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## ABSTRACT

This report outlines the role of after school programs (Juku) in preparing Japanese students for high school and university entrance examinations and presents some growing concerns about the movement. Juku plays a major role in insuring the success of Japanese students on tests administered within the country and on international comparisons made on the basis of achievement test scores. After 12 years of schooling, based on the American model, Japanese children have averaged 4 years more schooling than their counterparts in the United States, accounting in part for differences in test scores noted between U.S. and Japanese students. However, the growing pressure to succeed on examinations is taking a toll, and educators are questioning its impact on students' mental health; tests are beginning to determine curriculum, particularly in private schools; and a disparity is growing between educational opportunities for wealthy and poor students, based on parents' ability to pay. Despite these concerns, there is still widespread support among the population for Juku programs. Parents resist the notion of reducing the school week from 6 to 5 days and seem committed to spending the money and time necessary to have their children enroll in extra classes to secure a competitive advantage on the tests that determine which high schools, colleges, and/or universities the students may attend. (Contains 19 references.) (LL)

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Juku and the Performance of Japanese Students:  
An American Perspective

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## Abstract

### Juku and the Performance of Japanese Students: An American Perspective

The paper discusses the role after school programs (Juku) play in preparing Japanese students for entrance examinations for high school and university study. Juku plays a major role in insuring the success of Japanese students on tests administered within the country and when international comparisons are made on the basis of achievement test scores. The growing pressure to succeed on examinations is taking a toll in Japan with educators questioning its impact on students' mental health and the fact that tests are starting to determine the curriculum, particularly in private schools. As a result of sending children to Juku there is a growing disparity between wealthy and poor parents with more children of well to do parents attending Juku. The paper points out that after twelve years of schooling, based on an American model, Japanese children have attended school on an average of four years more than their American counterparts. This difference in school attendance accounts for much of the test score differences now noted between American and Japanese students. Although there appear to be growing concerns about the Juku movement in Japan and the incredible pressure placed on Japanese students, there still is wide spread support among the population for these schools. Parents resist the notion of reducing the school week from six to five days and seem committed to spending the money and time having their children enroll in extra classes and extra schooling to give them a competitive advantage on the tests to determine which high schools, colleges, and/or universities they may attend.

In Japan today, there is a growing reliance on private after school programs to prepare students for the entrance examinations for high school and university study. Many parents believe that the regular school curriculum fails to provide enough preparation for these examinations.

Japanese students spend up to seven hours at school, often followed by long hours studying at home or in supplementary classes known as juku. Jukus are cram schools designed to help students pass examinations for prestigious high schools and universities (Perkins, 1991). A typical routine is for a student to attend his/her regular public school and then go on to an additional school or supplementary school (juku) for extra study, return home for an evening meal, and then in some cases return again for additional study at a juku, and when that ends to continue working on school work often until midnight. This schedule is maintained six days a week. One reason for the intense pressure to succeed on these tests of achievement is the need to get into good high schools, and after high school to succeed on the entrance exams to universities and colleges. Unlike their American counterparts that look at high school transcripts, recommendations, and interviews, universities and colleges in Japan almost exclusively base their admissions decisions on test scores. To test well is critical for Japanese students, particularly in junior high school where they must do well in order to get into a quality high school. The pressure to

do well on tests has increased significantly since the 1970s with students attending juku as early as elementary school (Perkins, 1991). According to Kobayashi (1986), as early as 1976, the Ministry of Education noted that 20 percent of all elementary students attended juku. More recent comments in the press indicate this percentage is increasing.

The university entered very often determines a student's future employment and economic status. Testing well becomes the all important objective for parents and students. Related to the stress on the students is pressure on schools and teachers whose status will rise with the success rate of their students on examinations. According to an article in Education Week, February 20, 1985, surveys of students in several cities in Japan indicate 60 percent of all primary school students enrolled in extra enrichment courses. By the fifth grade, about one-fourth of the students are enrolled in serious after school academic courses. National studies indicate that about one-fourth of elementary students attend juku or have private tutors, and 60 percent of middle school students attend juku or have tutors to help them prepare for the entrance exams of top high schools. At the same time, many students at academic high schools continue to attend juku to prepare for college. Another 10 percent attend more advanced cram schools called yobiko to prepare for college entrance exams. Juku have become so competitive that several Japanese companies have developed franchise chains of juku and

some teachers leave the teaching profession to offer their own tutoring schools in local neighborhoods making the growth of juku a cottage industry throughout Japan. The Ministry of Education has voiced concern and stated that parents shouldn't need to send children to juku, that in effect the schools should prepare them well enough to enter universities or good high schools. Parents disagree saying that curricular changes introduced by the Ministry are not reflected in university entrance exams, thus placing increased pressures on parents and students to learn material outside the regular school setting. In addition, Japan's schools are geared toward the average student. Talented students who could learn more and students who need additional help or support may only find this available through the juku system (Cummings, 1986).

Since juku is a cost item for many Japanese parents, the idea of educational equity in Japan may be seriously impacted by the ability of the middle and upper classes to pay for the extra schooling in private jukus that poor parents are unable to provide. Recent data in Japan suggest that the proportion of children from poor families attending prestigious universities has declined over the past ten years. While students from wealthier families show a proportional increase in attendance at more prestigious universities undermining the egalitarian thrust of the entire educational system (Beauchamp & Rubinger, 1989).

Although theoretically the single track system in Japan

assures equality of educational opportunity, in reality equality gives way at the secondary school level. Compulsory schooling ends at the ninth grade. Where a student lives and how much the student's parents can afford to spend for private schools and tutoring often mean the difference in whether or not the student reaches the freshman class of a top university.

The growing pressure for students to score successfully in entrance exams is also having an impact on the secondary education system. More schools are looking at the number of students going on to university, and their performance on entrance exams versus concern for a comprehensive program designed to educate the student. The pressure is now so severe on students to succeed on tests that Japan now leads the world in school-related suicides among those in the 15 to ~~19~~ year old age group. Private high schools are even becoming more test driven than their public counterparts. Entrance exams influence much of the school's curriculum in the first two years and often a hundred percent of it in the senior year. In many private schools, teachers cover three years of the required curriculum for high school in a two-year timeframe to give their students a full year to prepare for the university examinations.

Both Japan and the U.S. face the issue of equal access and equal opportunity. Theoretically, both provide systems of education open to all citizens. However, in Japan there is a growing tendency for the wealthy to opt for private schools that

they feel give their children greater opportunity in passing national exams and eventually entrance to one of the prestigious universities. Unlike the U.S., however, the Japanese system is basing its total selection process on the basis of a test score rather than the demonstrated ability of a student in more than one endeavor.

There are growing concerns in the Japanese press about the effect of testing on both students and schools. In an article from the Japan Times (1989), "School Entrance Exams Too Hard, Ministry Says," there is a clear indication of a lack of congruity between required examinations and the curriculum of regular schools. The article talked about a survey of 65 schools that required examinations indicating that the examinations were too difficult, and because of this high level of difficulty, students were being forced to attend juku to supplement their regular schooling. In the article, the Ministry of Education made it clear that the items on these entrance exams are not covered within the current elementary and high school curriculum. The article talks about a report urging schools to bring the tests in line with school curriculum.

Clearly, the issue of academic engagement time is critical and juku is just another example of academic time spent by Japanese students. In his book, Education and Equality in Japan, William K. Cummings (1980) estimates the Japanese teachers spend roughly a third less time and energy keeping order than do

American teachers. If American teachers are spending one-third of their time in classroom management and disciplinary procedures, over the course of twelve years a significant block of time is not being used for instructional purposes.

The role of Japanese mothers as active teachers can't be underestimated in terms of its influence on student performance. Almost immediately after birth, parents take a strong interest in the academic development of the child with the mothers spending many hours focusing on games and other activities supportive of a child's learning. It is common to have parents buying books for preschoolers. Most preschoolers know how to read and write before they enter school, and most can do simple computations. Once a child enters elementary school, the maternal involvement increases significantly. Another factor to be considered is that most mothers do not work outside the home and have the time to support their child's school work (Education Week, 1985).

How pervasive is the push for Japanese students to succeed in school and on competitive examinations? According to White (1984), there are classes for mothers called "mama juku" that prepare the mothers in subjects their children are studying. Homework is also considered a means for developing a sense of responsibility in the child and for training character. As White points out, in contrast to Western theories of achievement which tend to emphasize individual effort and ability, the Japanese consider academic achievement to be an outgrowth of an

interdependent network of cooperative effort and planning. In other words, if students work hard and stay on task they can learn. Individual ability isn't the key as much as the effort the student puts in. Unfortunately this leads to a mother's over investment in her child's performance, and the mother tends to become totally identified with her child's success or failure, not having a separate identify of her own.

Stevenson (1983) in his research has also shown that Japanese mothers push their children in school performance, placing great pressure on them because of their belief that they can do better. American mothers under similar conditions tend to praise their children for the work they've done. Thus at a very early age students in Japan are placed under increasing pressure by their parents to succeed. This constant striving by the mothers of Japan for improved performance is something that is carried over throughout a child's school years right up until the time he/she enters a university.

The article in Education Week, February 1985, points out that much of the Japanese students' future depends on test scores, in fact much of a student's life is spent preparing for examinations. From junior high school onward, the number of extra-curricular activities a Japanese child engages in shrinks in proportion to the nearness of exam time. It is at this time that significant numbers of parents enroll students in juku for tutoring and test preparation.

An issue also being raised in Japan because of the pressure to succeed on standardized examinations is a growing sense that the nation's teachers are teaching to the test not engaging students in how to reason, think, or succeed in the real world. There appears to be a growing conflict in the minds of Japanese educators. There is a desire to emulate some of the Western characteristics of education, particularly those stressing individuality, creativity, and adaptability to real life experiences. While many Japanese educators would like to see these characteristics brought into their school systems, they do not want to either eliminate the current exam system nor do they wish to do anything to hurt the acculturation process into Japanese society. They want to maintain a system that does well in bringing students into the mainstream society and successfully graduates 93 percent of the students from high school. There is a fear that if schools become too like the schools in the United States there will be some disintegration in Japanese culture and values, combined with a sizable increase in the number of dropouts and behavioral problems (Beauchamp, 1989).

An article entitled "Cram Schools Take to the Airways" (1989) talks about two of the three largest preparatory schools in Japan promoting TV lectures to their branches throughout the nation. The goal is to improve the performance of students on college entrance exams. The article indicated many private high schools are subscribing to the lecture service. The article

points out that private high schools in particular are under intense pressure to show a higher college entrance rate in order to maintain their enrollments and their prestige. In the article, an official at the Ministry of Education was quoted as saying, "cram school courses should not take the place of 'real education' obtained in public and private high schools." It is interesting to note that the Ministry of Education makes a distinction between education and test preparation. Clearly the Ministry does not see the role of the public school system to be test preparation but rather the education of the youngster into the society. Although the Ministry sees one set of values as important, the criteria for success within the country's educational system is test-taking ability in content knowledge.

In the United States, there is research going back over ten years dealing with engaged learning time and its relationship to student performance. Although simplistic in concept, there has been consistent data showing that the higher the level of engaged time for students the stronger the correlation with learning. Based on this research alone, American educators should not be surprised at the performance of Japanese students on international measures of achievement.

There is also related research dealing with teacher effectiveness that indicates many of the practices followed within Japanese schools, combined with the emphasis found on test-related learning in the juku, should lend itself to

effective teaching. According to Brophy (1981), in an exhaustive review on teacher effectiveness, his findings indicated that not only do teachers affect student learning but many behaviors engaged in by teachers are critical to the learning outcomes of students. The research shows that there was no specific behavior related to student performance but the way teachers perceive their role as a teacher was crucial to student success. Teachers who felt that their instructional role is primary were more apt to be successful, and certainly this is the teacher's role reflected in juku as well as traditional Japanese education. In addition, Brophy found that successful teachers managed their students' time more effectively and that things tend to run more smoothly with fewer interruptions. Again, a characteristic found in Japanese schools. Another finding of major importance was that teachers tended to be more efficient when they used a strong curricular approach. This approach also resulted in higher student achievement in less time. In summary, Brophy seems to indicate that teachers who see themselves as instructional leaders are in control of the class and direct students to academic relevant topics with little wasted time stand a much better chance of having students learn material than teachers in a curriculum that is less organized and directive.

There is also a body of research that indicates students can significantly increase test performance by developing test-taking strategies, particularly on tests similar to those on which the student will ultimately be judged (Dolly & Vick, 1986). By

having students enrolled in juku that concentrate on specific types of test items and test-taking practice, one could generalize from test-wiseness research that this experience will have a positive impact, particularly on students who have difficulty with tests. There are data to show that students who lack test-wiseness and test-taking skills benefit significantly from the opportunity to practice and learn these skills (Smith, 1982a, 1982b).

An article by Bonnie Gordon (1987) entitled "Cultural Comparisons of Schooling" discusses comparisons among American, Taiwanese, Chinese, and Japanese students, pointing out how at early ages there are significant differences in performance across all groups with the Americans being the poorest performers. The author states that "Students in Taiwan, China, and Japan spend more hours a day in learning activities than do American students. They spend more time actually listening to the teacher lecture, they attend more to the teacher or peers working problems on the board, and attend to the questions or oral readings of fellow students. The Asian students work as a class--not individually or in groups--and so all follow routines that keep them doing what they are supposed to be doing. American students, by contrast, devote substantial time to inappropriate activities; they take a third longer to make transitions from one subject to the next or from recess to study period, they ask more questions, but their questions are about

classroom procedures rather than about the study subjects. American students also spend a great of time out of their seats" (p. 5).

More recent data published by the National Center for Education Statistics (1992) summarize six major international studies of mathematics and science achievement over the past 25 years. The findings summarized below are

".The more students are taught, the more they learn, and the better they perform on the tests. There are significant differences in the content of instruction among countries at common levels of schooling.

.Countries committed to keeping students enrolled in secondary school score less well on the international surveys, but they spread more knowledge across a larger population. Japan is an exception. Even with high retention rates at the secondary level, Japanese students perform very well on the mathematics and science achievement surveys.

.Generally the 'best students' in the United States do less well on the international surveys when compared with the 'best students' from other countries.

.The surveys have not achieved high degrees of statistical reliability across age groups sampled and among all the participating countries. Thus, statistically, there is

considerable uncertainty as to the magnitude of measured differences in achievement" (pp. 30-33).

It is clear that the more time teachers allocate to instruction in a particular curriculum content area, the higher the achievement in that area. Based on this research, time alone spent engaged in academic activities would account for the significant differences found across the performance of American and Japanese students.

It is only in recent years that Americans are looking at the issue of time and its relationship to academic achievement in international comparisons. In a New York Times Editorial (1990) entitled "Johnny Can't Add, Hiroko Can," the point was made, "Japanese children do well in international competitions, at least in part because they are so drilled in test-taking. Also with shorter holidays and six-day weeks, they spend forty days more a year in school than Americans; over twelve years, a Japanese child has had four more years of school."

In making comparisons across Japanese and American schools, the issue of comparing both systems on the basis of time becomes more complex when we look at hours spent engaged in academic activities versus equating school days in both systems. In most cases, the Japanese school days are longer than American school days. If you translate the hours a Japanese student spends engaged in academic activities and force those hours to fit an

American school day, in almost all instances the Japanese student spends the equivalent of 300+ U.S. school days a year in academic activity. Clearly, differences in performance can be attributed to time spent engaged in academic activity as well as cultural values within the Japanese society that place tremendous pressure on students to succeed in an academic setting, combined with high parental involvement in the academic work of their children, particularly among Japanese mothers.

A recent survey conducted in the State of Hawaii to look at time spent in academic activities and school, in order to look at comparison data with Asian countries, resulted in some interesting findings. The State of Hawaii by law requires that students spend 180 days a year in school. However, when asked the question, how many days students miss out of the 180 days mandated by law, the range was significant (See Table 1).

According to district superintendents and principals, it depended on the school with some schools virtually missing no days while in other schools students missed as many as 25 out of the 180 days.

In a related question dealing with outside homework, the administrators were asked how much homework is assigned; again, the amount of homework as can be seen from Table 2 was minimal.

Table 1

Number of Days Missed by Hawaii Students  
According to School Administrators

	Range	Average
District Superintendents	10-25	14
High School Principals	4-10	6.4
Intermediate School Principals	5-12	9.25
Elementary School Principals	0-18	9

Table 2

Hours of Homework Assigned in Hawaii

	Range	Average
District Superintendents	1-1.5	1.25
High School Principals	1-2	1.4
Intermediate School Principals	.5-1.5	1.12
Elementary School Principals	.5-2	1.2

Hours of Homework Completed

	Range	Average
District Superintendents	1-1.5	1.2
High School Principals	.5-1	.87
Intermediate School Principals	.5-1	.87
Elementary School Principals	.5-2	1.1

Of further interest was their opinion on how much homework was actually completed. The homework completed in all cases was less than the homework assigned. The survey went on to ask whether or not requiring students to attend additional school days in Hawaii would improve academic performance, and except for intermediate school principals with 70 percent indicating "yes, it would improve school performance," all other administrators in the State indicated "no" by a 2 to 1 margin. Most commented that requiring students to spend more time without changing instruction would do nothing to improve academic performance.

Principals indicated there would have to be significant changes, not only in the students' attitudes toward learning, but in the way instruction was presented and the way schools were structured. Many of the administrators responding to the survey also indicated that cultural differences account for much of the performance differences when comparisons are made across American and Japanese students. They indicated that we do not have the same level of commitment and the same level of parental involvement to insure students make use of the academic time they now have available. Most of the administrators indicated there is relatively high involvement of parents in elementary school, but that the involvement begins to drop off as students move up from kindergarten through high school. According to Hawaii high school principals, only 28 percent of the parents of their students take an active interest or are actively involved in the children's education.

In a recent article by Sato & McLaughlin (1992), they pointed out that making comparisons across Japan and the United States may not be fair, primarily because of the different value systems of the teachers. They state, "teachers in both countries hold different expectations, play different roles, and meet different responsibilities in the school, workplace, and society" (p. 4). They go on to say there is a significant difference in attitude towards the role of teacher among teachers themselves. In Japan, students are seen as a national resource and an

investment in working with students is an investment in Japan. They also claim that Japanese teachers are more actively engaged in a wide variety of activities aimed at expanding their own professional expertise. They state that some participate in formal research groups, and that journal articles by classroom teachers about their educational research currently outnumber by a third those of university educational researchers. They contrast this with the United States where teachers report very low levels of involvement in professional organizations, and spend little of their own personal time on activities related to professional growth. As a result of these cultural variables, they point out that teachers in Japan, even when on leave, often find ways to work with their students and are continuously engaged in school activities. This is another instance where time that is not formally counted for instructional purposes is provided by teachers within the Japanese educational system.

Changing schools and school practice in Japan may be as difficult as change in the United States. An article in the Japan Times (1989) reported on a survey to assess parents' reactions to a proposed five-day school week. The article is based on a survey in which 668 elementary and junior high school students, 117 teachers, and 514 parents were queried in Okayama Prefecture. The survey simply asked about the idea of taking Saturdays off from school. The concept was supported by 94 percent of the pupils and 79 percent of the teachers. However, 77 percent of the parents responding opposed the idea. The

students indicated they would enjoy the time to be with friends and family members; parents, however, were concerned that the children would be left idle and simply pressured to attend cram schools rather than public schools. One of the researches attributed parents' opposition to anxiety that the children may disturb the parents at home.

In summary, juku plays a major role in insuring the success of Japanese students, both on tests administered within the country and when international comparisons are made on the basis of achievement test scores. The growing pressure to succeed on examinations is taking a toll in Japan, with educators questioning its impact, both on student mental health and the fact that tests are starting to determine the curriculum, particularly in private schools. There is also concern that there is a growing disparity between wealthy and poor parents. Because of the economic cost tied to sending students to private schools, there are more children of well-to-do parents attending juku, giving them an unfair advantage in a system that has prided itself on its egalitarian goals. It is also clear when making comparisons that, at a minimum, at the end of twelve years of schooling Japanese children have attended school on the average of four more years in terms of U.S. school days than their American counterparts. This is a significant difference accounting for much of the test score differences now noted between American and Japanese students. There is also the issue

of cultural values with the strong involvement of parents in the education of their children in Japan, and the strong commitment of Japanese students to their own education. Teachers, too, have demonstrated a willingness to make a strong commitment to their students and their own professional development. There are significantly fewer disciplinary problems in Japanese schools, and teachers spend less time dealing with disciplinary issues providing greater amounts of instructional time with less disruption for Japanese students. The fact that students can spend more time engaged in academic activities, combined with intense training in test-taking skills which reinforces content knowledge, significantly impacts their ability to perform well on tests. Although there appears to be growing concerns about the juku movement in Japan and the incredible pressure placed on Japanese students, there still appears to be widespread support among the population for these schools. Parents resist the notion of reducing the school week from six to five days, and parents seem committed to spending the money and time having their children enrolled in extra classes and extra schooling to give them a competitive advantage in the testing to determine which high schools, colleges, and universities they may attend. Although the Ministry of Education seems to be concerned about the greater pressure being placed on students to succeed on tests, the Ministry itself is not doing anything to directly influence the tests and insure that there is more congruity between the tests and curriculum offered within public education.

## References

- Beauchamp, E.R., & Rubinger, R. (1989) Education in Japan. Garland Publishing Inc.: New York.
- Brophy, J. (1981) Advances in teacher effectiveness research. In H.F. Clarigio, R.C. Craig and W.A. Mehrens (Eds.), Contemporary issues in educational psychology (4th ed.) Boston: Allyn and Bacon.
- Cram schools take to the airways. (1989), December 14). Japan Times.
- Cummings, W. K. (1980) Education and Equality in Japan. Princeton University Press.
- Cummings, W.K. (1986) Patterns of academic achievement in Japan and the United States. In W.K. Cummings, E.R. Beauchamp, S. Ichikawa, V.N. Kobayashi, & M. Ushioji (Eds.), Educational policies in crises: Japanese and American perspectives (p. 126) Praeger: New York.
- Dolly, J.P., & Vick, D.S. (1986) An attempt to identify predictors of test-wisness. Psychological Reports, 58, 663-672.
- Gordon, B. (1987) Cultural comparisons of schooling. Educational Research, August/September, pp. 4-7.
- Kobayashi, V.N. (1986) Japanese and U.S. curricula compared. In W.K. Cummings, E.R. Beauchamp, S. Ichikawa, V.N. Kobayashi, & M. Ushioji (Eds.), Educational policies in crises: Japanese and American perspectives (p. 67) Praeger: New York.
- Medrich, E.A., & Griffith, J.E. (1992) International mathematics and science assessments: What have we learned? (Report No. NCES 92-011) Washington, D.C., National Center for Educational Statistics, U.S. Department of Education.
- Nystrand, M., & Gamoran, A. (1989, March) Instructional discourse and student engagement. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.
- Parents found fearful of five-day school week (1989, December 26). Japan Times.
- Perkins, D. (1991) Encyclopedia of Japan: Japanese history and culture, from abacus to zori. Roundtable Press: New York.
- Sato, N., & McLaughlin, M.W. (1992) Teaching in Japan and the United States context matters. Current 341, pp. 4-10.

School entrance exams too hard, Ministry says (1989), September 14). Japan Times.

Schooling in Japan (1985, February) Education Week, pp. 12-26.

Smith, J.K. (1982) A cognitive model of test-taking skills. Paper presented at the annual meeting of the Eastern Educational Research Association, West Palm Beach, Fl. (a)

Smith, J.K. (1982) Converging on correct answers: a peculiarity of multiple choice items. Journal of Educational Measurement, 3, 211-220. (b)

Stevenson, H.W. (1983) Making the grade: School achievement in Japan, Taiwan and the United States. The annual report of the Center for Advanced Study in the Behavioral Sciences, 1, Stanford University.

White, M.I. (1984) Japanese education: How do they do it? The Public Interest, 76, Summer.