of their choice of competitive fundamentals. These competitive fundamentals include a strong bias toward growth which is closely linked to a desire to survive. Other fundamentals of this theory are the high attention given to the actions of competitors, the creation and exploitation of competitive advantage, and economically consistent financial and personnel policies.²
Another theory, about which much has been written, takes the position that much of the success of the Japanese is the result of the traits of the Japanese society which give its members inherent advantages when competing with Westerners. These key traits include homogeneity of the society, a national sense of purpose, commitment to their work, and a nonconfrontational personality.¹

These theories do not fully satisfy an explanation for the economic success of the Japanese. They do not address the importance of the educational system and the persistence element of behavior of the Japanese.

Japan's educational system is one of the main contributing factors to the nation's economic success. The high interest in education in Japan stems not only from an admiration of intellectual accomplishment but also from a very strong belief in the malleability of the human being. There is a strong belief that the persistence element of behavior instilled in young Japanese children is responsible for much of their intellectual accomplishment and resulting economic success.

Although lacking in natural resources, Japan is a nation exceedingly rich in human resources. It is apparent that the Japanese have a remarkable ability for creative adaptation of non-Japanese techniques and technology. Education in Japan is highly valued and diversified, and educational standards are uniformly high throughout the country as a consequence of strong central government control and a culture which strongly endorses such standards. A continuous stream of students passes through the schools and out into the labor markets of Japan as a well trained labor force. A high percentage of the students finish high school and graduate possessing the necessary skills to enter the labor market. Japan graduates
more science and engineering students than the United States and continues to maintain a competitive edge in these areas.

Persistence permeates all of Japanese society. The persistence element of behavior of the Japanese begins in infancy and it is continually reinforced and strengthened throughout the educational process. The term *gambare* (hold on, endure, don't give up) is heard continuously, always with a positive tone, to encourage anyone who is trying to achieve a goal, no matter how difficult or unattainable it may seem. The Japanese assume that it will take many years of intensive training and study to master any worthwhile skill, and any shortcut is seen as harmful because it is the persistence needed to attain the goal which makes it worthwhile.

On the other hand, there is a relative lack of persistence by young American children and a tendency to "give up" when performing tasks. Approximately 30% of U.S. students drop out of high schools in the United States. The result is a large number of U.S. students not properly prepared for the modern work world. The ramifications of this phenomenon leave the United States with a shortage of an educated workforce and the inability to compete in the global marketplace. This dropout factor and the lack of persistence in task performance have important implications in an age of rapid technological progress.

In a comparative study of task persistence conducted by the author in Japan and the United States, the conclusion was that Japanese children do exhibit higher task persistence under non-competitive conditions than children in the United States. The home/family relationships segment of the study revealed that there is a significant correlation between home/family attitudes and task persistence.
Education is viewed by the Japanese as being essential for the individual, family, and country. Perseverance, hard work, diligence, but above all, persistence, are considered important contributing factors to success in education. They believe that true experience of life can only be enjoyed through mental training (shuyo). Helmut Morsbach explains "when someone is undergoing training in Japan, it is a commonly held belief that the body is greatly malleable as long as the will is strong enough."

Confidence that an unlimited amount of energy can be derived from self (hara) is explained by Lebra. She writes that

Many a Japanese finds satisfaction in work deriving from energy expenditure, attaches moral significance to a steady flow of physical or mental energy, namely perseverance and endurance to the point of masochism and holds an optimistic belief in what one can accomplish through single-minded effort.

This practice of self-discipline has a recognized place in Japanese life. In the important matters of life, the Japanese feel that the demands on the body and mind are essential for achievement.

Educators in Japan believe that all students can achieve if they continue to persevere (gaman suru), be patient, and endure hardship, especially in the preschool and elementary years. For example, Cummings noted that one of the five major goals for one elementary school faculty in Japan was "to encourage the will to endure whatever is attempted." The Japanese believe that effort and hard work are essential to task mastery. Hess and his colleagues' 1986 study confirms the importance placed on effort by the Japanese.

In Japan poor performance in mathematics was attributed to lack of effort; in the United States, explanations were more evenly divided among ability, effort, and training at school. Japanese mothers were less likely to blame training at school as a cause of low achievement in mathematics. . . . Their children generally shared this view of things.
Japanese teachers believe that all students can be motivated to learn, thus a desire to do one's best in mastering tasks is greatly influenced by teachers and the school environment. Group activities are used extensively to motivate students. Young Japanese students are motivated to work hard and persist on the task at hand because the group depends on individual contribution for achievement and, in turn, the individual as a contributor gains self-recognition and reward. In other words, the Japanese learn, at a very young age, that group loyalty, effort, and persistence are essential if one is to live a happy life. Loyalty of an individual to the group remains one of the most important attributes of the Japanese. This structural tendency, which has developed in the course of history, is one of the major cultural characteristics of the Japanese.

Japanese Work Ethic

Motivation and Skills

The Japanese attitude toward work is at the very foundation of the successful Japanese economy. Along with this attitude toward work is the enduring essence of perseverance or gambare that every Japanese student has learned about and acquired during his school days. Gambare (hold out, stand firm) is instilled in every Japanese young child throughout his education, beginning with early childhood education programs, kindergarten, and the first grade. Before that, he has learned about gambare from his mother, his first and most important teacher. Gambare, to persevere in the face of all hardships and obstacles that may appear on one’s path, is a term heard and used continually in Japanese society, and the expression and the meaning are familiar to every Japanese child from the time of infancy.
Westerners often question how Japan has been able to achieve such colossus economic success in only forty-five years, since the end of World War II. Benjamin Duke argues that the old traditional values of the old Japan are ever present in the new and glistening modern cities such as Tokyo. The successful economic giant that Japan is today is based on a firm foundation with innate features still surviving from feudal days. Duke writes that “The foundation of this modern industrial supereconomic power is the old traditional values of this very old society. And one of the essential ingredients of the base of the modern is the enduring spirit of gambare—persevere—from the past. One of the most fortunate aspects of modern Japan is that the spirit of gambare existed as a fundamental feature of being Japanese long before Western industrial influences reached these shores.” The element of gambare is deep in the heart of the Japanese and it begins early in life and lasts a lifetime.

The term gambare is first heard by the Japanese child early in his life in his own home. He is constantly surrounded by family, relatives, and friends encouraging him to persevere, keep hanging on, not to give up. Because all Japanese are exposed to the spirit of gambare, it follows them from home to school and on into the workforce. Thus, the cry of gambare is heard continually from the factory floor to the President’s office. Individuals contribute to the group effort for the success of the enterprise at hand. Fellow workers will encourage one another to persevere, under all conditions and circumstances. The more difficult a task, the more often one hears gambare. Workers were encouraged by their teachers to persist when they were students and therefore, it is not unusual to hear the familiar ring of gambare in the workplace. When employees meet in the mornings for meetings
before the work day beings, once again they are encouraged to persevere, no matter what obstacles may fall in their path.

Duke points out that young children in Japan have gambare when they are learning to walk, learning to use chopsticks for their meals, and for other learning experiences in the home and outside. The Japanese media also employs the term gambare in all facets of television and radio broadcasting. The child hears others using the word gambare in conversations so he is well acquainted with it and its meaning. When the young child enters school, the challenge, seriousness, and significance of persistence become a part of the everyday routine of school activities. From the moment of school entrance, young children are encouraged and expected to persist on all tasks and in all endeavors undertaken. The promotion of gambare is used to encourage a student to do well on examinations and to try to do better when one's grades are not the best they could be. Young children learn very early that all accomplishments and achievements require sacrifice and effort. This makes the achievement much more worthwhile. From this point onward, Japanese children will continue to persist throughout all their school years and will continue the art of perseverance into their adult lives and their place of employment. Whether employed as a greeter in a department store, or as the head of a large corporation, Japanese workers at all levels persevere. But it is important to remember that the groundwork for continuous perseverance has been laid by the Japanese family at the day of birth and continues throughout a lifetime of each individual. Even though what students study very hard to master may not be of any use in their future career plans, the path to learning and mastering the material is seen as essential to the entire process of perseverance.
Kenichi Ohmae, of McKinsey and Company, writes about his early education in Japan following the end of World War II.\textsuperscript{13} During this crucial period, the idea of "how Japan could survive" was constantly heard in the classroom from the schoolteachers. Ohmae remembers his own teachers in primary school telling him that Japan, although lacking natural resources, still must feed a population of over 100 million people who live in a country about the size of Montana. Students were also told that the Japanese people would have to resort to the importation of raw materials, turn them into quality products, and then export them to other countries. With the funds earned from exportation, the Japanese people could, in turn, purchase the necessary food stuffs from others, to survive. There was no alternative except to go hungry. The extreme importance of the work ethic has been rooted in the minds of the Japanese and reinforced the desire to persevere at all costs, no matter how difficult the task at hand appears to be.

Robert Cole describes the Japanese work ethic as being a multidimensional phenomenon.\textsuperscript{14} He points out that "Japanese employees do appear quite effective in the area of penetration and mobilization of primary work groups on behalf of organizational goals. This is an area, however, in which success rests most heavily on culturally unique patterns of behavior that cannot easily be absorbed by other nations."\textsuperscript{15} He believes that the leadership patterns of the Japanese and the individual's place in the group are patterns that would not be successful in the United States. For example, unions in the United States have not been sympathetic to company efforts at organizing informal working groups to attain management goals.
For Japanese workers, there is a humanistic approach used in the method of organizing people, a feeling of belonging, and there are goals that provide guidance in their everyday lives. The feeling of worker alienation in Japan is very low compared to worker alienation in the United States. Worker alienation in the United States can be measured indirectly by high absenteeism, high rates of unemployment, and high employee turnover. However, Cole makes the point that the Japanese work ethic rests ultimately on the fundamental power relationship that Japanese managers maintain with the workers.\textsuperscript{16}

In Japan, no one element is used to determine the productivity of workers. Increases in productivity are achieved by the interaction of technology and labor, and greatly influenced by the social structure and work organization. On the other hand, management in the United States seems to believe that any increases in productivity must come from improved skills and ability at managing people rather than recognizing that motivation, cooperation, and team work by the workers could improve efficiency levels. The adversarial relationship between management and labor in the United States is traditional and deeply rooted.

A comparative study on diligence by Whitehill and Takegawa surveyed worker attitudes in several industries in the United States and Japan, and concluded that Japanese employees do show a very powerful worth ethic.\textsuperscript{17} The study results indicated that Japanese workers hold a strong desire for fulfillment in their work when compared to workers in the United States. Japanese workers also identify more strongly with their company. There is a trend by younger workers in Japan to desire more self-fulfillment in their work than young employees in the West.
Group and Family Relationships

"Japan’s Government is indeed dedicated at the highest level to creating a people with a unified value system. That value system is shared by all ministries, from the Ministry of Education (MOE) to the famous Ministry of International Trade and Industry (MITI)."¹⁸ These are the words of Kenichi Ohmae of McKinsey and Company.

One value taught in early childhood education in Japan is the necessity to work together and to live cooperatively with others. The characteristics are learned at a very early age, beginning in preschools in Japan. This respect and admiration for group harmony is inherent in the Japanese and is carried on into the work place. On the other hand, employees in the United States exercise their right to express their opinion, usually without regard to feelings of social group harmony. The education of children begins early in Japan, and young children learn the value of working cooperatively with others, how to apply themselves to the task at hand, how to persevere in the face of all obstacles, and how to work together for the nation to survive and prosper.

The Japanese are very concerned about their relationships with other individuals and on how they interact with others on a social level. They spend a great deal of time and energy on maintaining steady flowing relationships that continue, over time, to remain cordial. The Japanese refer to belonging both in the present and also in the past. For example, Japanese may refer fondly to his place of birth, the dwelling in which he grew up, and the schools where he studied and from where he graduated. "Japanese identify themselves by both their shozoku (‘current belonging’) and shusshin (‘origin’)."¹⁹ Thus, Japanese will identify themselves closely with their house register where their name belongs, and with
historical eras in history, such as the Shōwa period. These identities strengthen the group relationships. Lebra writes about the Japanese concern for belonging:

Establishing identity by belongingness is further demonstrated by the desire for pure, unambiguous belonging. One is proud of being a "pure Edo Child," one who was born and has since lived only in Tokyo. . . . The Japanese concern for belonging relates to the tendency toward collectivism, which is expressed by an individual’s identification with the collective goal of the group to which he belongs. Collectivism thus involves cooperation and solidarity, and the sentimental desire for the warm feeling of ittai kan ("feeling of oneness") with fellow members of one's group is widely shared by Japanese.20

In the United States, and in many other cultures, transactions and discussions that would ordinarily take place during private moments, will be carried out within the borders of the group to which one belongs in Japanese society. Learning to cooperate with others in one's group begins in preschool when young Japanese children make the transition from home to school. Training is even more apparent when the Japanese are living in another culture where group cooperation is not valued or stressed as it is in Japan.

In Japan, former classmates from kindergarten through the university level will gather together for reunions often to reminisce about their school days, friends, and teachers. These are happy occasions for seeing old friends with whom the bonds of friendship were established many years ago. Bonds of friendship established among school classmates in Japan are rarely broken and usually endure a lifetime. The Japanese need for cordial relations and agreement leads to conformity. Lebra sees conformity as the cultural foundation for "egalitarian ideology in Japan, an otherwise hierarchically ordered country."21

In the working environment, small-group activities give employees the opportunity to share skills and knowledge. This practice is seen by the Japanese as a practical approach to teamwork and employee participation, especially in a world market increasingly dominated
by new technological devices and increasing consumer sophistication. Other benefits derived from small-group activities include heightened employee self-esteem, a sense of dignity and self-worth, a feeling of control over one's work life, and a sense of creativity.

While Japanese management tries to treat blue collar workers in an individual manner by tying salary raises and training to an individual's job performance, U.S. manufacturing companies tend to give little recognition to workers and treat them as part of a large group. Individuals in Japan compete among themselves while still exhibiting teamwork that, in turn, results in improvement for Japanese industries.

Japanese management gives employees a feeling of belonging which has a positive effect on economic success and personal satisfaction. Thomas Rohlen makes this point most effectively:

The most important key to Japan's strength is the way it effectively employs and makes the most of its people through good manpower, labor relations, and personnel policies. Teamwork and organization are Japan's secret. If you stop and think about it, people are really about all Japan has. Look at what it has done with people and people management. 52

When comparing the Japanese and the American system of employment practices, the future is the most important element when hiring employees in Japan. But in the U.S., managers look to employees that may be required for the present only. Since the Meiji period, the Japanese company serves as a family structure and is a social group with the characteristics of a family group. Thus, traditions are maintained and carried on with encouragement from Japanese management and in the long run provide success and economic rewards.
In Japan, the employee has a type of emotional involvement to the company or his employer. Nakane gives an explicit description of this characteristic:

I would not wish to deny that in other societies an employer may have a kind of emotional attachment to the company or his employer. What distinguishes this relation in Japan is the exceedingly high degree of emotional involvement. It is openly and frequently expressed in speech and behavior in public as well as in private, and such expressions always receive social and moral appreciation and approbation.\(^{33}\)

When children enter the first grade in Japan, they also enter their Kumi, or class group. This is the beginning of the formal part of their training as a member of the group with school ties established in first grade that will last a lifetime. From this day forward, harmony within the group will be emphasized repeatedly. Young Japanese students develop the ability to work together on class projects, take turns serving one's classmates lunch, and clean up the classroom and school together.

While conducting research in Japanese preschool and elementary school classrooms, the author has observed a variety of activities, both inside and outside the classroom. Students were observed participating in academic work, creative art projects, and sports activities. Nearly all of the activities, academic and others, were group oriented. During a first-grade mathematics lesson, for example, classes often worked together while their teacher explained the steps needed to solve a measuring problem. After discussion and working together, the teacher suggested that the entire class move to the hallway outside the classroom and practice what they were learning. Using tapes, rulers, and various objects, the students used their newly acquired skills to test their measuring abilities. In these instances, students tried many different approaches to measurement. There was great enthusiasm and sharing among the class members. The students would try several different ways of measuring,
always with great persistence in working it through to the final solution. They were intense and displayed complete concentration on the task at hand.

Recent studies of early childhood education in Japan stress the value placed on the maintenance of harmony in social relationships. Japanese teachers of young children commonly assign the responsibility for many classroom activities to the pupils, including rule making, solving conflicts, and a variety of other classroom chores. Teachers can be observed encouraging children to manage and solve disagreements when they occur. Problems are seen as belonging to everyone and, therefore, the entire group is part of the process of conflict resolution.

Thornton and Endo's comparative study of crime prevention in the United States and Japan also revealed the strong emphasis that the Japanese place on ethics and moral training. They explain

Another unusual and noteworthy feature of Japanese education is the compulsory teaching of what is often translated as "moral education" (dōtokukyōiku) a better translation would be "character education," with self-discipline instruction (shūkin) starting in the first grade and continuing through senior high school. With ethics and moral training, it becomes apparent that Japanese schools are considered an extension of the family.

The feelings of dependence (amae) are strong in the Japanese personality. Doi defines it as "any situation in which a person assumes that he has another's goodwill, or takes a—possibly unjustifiably—optimistic view of a particular situation in order to gratify his need to feel at one with, or indulged by, his surroundings." Doi sees amae as the foundation of all the feelings that babies show toward their mothers, feelings of dependence and "the unwillingness to be separated from the warm mother-child circle and cast into a world of objective 'reality.'" Doi carries this further by arguing that these feelings are carried
throughout a Japanese lifetime and help to establish his feelings toward other people and to reality. While the people inside Japanese society see amae as comforting and human, those outside the society may view it as selfishness and aloofness from reality. Doi states that "the attempt always to remain warmly wrapped in one's own environment must to some extent involve a denial of reality, so that the claims of 'objectivity' and 'logic' are sometimes ignored."\(^{24}\)

Shigaki describes the responses to the question of what kind of child Japanese and American teachers want to develop.\(^{29}\) Japanese teachers responded with a *ningen-rashii kodamo* (a human-like child). American early childhood educators questioned in the Shigaki study listed honesty, self-confidence, and independence as the most important values to transmit to their pupils. No mention was made of the value of harmony in social relationships by the American educators.

The U.S. Competitive Dilemma

The United States is facing a shrinking labor pool as jobs become more knowledge-intensive rather than labor-intensive. During most of the time that the United States has been a nation, it has usually had a disparity between worker skills and job demands. But now there is a lack of capable workers with adequate skills to do the work. There are several ramifications of a poorly prepared workforce including a severe shortage of trained workers to further improve the technology necessary for productivity. With increasing numbers of minorities entering the workforce with little or no skills, the gap between the well paid workers and the lower paid ones widens.
The United States economy requires a literate and competent workforce to keep the nation capable of competing in the ever expanding global marketplace. As technology continues to upgrade the skills needed for the majority of jobs, workers must possess competent reading and computation skills. But today, jobs requiring these skills are unfilled while the unemployment rate continues to rise. Occupations that require higher level skills, especially in the service sector, will continue to increase. The last two decades have witnessed new developments in technology and knowledge that were previously unknown. As corporations and companies reorganize their workplaces from an assembly-line organization of production to employee work teams similar to the Japanese, a higher degree of skills is needed for most jobs.

The United States Labor Department is using a scale from one to six for measuring reading, vocabulary, and writing skills needed by workers to tackle a variety of jobs. Hudson Institute looked at the new occupations that will be created by the economy and they discovered some startling facts. More than three-quarters of the nation's new workers will have limited verbal and writing skills (Levels 1 and 2), but they will be competing for only 40% of the new jobs. Most new jobs will require employees who have good reading and writing skills. However, fewer than one in four new workers will be able to perform at the needed levels. The Hudson Institute study estimates that just 22% of new employees will be able to function at Level 3 or better. For jobs such as nursing or management, the educational requirements are even higher. Most of these jobs, which often require more than a high school education, need skills at a much higher level. Just 5% of the new workers will be able to function at these levels.
Because of the dramatic decline in the number of 21 to 25 year-olds in the population, employees will have to employ more workers with little or no education. There will be more minorities and immigrants among this group. During the 1990s, approximately 50 million workers may need to undergo training or retraining, including 21 million new employees in the workforce.\textsuperscript{31}

Although minority employees are in the most need of employment, they tend to possess the least skills in reading and writing. Those minority employees already employed have a difficult time earning promotions to better jobs because of this lack of skill in reading and writing, and they are also in fields or jobs that are becoming non-existent. In other words, there are few minorities in growing industries. During the 1980s, some 2.3 million U.S. workers were displaced each year.\textsuperscript{32} One million of those displaced each year were workers with over three years on the job, and approximately 30% of these lack basic skills in reading, writing, and arithmetic.\textsuperscript{33}

The United States has a serious shortage of engineers and scientists and the future looks no better. While the baby boom generation provided many workers for the labor force, there was a decline in the number of students who chose to go into science and engineering careers. Foreigners are earning half of the graduate degrees in science and engineering now. Even though salaries are high in these professions, there appears to be little reassurance that salaries alone will attract qualified and interested candidates. The time to interest potential candidates in science and engineering careers is in elementary and high school as they do in Japan.
The lack of proper skills by workers also poses a threat in other areas of American society, including the competition by those with little or no skills competing for the lower paying jobs, while those jobs that require higher skills go unfilled because of the lack of qualified employees. A ramification of this could be lower wages for the low skills jobs and higher wages for the jobs requiring more skills.

The decade of the 1990s will require individuals in the U.S. with improved managerial skills capable of working with a very diverse labor force including handicapped and retired workers returning to the workforce either full or part time. U.S. company managers will need to possess and to use the extraordinary skills and qualities of compassion, sympathy, kindness, sensitivity to unfair hiring and work practices, and help to inspire workers to achieve high career goals. Managers of U.S. companies will need additional training in hiring, assignment, promotion, and training procedures. As the United States moves rapidly toward a new century, bias and discrimination against age and gender will slowly disappear as these workers are recruited into the workforce.

When American corporate management does not completely utilize the resources of its human capital, living standards for the nation’s citizens may decline, by being directly and indirectly tied to the slower patterns of productivity, research, and growth. To maintain the competitive edge in the economic global marketplace, it is essential for U.S. companies to encourage the development of each employee’s talents and knowledge and to take advantage of these skills to use them for the furtherment of economic achievements.

Although Japan studied much about the United States and the ways of the West, the United States did not take advantage of the opportunity to learn about the Japanese. Today,
corporate management in the United States looks to industrial productivity, current management practices, and a nation's competitiveness as a measure of economic success. However, it need only look to the effectiveness of the school system, and the effort and persistence of the students. While Japanese employers seem to expect more effort and productivity from their higher educated workforce, American management expects less effort. As the labor force in the U.S. acquired additional years of education, management did little to restructure their company workplace organization.

Japanese industry supports research and development by engineers and scientists working on imaginative ideas for use at home and for export. About half of the patents being filed around the world are from Japanese firms. Japanese firms excel in the technology and manufacturing of automobiles, cameras, video equipment, fiber optics, robots, and semiconductor memory chips. During the 1990s, the Japanese plan to introduce:

1. Television sets that are similar to a painting on the wall with excellent picture quality.
3. A supertrain (MLU-002) that floats over electromagnetic rails at speeds over 300 miles per hour.
4. New sports cars with the qualities of the Porsche and the low price of a Toyota.

In his book *Kaisha*, James Abegglen lists three qualities that contribute to the high rate of technological assimilation in the Japanese corporation (*Kaisha*). They are the rate of capital investments, the pattern of personnel practices, and the quality of the Japanese workforce. Abegglen gives credit to the personnel relation methods employed in the Japanese
corporation for being responsible for the rapid wave of changes in the technology that have taken place since 1950. The ways of working and job assignment are all affected by the contracts put into effect to introduce new technology. Each of these changes, in turn, brings about changes in the product or the process needed to manufacture the product. Abegglen notes that "it is the relatively close identification of the interests of the Kaisha and their employees that has made this rate of technological change possible and the pattern of union relations implicit in that degree of identification." The employees in the Japanese company can learn the new technology changes and adapt to new work methods because of their similar educational backgrounds. With the work force sharing the same educational skills, workers are able to adapt to new technological changes that may require changes in their individual and group efforts. Many Japanese young people now pursue education beyond high school. In the 1980s, approximately 40 percent of new employees in Japan had attended an institution of higher learning compared to only one percent in 1950.

Thomas P. Rohlen, in comparing the American and Japanese school systems, agrees. "The Japanese get much better results for their money. A higher percentage of students graduate from high school. One in ten young Japanese, but one in four Americans, does not finish high school. Equal proportions of students now go on to higher education, but a considerably higher proportion of males is taking a bachelor's degree in Japan than in the United States. More important, the skills and achievement of the average Japanese student are far greater for all levels through 12th grade." Rohlen goes on to point out that the Japanese high school graduate has the equivalent basic knowledge of the average American college graduate.
The Japanese scientists and engineers that graduate from the nation's colleges and universities are very well educated and are able to put their enormous talents and skills to work on a variety of research and development projects. The Japanese government holds a deep commitment to education from early childhood education programs to and including university schooling. There are approximately 5,000 technical workers per million of the population in Japan while the United States has 3,500 and West Germany has 2,500. The Japanese invest as much on research and development as the United States and more than any of the large nations in Europe (as a percentage of GNP).

Japan invests little on defense research compared to other world powers. Because the Japanese government gives less than 20 percent for research and development, almost all of the research and development taking place in private companies is financed by the private sector. While the United States government pays for approximately half of the 120 billion dollars invested in research and development conducted each year in the United States, the Japanese government invests about one-fifth of the 60 billion dollars spent on research and development in Japan each year. This amount is directed to the Japanese universities and to Japanese research institutions.

New products developed by Japanese engineers are speeded out to the marketplace to obtain the customer's reaction. In the meantime, engineers are continually working on improvements to the current model so that replacement with the improved version can be done quickly. Japanese engineers also work closely together as a team with no thought of failure of one of their designs. Once a product has received management approval, it is assumed it will be produced in spite of any impediments along the way. Working together
and sharing their knowledge speeds up the time products are delivered to the marketplace. The element of persistence is always present and giving up is unthinkable.

Another competitive strength of the Japanese is its ability to attract and keep the best of the university graduates who desire to enter government service and make it a lifelong career. Government positions are sought after, with the Ministry of International Trade and Industry (MITI) being the most coveted. MITI is classified as a cabinet-level ministry and continues to attract the best of the college graduates from Japan’s most prestigious universities.

Two other factors contributing to the growth of the Japanese economy are the stability of the Japanese government and the small size of the government labor force. The well-educated government force in Japan studies problems with the long-range outcome in mind and operates without the burden of feeling obligated to any organizations or associations. Japan, with less of the working population serving in government positions than other comparable nations, continues to grow economically because of a highly educated work-force, high aspirations concerning hard work, and a continuing admiration for intellectual accomplishment. Some sectors of the Japanese economy do experience political pressure and have policies that at times are not totally beneficial. Japanese agriculture, for example, does not always have a good economic policy. There is intense lobbying by agriculture groups for the protection of small shopkeepers and protests are organized from time to time to keep the public aware of the former’s problems. In turn, pressure is brought to bear on government officials. Protests against the importation and distribution of American rice are held often during the year.
Other aspects helping the growth of the Japanese economy are the savings and investment rates. Japan’s savings rate as of 1989 was over 30% as a percentage of GDP. In comparison, the rate of savings for Europe fell to less than 20% savings as a percentage of the GDP in 1989, OECD savings was just over 20% of GDP, Latin America less than 20%, India was just under 25%, and Africa savings rate was slightly over 20%.

Conclusion

Education in Japan is highly valued and diversified, and a continuous stream of students passes through the schools and into the nation’s labor market. Educational standards are uniformly high throughout the country as a consequence of strong central government control and a reinforcing culture which supports such standards. The high level of educational support results not only from an admiration of intellectual accomplishment, but also from a very strong belief in the malleability of human beings.

One of the dominant contributing factors to Japan’s economic success has been its educational system. There is a commonly held belief among the Japanese that the persistence element of behavior in young Japanese children and the instilling of such behavior is responsible for much of this economic success. On the other hand, there is a relative lack of persistency by young American children and a tendency to “give up” when performing tasks. Helmut Morsbach, for example, concluded that

It is finally not so much the flamboyant aspect of persistency which should concern us when trying to say something about the average Japanese personality. Rather, it is its appearance in the many humdrum situations where Westerners are more likely to give up, or at least start getting bad-tempered and obstreperous. And it is due to the diligent execution of boring routines that the Japanese seem to have been able to prosper in everyday life.
Approximately 30% of American students "give up" and drop out of high school in contrast to less than 3% in Japan. The result is that a large number of American pupils are not properly prepared for the modern work world. This lack of persistence has important implications in an age of rapid technological progress.

The data from the author's original comparative study on task persistence was collected in 1984 and 1985, and indicated a large difference in task persistence between Japanese and American first graders. The Japanese children persisted significantly longer than the American children. The data did not, however, provide a direct explanation for this difference. There are several plausible explanations for the persistence element of behavior in young Japanese children, but the cultural aspect of training and educating to instill a behavior of perseverance seems to be the most likely explanation. The mother plays a major role, starting in infancy, in alerting the Japanese child to the importance of persistence in life. Through the socialization process, the Japanese mother creates a home learning environment and transmits to her child the importance of persistence and hard work.

American mothers are more likely to be satisfied with the progress of their children than Japanese mothers even though American children may be falling behind academically. This can be explained by the way the American and Japanese mothers view their role in helping children learn. Japanese mothers attribute children's progress to hard work, persistence, and their own role in actively helping their children learn, while the American mothers see their role as one of encouraging and accepting. Unlike the Japanese, American mothers attribute ability as the main reason for their children doing well rather than effort.
Several aspects of the data from the larger study upon which this book is based reveal some interesting results which might lend support to the importance of the role of the Japanese mother in transmitting persistence behavior to her child. The frequencies of teachers' interaction with pupils in American classrooms were 1.8 times more than the interaction in the Japanese classrooms. Task persistence is inculcated so early by the Japanese mother that teachers in Japan need not emphasize effort and persistence values as strongly as teachers in the United States.

Other possible explanations for the strong persistence behavior in Japanese children, although not supported empirically, include the amount of early nursery school and kindergarten training they receive. More than 90% of the Japanese children receive preschool training. Preschool education serves as the transition from the self-centered home life and training to the group-oriented formal education experience.
Notes


11Ibid.

12Ibid., p. 125.


13Ibid.

16Ibid.

17Ibid., p. 233.

18Kenichi Ohmae, p. 228.

19Takie Sugiyama Lebra, p. 23.

20Ibid., p. 25.

21Ibid., p. 28.


27Ibid., p. 8.

28Ibid., p. 9.


30Aaron Bernstein, Where the Jobs Are is Where the Skills Aren’t, Business Week, 19 September 1988, p. 104.
31 Ibid.

32 Ibid.

33 Ibid.


35 Ibid.


37 Ibid.


39 Nicholas Valery, p. 4.

40 Ibid.

41 Ibid., p. 7.


43 Helmut Morsbach, p. 7.

44 Norman Jonas, p. 68.
What price education:
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The evaluation of universities and its effects on the financing of higher education