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Competitive and Cooperative Attitudes: A Longitudinal Survey of Japanese Adolescents

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This study concerned the meaning of cooperation and competition, and the orientations of Japanese students toward cooperative and competitive school activities. First, a sample of 102 teachers generated 871 items that described a wide variety of academic and nonacademic activities and pupil behaviors. Every student (Grades 7 through 12) at a secondary school complex then rated 24 of these competitive and cooperative items in terms of personal importance during three consecutive academic years (N = 720 in Year 1). Factor analyses of the ratings revealed one general cooperation factor and three competition factors: nonacademic, academic, and group centered. Scores on all four composite indexes varied according to students' grade level and/or cohort membership. Females had higher scores than males on the Cooperation composite index, but there was little gender variation on the three Competition indexes. These data show that the development of cooperativeness and competitiveness should be studied longitudinally, and in both academic and nonacademic contexts. The results are discussed in terms of societal values, the experiences of adolescents, and the implicit curricula of Japanese secondary schools.

According to theories of socialization, schools perform two main purposes: (a) filling social roles and (b) fostering the development of individual personalities (Huber, in press). Those functions are accomplished directly by the academic curriculum that fosters cognitive or occupational skills, and indirectly through the implicit curriculum which trains pupils to think and behave in accordance with social norms. Among the nonacademic outcomes of the implicit curriculum are students' orientations toward competing and cooperating with others.

Researchers have observed the socialization of both cooperativeness and competitiveness in the schools of various cultures. For instance, in Germany (Huber, in press), competitive examinations for entrance to secondary school motivate students from a very early age, and determine individuals' future social and economic status. In contrast, Israeli schools have a strong tradition of education which values cooperativeness, reflecting the original collectivist and humanistic values of Israeli society (Hertz-Lazarowitz & Zelniker, in press). In the United States, the ideology of competitiveness has long been entrenched in the implicit school curriculum (Kohn, 1992). However, American educators have shown increased recognition of cooperativeness as an important means of fostering academic achievement and interpersonal relations (United States Department of Education, 1989). In addition, the Graves and Graves (1978) fieldwork demonstrated how school socialization can be a mechanism of social change. They found that as Polynesian schools became Westernized, competitiveness and self-centeredness replaced the cooperative orientations of children and adolescents. These four examples show that school socialization for cooperativeness or competitiveness both reflect and influence societal beliefs and values.

Past Western Views

Westerners marvel at the postwar academic achievements of the Japanese, and have hypothesized that Japanese economic successes resulted partly from their superior educational system (Evans, 1991). Although Japanese cooperativeness has been traced back by researchers to early childhood education (Peak, 1992), competitiveness in Japan is usually discussed in the context of entrance examinations for secondary and post-secondary education (Horio & Sabouret, 1990; Rohlen, 1983). Because of this focus on testing (and because of Americans' concerns with the decline of their own schools), Western scholars have concentrated their research in Japanese secondary schools on academic achievement (Stevenson & Stigler, 1992). One observer even concluded that "little of value has been observed" in the socialization practices of secondary schools (Beauchamp & Rubinger, 1989, p. 258). We believed this conclusion was mistaken, and the development of cooperativeness and competitiveness in Japanese adolescents was investigated.

The Cooperative Ethos of Schooling

Japanese secondary schools encourage in pupils a blend of cooperativeness, competitiveness, and individualism (Sugie, in press). It is more desirable to appear cooperative than competitive in public, and harmony is stated as a central value at every school level in Japan from preschool (Peak, 1992) through high school (B. Shwalb & D. Shwalb, 1985). This social preference has several cultural and historical origins. First, the tradition of Japanese "social preoccupation" (Lebra, 1976, p. 2) places great importance on orderly human relationships. Second, under pressure from the 1945-1951 Allied Occupation, the Japanese reformed their school system to socialize democratic (and prosocial) orientations among students (Cummings, 1980). Third, a paternalistic employment system has stressed loyalty, teamwork, and self-sacrifice among its workers, which further necessitates the socialization of a cooperative workforce. Social critics claim that cooperativeness is a euphemism for conformity (*dochd*) and "enforced group loyalty" (S. Amano, personal communication, November 28, 1981). Therefore, concerning cooperativeness, it may be difficult to distinguish between the ideology of the school and students' actual attitudes.

The Competitive School System

Cooperativeness takes many forms, but competitiveness may be even more complex as expressed in Japanese schools. This is because competitiveness is not a publicly stated goal of schooling. Kiefer (1970) has written that Japanese students are openly and publicly competitive only in nonacademic group activities such as sports teams. Describing the situation in classrooms, Kataoka (1979) likewise has written that competition is channeled into group activities to minimize interpersonal conflict. In political terms, the powerful Japanese teacher unions advocate equality and harmony among pupils, and oppose all forms of standardized testing. Teachers view the national Ministry of Education as an advocate of student individualism and competitiveness (Cummings, 1980). After the end

of the Allied Occupation, the Japanese government began to use the schools as an ability filter (i.e., a selection mechanism for its meritocracy) (Frost, 1991).

Ninety-eight percent of Japanese youth enter high school even though it is not compulsory, and 99% of these students graduate. However, because high schools are publicly ranked according to the percentages of graduates who enter quality universities (Rohlen, 1983), competition to enter the "better" high schools strongly influences the secondary school curriculum and makes preparation for entrance examinations a central focus of adolescent and family life. Parents and teachers criticize this situation, but most adults continue to put pressure on their adolescents to compete. Some see competition as healthy because entrance examinations are the child's only opportunity to compete freely on the basis of ability. Yet others claim that in Japan there is no true competition, and that competition is a euphemism for isolation (*koritsu*—Mita, personal communication, November 26, 1981). According to this view, the ideas of a Japanese meritocracy, and of equal educational opportunity, are myths (Ishida, 1993), and isolated study from seventh through twelfth grade has assumed great importance at the expense of family and peer relationships. In sum, whereas Japanese adolescents are socialized to be cooperative in public, they may be pressured privately to compete.

Research Questions

This study focused on five research questions, the first of which directly concerned meanings: What is meant by cooperativeness and competitiveness in Japanese schools? This question was addressed first to school teachers, the professionals who observe adolescents daily. Teachers defined cooperation and competition in concrete terms through open-ended descriptions of cooperative and competitive student behavior. This survey was the first to adopt such an item-generation strategy in the study of cooperation and competition. The self-report measure of cooperation/competition used most often in past research was a nine-item subscale (Ahlgren & Johnson, 1979) of the Minnesota School Affect Assessment. Its items are very general in nature (e.g., agree/disagree with "I don't like to work in groups"). Owens (1985) developed a more complex measure based on factor analysis and theory, but his Learning Preference Scale items are not drawn from the specific experiences of his Australian student population.

The second question pursued the issue of meaning further: Are competition and cooperation unidimensional or multidimensional? Deutsch (1949) originally described cooperation and competition as antonyms, defining a cooperative goal structure as one by which pupils can achieve goals only by working with others and sharing rewards, and a competitive goal structure as one by which a pupil can achieve goals and rewards only when other pupils fail. Previous writers have suggested that cooperation and competition in Japanese schools are both multidimensional. For instance, Kataoka (1979) described two forms of Japanese cooperation: instrumental/goal-oriented cooperation and helping behavior, and Kiefer (1970) distinguished between intergroup and intragroup competition. The structure of Japanese cooperation and competition was determined here through factor analysis.

Because cooperation and competition have been related to gender roles (Barry, Bacon, & Child, 1957) and may change in importance during adolescence (Ahlgren & Johnson, 1979) we also examined age and gender variation in the data. Graves and Graves (1984) summarized the Western data on adolescent attitudes toward cooperation and competition as follows: (a) across grades males express more liking for competition than do females, whereas females express more liking for cooperation than do males, and (b) preferences for competitive learning increase with age for both genders. Previous studies usually have concerned attitudes toward learning structures (preferences for cooperative, competitive vs. individualistic rewards—Engelhard & Monsaas, 1989; Galejs & Stockdale, 1982), but here we studied attitudes toward a wider variety of academic and nonacademic activities. The third and fourth research questions were, Do pupils' attitudes become increasingly competitive and/or

cooperative over time? Are there gender differences in ratings of cooperative and competitive school activities?

The present study was the first longitudinal assessment of cooperative and competitive attitudes in Japanese schools. The fifth research question was, Do cooperative or competitive attitudes vary according to students' grade level, cohort membership, or the time of measurement? Previous cross-sectional research has indicated grade-level differences, but attitudes also may be influenced by the rapid social changes experienced by adolescents. Every year students witness major social changes, and the Japanese government continuously reforms its educational policies and goals (Schoppa, 1991). Such developments may impact the daily school life of adolescents. For instance, in the years before the present survey, jobs were plentiful, educational opportunities were expanding, and the Japanese economy was the envy of the Western world. Presently, employment opportunities are scarce and the economic "bubble" has "burst" (Wood, 1992), so the general orientation of Japanese youth has become more pessimistic and anxious. Because one must consider the time in history when adolescents attend school, age differences in cross-sectional research may conceal cohort or time-of-measurement variation. The present research did not assess social change or analyze its effects directly. Rather, it was an exploratory examination of longitudinal change and cohort variation.

METHOD

Generating Questionnaire Items

Three hundred schools (100 each at the elementary, junior high, and high school levels) were randomly sampled from a national listing of over 37,000 Japanese schools (*Zenkoku gakko yoran*, 1990). A letter was sent to each school, asking the principal to give questionnaire forms to two teachers. Teachers were asked to

list some behaviors you can see among your pupils which you believe are examples of cooperative [competitive] behavior. The examples may be observable either in or out of the classroom, and be (1) between two or more pupils, (2) of one pupil towards a peer, teacher, the principal or other staff member, or (3) of a solitary student you consider particularly cooperative [competitive].

One half of the distributed questionnaires asked about cooperation and the other half concerned competition, to avoid biasing teachers toward defining cooperation and competition as opposite in meaning.

An initial pool of 453 cooperative and 418 competitive items was provided by the 102 teachers who responded by mail. Since the initiation of this survey, we have observed very few additional examples of cooperation or competition, suggesting that the minority of teachers who responded to the first survey generated a complete pool of potential items. The items were typed onto index cards and screened independently by the authors. Items reported by only one teacher or at only one school level were eliminated, and the remaining items were sorted according to similarity of content. Discrepancies between sortings were resolved by discussion, narrowing the item pool to 31 cooperative and 33 competitive items.

Six school teachers and three educational psychologists screened these 64 items and selected the final 24 items, 12 each from the cooperative and competitive item pools. They eliminated items that were (a) socially desirable or undesirable, (b) not feasible behavior at all three school levels, more commonly observed behavior among either males or females, or very infrequent in occurrence. The nine Tokyo

specialists also found the wording of all items to be age-appropriate across school levels.

Target Schools and Subjects

The longitudinal survey was conducted at a co-educational school complex in Tokyo, affiliated with a national university. The junior high school (Grades 7 through 9) and high school (Grades 10 through 12) are located on the same campus. The students attending these schools tended to be slightly above average in academic ability, came from middle-class backgrounds, and aspired to enter nonelite universities. Every student at the school complex participated in the surveys, which took place in December of three consecutive years, and individuals' questionnaires were identified by asking their birth dates. There were three homeroom classes of 40 students in each grade, and the total Ate were 720 (Year 1), 690 (Year 2), and 710 (Year 3). In addition to the loss of twelfth graders from the sample on graduation, the attrition rates from the remaining grades were 10% between Years 1 and 2, and 8% between Years 2 and 3 of the study. To determine the generalizability of students' experiences at the school complex, the first author made informal weekly observations for one year at several public schools and at the complex where the survey was conducted. The daily social and academic experiences of students at all the schools were remarkably similar. Data were collected also once (in Year 1) from fifth and sixth graders at a different school (D. Shwalb & B. Shwalb, 1985), and are summarized.

The Attitude Survey

Questionnaire forms were distributed during homeroom classes. Teachers read the instructions aloud, and students completed the questionnaires in about 10 minutes. Pupils rated each of 24 items on a 5-point scale in terms of personal importance (5 = *very important*; 4 = *important*; 3 = *neither*; 2 = *not so important*; 1 = *not important*). A 5-point scale is the typical format on Japanese surveys, and is used also on primary and secondary school report cards. Pupils also rank ordered the "ten most important" among the same 24 items.

Using the Year 1 data, ratings and rankings by each pupil were compared to assess the reliability of the responses. Contingency table analyses crossed ratings of 5 or 4 (*very important* or *important*) with rankings among the top for each item, and rankings of 2 or 1 (*not so important* or *completely unimportant*) with nonranking of the item in the top ten. Across all 24 items, the average Goodman-Kruskal Gamma statistic between the ratings and rankings was .82 (range .57 to .91) and the median standard error for the gammas was .061 (range = .03 to .15). This significant correlation, $p < .001$, indicates a very strong consistency of response between two very different response modes. In addition, a two-week test-retest reliability assessment was conducted on 160 pupils (eighth and eleventh graders) at two schools in a different city. Pooled across grade levels, the test-retest correlations averaged .66 ($p < .001$) for the ratings.

RESULTS

Elementary School Data

Fifth- and sixth-grade data were collected once at a private school and are presented elsewhere (D. Shwalb & B. Shwalb, 1985). Children at this school were of the same SES background and ability level as the secondary school participants described previously. The factor structure of cooperation and competition items appeared to differ between the elementary and secondary school data. For elementary school data, there was a nine-item cooperation factor, similar to that found here for the secondary school data, and a nine-item competition factor. Two composite indexes were formed to assess the effects of school level and gender on general cooperativeness and general competitiveness. Cross-sectional analyses revealed that in both elementary and secondary schools (a) females

responded more positively to the general cooperation index than did males, and (b) males responded more favorably to the general competition index. In addition, high school students responded less favorably to cooperation items than did junior high school or elementary school pupils, whose responses were approximately equal. No school-level differences were found in pupils' responses to the general competition index.

TABLE 1: Factor Loadings for Cooperation, Nonacademic Competition, Academic Competition, and Group Competition Items

<i>Item</i>	1	2	3	4
Cooperation Items				
1. Active in homeroom and committee work	.73	.05	.13	.05
2. Counsels friend who is emotionally troubled	.72	.06	-.09	-.06
3. Helps others when own work is done early	.71	.09	.02	.04
4. Completes group's tasks to the very end	.71	-.08	.17	.26
5. Prepares for school events with classmates	.69	.03	.03	.25
6. Works happily in group no matter who partner is	.64	-.02	.13	.32
7. Helps the teacher with his/her work	.64	.07	.23	.00
8. Aids a friend who is weaker in sports	.61	.29	.06	.15
9. Participates in group studies	.60	.04	.02	.29
10. Selected as a starter on a sports team	.10	.68	.12	.36
11. Excels in individual sports races	.08	.65	.24	.11
12. Popular among classmates	.25	.62	.12	.05
13. Does well in contests or recitals	.35	.50	.44	.17
Academic Competition Items				
14. Studies for entrance examinations	.14	-.11	.67	.04
15. Gets better test grades than friends	-.09	.26	.66	-.04
16. Progresses faster than others in studies	.01	.26	.64	.08
Group Competition Items				
17. Active in club endeavors	.28	-.10	.30	.67
18. Strives to win in group sports meets	.02	.38	.06	.64
19. Is in the class which is superior in studies or sports	.12	.33	.31	.60
Other Items				
20. Plays with friends in free time	.46	.15	.07	.44
21. Talks with friends about the future or academics	.31	.00	.36	.23
22. Stands out for one's possessions and clothes	.22	.57	-.11	-.03
23. Praised or recognized by the teacher	.19	.50	.50	.01
24. Better one's own records	.32	.12	.37	.30

NOTE: Based on Year 3 data ($N = 710$).

Factor Analyses

In the present study, factor analyses were conducted on ratings of the 24 items to form composite measures. Factor structures across the entire seventh through twelfth-grade samples were quite similar for the data collected each year (with the exception of item 22), and are reported in Table 1 for the Year 3 data. The four-factor loadings after varimax rotation (minimum eigenvalue = 1.0) revealed one cooperation factor and three distinct competition factors.

Nine of the twelve teacher-generated cooperation items were used to form the first composite index, Cooperation. These items included a wide variety of activities, including prosocial behavior ("Helps the teacher with his/her work"), involvement in groups ("Active in homeroom and committee work"), and friendship relations ("Aids a friend who is weaker in sports"). Ratings of these nine items, pooled for all data across the 3 years of the survey (mean = 4.03, $SD = 0.87$) were higher than those for the competition items.

The first competition index consisted of four items related to competition in nonacademic and individualistic activities (e.g., "Does well in contests or recitals" and "Excels in individual sports races"—pooled Non-academic Competition items' mean = 3.31, *SD* = 1.08). A second competition factor included three items involving competition in academic contexts ("Studies for entrance examinations" and "Gets better test grades than friends"—pooled mean = 3.19, *SD* = 1.18) and a final three-item factor concerned competition in group settings (e.g., "Strives to win in group sports meets" and "Is in the class that is superior in studies or sports"—pooled mean = 3.71, *SD* = 1.13). Five other items, grouped as "other items" in Table 1, had either ambiguous or low factor loadings. Of these, item 22 ("Stands out for one's possessions and clothes") loaded inconsistently in factor analyses compared between the three data sets (Years 1, 2, and 3).

Composite indexes were formed as the sums of ratings for items loading on each factor. Cronbach alpha coefficients were then computed for each index for each year's data, and across years averaged .87 for Cooperation, .73 for Nonacademic Competition, .57 for Academic Competition, and .62 for Group Competition. The lower of these coefficients probably resulted from their smaller numbers of items. Averaging correlations across the 3 years of data, item-total correlations were moderate (.43 for Cooperation, .40 for Nonacademic Competition, .29 for Academic Competition, and .35 for Group Competition). In addition, the various factors were moderately (mean $r = .38$) intercorrelated.

Cross-Sectional Analyses

Multivariate Analyses of Variance (MANOVA) were conducted on the four composites for the effects of grade level and gender, separately for Year 1, Year 2, and Year 3 data. Table 2 displays the mean index scores as they varied between grade levels in each year of the survey. Longitudinal and cohort-related means also are presented.

TABLE 2: Mean Rating Scores on Four Indexes: Comparisons of Grade Levels, Cohorts, and Survey Years

	<i>Cohort Cohort Cohort Cohort Cohort Cohort</i>						
	5	1	2	3	4	6	
Year 1							
Grade		7	8	9	10	11	12
Cooperation		38.50	36.32	34.93	34.91	35.89	35.73
Non-Academic		12.89	13.34	12.99	13.04	13.77	12.64
Academic		9.96	8.81	9.19	9.54	10.15	10.27
Group Comp.		11.88	11.44	11.19	10.45	11.15	11.58
Year 2							
Grade		7	8	9	10	11	12
Cooperation		36.83	38.18	36.79	35.12	35.01	35.70
Non-Academic		13.27	13.46	13.37	13.65	13.04	13.04
Academic		9.58	9.85	9.34	10.11	9.70	10.36
Group Comp.		11.33	11.72	10.76	11.08	10.39	10.61
Years							
Grade	7	8	9	10	11	12	
Cooperation	36.75	36.34	38.24	36.13	35.86	34.07	
Non-Academic	12.35	13.65	13.86	12.79	14.22	12.79	
Academic	8.65	9.36	9.77	9.38	10.40	9.56	
Group Comp.	11.04	11.20	11.70	10.39	11.41	10.51	

NOTE: Maximum rating scores: Cooperation = 45; Nonacademic Competition = 20; Academic Competition = 15; Group Competition = 15.

Cross-sectional main effects (all $ps < .01$) were generally similar across the 3 years of the survey. For the Cooperation index, there were main effects for gender and grade level for all 3 years' data sets. Likewise, grade-level differences were found for Academic Competition and Group

Competition in all 3 years of the survey. Exceptions to this replicative pattern were (a) a grade-level effect for Nonacademic Competition (only in Year 3), and (b) a Grade-Level x Gender Interaction for Cooperation, $F(5, 615) = 3.20, p = .01$ (only in Year 2).

Univariate tests of grade level and gender effects. On Cooperation, gender effects were clearly replicated across surveys, as females rated these items as more important than did males (Year 1 means: females = 37.22, males = 34.95, $F[1, 651] = 25.05, p < .001$; Year 2: females = 37.29, males = 35.38, $F[1, 615] = 18.67, p < .001$; Year 3: females = 37.32, males = 35.20, $F[1, 573] = 21.10, p < .001$). However, grade-level effects were complicated, and comparisons of the three cross-sectional surveys showed cohort influences. Multiple range tests, using the Scheffe procedure, indicated the following.

First, on Cooperation, pupils from the same cohort 1 (seventh graders in Year 1) had higher scores than those at other grade levels, for all three times of measurement (Year 1: $F[5, 651] = 5.93$; Year 2: $F[5, 615] = 5.17$; Year 3: $F[5, 573] = 5.30$, all $ps < .001$). On the Nonacademic Competition index, the grade-level effect in Year 3 was related to a different cohort. Multiple range tests showed that tenth-graders' scores (mean = 12.79) were lower than those of ninth (13.86) and eleventh (14.22) graders, $F(5, 573) = 6.16, p < .001$.

On the Academic Competition composite, the Year 1 seventh-graders' scores (9.96) were higher than those of eighth (8.81) and ninth (9.19) graders, $F(5, 651) = 6.47, p < .001$. However, in Years 2 and 3, a different cohort difference was involved in the grade-level effect. Here, the ninth (9.34) and tenth (10.11) graders' scores were different, $F(5, 615) = 8.42, p < .001$, and a year later the same cohort 2/cohort 3 differences appeared as tenth (9.38) and eleventh (10.40) graders' scores differed, $F(5, 573) = 6.59, p < .001$.

Univariate tests on the Group Competition index also revealed a complex pattern. In Year 1 the high seventh (11.88) and low tenth (10.45) graders' ratings differed from those at other grade levels, $F(5, 615) = 4.70, p < .001$. In Year 2, the eighth-graders' scores (11.72) were higher than those at other grade levels, $F(5, 615) = 4.30, p < .001$. Finally in Year 3, eighth-graders' scores differed from the others', and tenth-graders' scores (10.39) were lower than others', $F(5, 573) = 4.66, p < .001$.

Longitudinal Analyses

Overall, the preceding cross-sectional analyses suggested both grade level and cohort variation. To clarify the cohort influences, a repeated measures analysis using MANOVA was conducted on the four composites, as a function of two between-subjects factors: cohort (1, 2, 3, 4 = seventh, eighth, ninth, and tenth graders in Year 1) and gender, and one within-subjects variable, time of measurement (Year 1, 2 or 3). These analyses were conducted only on data from the four cohorts which participated in all 3 years of the survey ($n = 357$). The design of these longitudinal sequences is shown in Table 3, and mean ratings are presented in Table 2. Figures 1-4 display the mean ratings for each index for the longitudinal data.

TABLE 3: Longitudinal Sequences Design

Cohort	Year1	Year2	Years
1	7	8	9
2	8	9	10
3	9	10	11
4	10	11	12
5		8	7
6	11	12	

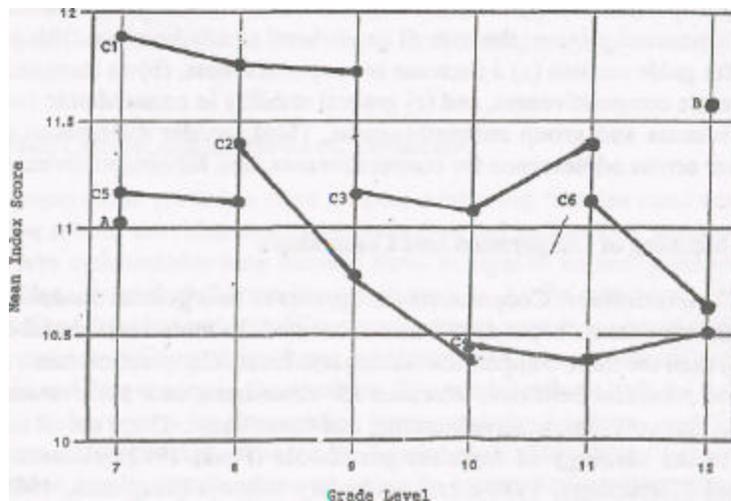
NOTE: Cohorts 5 and 6 were not included in repeated measures analyses.

Academic Competition. For Academic Competition there was a significant cohort effect, $F(3,327) = 3.00, p < .05$. Here, cohort 2 (eighth graders in Year 1) had the lowest score at all three times of measurement. In addition, there was a time of measurement effect, $F(2,327) = 6.66, p < .01$, and a Cohort x Time of Measurement interaction, $F(2,327) = 2.11, p < .05$. Here, cohort 3 (ninth graders in Year 1) had the second lowest Academic Competition scores in Year 1, and the highest scores in Years 2 and 3. Longitudinal trends, as shown in Figure 3, often indicated a slight increase in Academic Competition over time, with the exception of cohort 1. Particularly after eighth grade, we can see an increase in academic competitiveness as students approached the high school years.

Group Competition. There was a cohort effect on the Group Competition index, $F(3, 327) = 4.86, p < .01$, as well as a Cohort x Time of Measurement interaction, $F(6, 327) = 2.58, p < .05$. Here, it was cohort 2 (initially eighth graders) whose scores changed in a different manner from the other cohorts. Cohort 2 averaged the second highest on this index in Year 1, but had the lowest mean scores for Group Competition in Year 3. There was also a Cohort x Gender interaction, $F(3, 327) = 2.73, p < .05$, and multiple range tests indicated that cohort variation was significantly only for females. Overall, Figure 4 shows that longitudinal trends differed for each cohort. Specifically, cohorts 1 and 4 revealed little change, cohort 2 scores decreased, and cohort 3 scores increased slightly, across the three times of measurement.

Figure 4: Group Competition Index Means: Longitudinal Cohort Trends

C » Cohort
 B - Grade 12 (Vr. 1 only)
 A » Grade 7 (Yr. 3 only)



DISCUSSION

The following summarizes the main findings of this investigation and the elementary school analyses (D. Shwalb & B. Shwalb, 1985). First, the meaning of competition becomes more complex in the transition to secondary school, changing from one global orientation to three situation-specific orientations (i.e., toward competition in academic, nonacademic, and group contexts). Second, although cohort influences complicate the developmental picture, the overall grade-level trends between fifth and twelfth grade include (a) a decrease in cooperativeness, (b) an increase in academic

competitiveness, and (c) general stability in nonacademic competitiveness and group competitiveness. Third, gender differences are clearer across adolescence for cooperativeness than for competitiveness.

The Meaning of Cooperation and Competition

Cooperativeness. Cooperativeness appears to be a general dimension, and the nine-item cooperation factor accounted for more variance (about 30%) than the three competition factors combined. Cooperation items included prosocial behavior, tolerance for classmates, task perseverance, group harmony, cooperative learning, and friendliness. These are all central to the ideology of Japanese preschools (Peak, 1992) elementary school (Cummings, 1980), and secondary schools (Singleton, 1982). Therefore, cooperation was revealed in the present data as unidimensional and multibehavioral.

Competitiveness. Competition, on the other hand, grows in complexity as the social world of the individual expands. It is unidimensional in elementary school (D. Shwalb & B. Shwalb, 1985), but in secondary school students begin to differentiate between three forms of competition. This change in the meaning of competition in adolescence may be attributed both to social-cognitive growth and to changes in the life experiences of adolescents. For instance, Niederman (1978) and Selman (1980) have shown that conceptualizations of group processes and role-taking abilities change in early adolescence. The increasing awareness of intragroup and intergroup relations found by these researchers should affect students' understanding of cooperative and competitive activities. In terms of life experiences, the Japanese primary school child lives in a simple social world, centered between home life and a close-knit homeroom class at school. In the transition to junior high school, young adolescents enter the arenas of "entrance examination hell" (Frost, 1991), after-school "cram schools" (Harnisch, in press) and post-high school "career/educational advancement" (Rohlen, 1983). Therefore, grade school children may see competition simply as "winning" or "being the fastest." However, academic, nonacademic, and group competition become distinct as the young Japanese adolescent learns that competition is a serious and personal matter, to be confronted in differing ways in a variety of situations.

Gender, Cohort, and Grade-Level Variation

Cooperation. As in previous studies, adolescent females rated cooperative school activities more positively than did males. This gender effect was unmistakable here because items thought to be sex-typed were intentionally excluded from the questionnaire. At the same time, both males' and females' ratings of Cooperation items were more positive than their ratings of Competition items, particularly in comparison with Academic and Nonacademic Competition. The modal ratings both by males and females were 4 for Cooperation items and 3 for Academic and Non-academic Competition items, on the 5-point scale. This suggests that the Japanese implicit curriculum successfully fosters cooperative orientations in all students.

All cohort effects are difficult to interpret because data were not collected to document the experiences and other characteristics of the various cohorts. Thus we cannot explain why cohort 1 had the highest Cooperation scores over the course of 3 years. Kataoka (1990) has pointed out one possible explanation—the strong influence of Japanese homeroom teachers on student interactions and thinking, as each teacher creates a classroom environment attuned to his or her personality. The cohort effect and the Gender x Time of Measurement interaction (no gender effect in Year 2) both call into question generalizations made by Ahl-gren and Johnson (1979), who found a "general drift downward over Grades 2-12 and a consistently higher Cooperation mean for females" (p. 47). Looking at the cross-sectional data, there seems to be a slight downward drift in Cooperation scores, especially in high school. Viewing the longitudinal data, however, there was also some stability in scores over time. Cohort variation is therefore unmistakable, and further research is needed to determine the extent of the decline of cooperativeness with age.

Nonacademic Competition

Individualistic orientations were not the original focus of this study, but factor analyses showed a conceptual overlap among individualistic and competitive activities. The four Nonacademic Competition items (e.g., "Excels in individual sports races"; "Selected as a starter on sports team") involved recognition of individuals rather than of groups.

Overall, Nonacademic Competition items were rated less favorably as compared with Cooperation items (usually 3 on the 5-point scale for Non-academic Competition, and 4 for Cooperation). A Cohort x Time of Measurement interaction was the only significant effect for Nonacademic Competition. Age trends in competitiveness have been inconsistent in past research, possibly due to unmeasured cohort influences. For instance, Ahlgren and Johnson (1979) found a decrease in competitiveness with age, whereas Owens and Barnes (1982) noted an increase with age in preferences for competitive learning. The lack of any grade-level effects suggests that stability best describes the developmental picture concerning Nonacademic Competition. This is not surprising when one considers that most Nonacademic Competition activities (sports, contests, recitals, peer group popularity) are aspects of school life in both childhood and adolescence.

Academic Competition

The Kiefer (1970) analysis suggested that academic competition among Japanese adolescents is between anonymous rivals for admission to high school or college. However, the contents of the teacher-generated items showed that academic competition can be between classmates ("Gets better test grades than friends"). In general, pupils rated Academic Competition items as less important (modal response = 3) than Cooperation items, and equally important as Nonacademic Competition items.

There were no gender differences for this index, and significant effects were found for cohort and Cohort x Time of Measurement. Cohort 2 had the lowest Academic Competition scores at all three times of measurement, and cohort 3's scores changed dramatically between junior high school and high school. Figure 3 shows that with the exception of cohort 1, most longitudinal change on Academic Competition is toward higher competitiveness. Thus Cohort and age-related change both may be operative during adolescence for Academic Competition.

Group Competition

This study revealed a conceptual overlap between group-centeredness and competitiveness. We may contrast ratings of items that concerned competition between groups, with the more individualized activities depicted in the Nonacademic Competition items. Generally, pupils rated the Group Competition items as more important than item activities in which one competes alone.

For two of the three items that loaded on the Group Competition factor, the rival was known to the group ("Strives to win in group sports meets" and "Is in the class which is superior in studies or sports"). Therefore, competition in Japanese secondary schools takes place among both individuals or groups, and intergroup competition may be face to face. Items used in previous Western surveys (Ahlgren & Johnson, 1979; Owens & Barnes, 1982) did not distinguish between group and individualistic competition, and all their group-related items were defined as cooperative. The Group Competition items were usually rated more positively than the Academic Competition or Nonacademic Competition items, although they were not rated as highly as Cooperation items (grand item mean ratings for all data: Cooperation = 4.03, Group Competition = 3.72, Nonacademic Competition = 3.31, Academic Competition = 3.19). These favorable responses may be due to the cooperative aspects of Group Competition. For instance, to "win in group sports meets" pupils may "compete cooperatively" (e.g., in a relay race).

For Group Competition, a cohort effect and Cohort x Time of Measurement interaction were significant. Here, the cohort measured between eighth and tenth grades stood out because its Group Competition scores were high in Year 1 and low in Year 3. In Figure 4, different cohorts display stable, increasing or decreasing levels of Group Competition over time, suggesting that for Group Competition, cohort differences may outweigh age differences.

CONCLUSIONS

The first limitation of this study was its reliance on self-report measures. Follow-up research should include direct observations of cooperative and competitive behavior in and outside of classrooms (to determine the actual extent of the behaviors represented in our questionnaire items), and of environmental factors thought to cause cooperativeness or competitiveness. A second limitation was in the measurement instrument itself, as the specific choices of the 24 items influenced the factor structure of the data. A third limitation is that the longitudinal data could only be collected for 3 years, as it was impossible to request further data from the targeted school complex.

In addition, our item-generation strategy may have produced a questionnaire which is particularly sensitive to cohort differences, and insensitive to gender variation. It is possible that the situation-specific items (e.g., "Active in club endeavors") generated by teachers are more susceptible to cohort influences than are generic items (e.g., "I don't like working in groups"). This is because the value placed on specific experiences may vary according to the activities emphasized year to year by different teachers. In addition, because teacher-generated items that were thought to be clearly more prevalent among either males or females were screened out, the present results may underestimate gender differences in attitudes.

Finally, although we discussed the four indexes independently, they are not independent phenomena. Cooperation and competition occur simultaneously and in various combinations. For instance, at the annual Sports Day festival that takes place at every school, students are divided into a "red" team and a "white" team, for whom total scores are announced (group competition). They perform dances and exercises as one large group (cooperation), and compete in both relays (group competition) and individual (nonacademic competition) track and field events. In addition, various pupils are assigned both small-group and individual managerial and clean-up roles that involve cooperation with peers and teachers. At the end of the meet, a winning team is announced, prizes are given to winners of both individual and group events (non-academic and group competition), and all participants are praised for preparing together and participating harmoniously (cooperation). Academic activities are an equally complex blend of competitive, cooperative, and individualistic behaviors.

The data indicate that a decrease in the importance attached to cooperativeness is more apparent than a higher value placed on competitiveness over time. Depending on one's interpretation (and one's ideology), it could be said that the school sampled fosters a decline in cooperativeness, greater individualism, more isolation, or greater academic competitiveness. Yet the pervasive cohort effects indicate that "age trends" in cooperativeness and competitiveness may be quite malleable, as influenced by the experiences of individuals or homeroom classes.

Certainly attitudes toward working in groups and striving for excellence affect how youth achieve academically and perform as adult workers. The long-term goal of our ongoing research is to understand how Japanese school socialization combines different cooperative and competitive activities, and how such experiences influence personality development.

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