

A Cross-Cultural Study of Achievement Goal Tendencies

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As Maehr & Pintrich (1991) indicated, the focus of motivational research is increasingly tending to be placed on the individual's personal construct of meaning or purpose for achievement and on the nature of strategies leading to achievement.

Dweck (1986) proposed that students have two kinds of achievement goals: a learning goal and a performance goal. The students who have the former goal are concerned with increasing their competence. On the other hand, those having the latter are concerned with gaining recognition of their competence. Moreover, she asserted that achievement goals are influenced by self perception of intelligence, that is, conceiving intelligence as something that is fixed leads to performance goals, whereas regarding intelligence as something that is incremental results in learning goals.

In line with Dweck's theory, Hayamizu et al. (1989) made a new construct, the "achievement goal tendency", which implied individual differences in achievement goals. In other words, achievement goals are generalized across a variety of learning situations. With use of factor analyses, three achievement goal tendencies were found: one learning and two performance goal tendencies.

The learning goal tendency (LG) corresponded closely to Dweck's learning goal. However, the performance goal was divided into two types. One was the tendency for students to learn in order to gain approval and avoid rejection from their

teachers and parents ($P \alpha G$), and the other was that for students to learn because they want to get good grades and advance ($P \beta G$). In addition, Hayamizu et al. (1989) found, instead of the perceived intelligence defined by Dweck, three conceptions of ability and effort: ability centered (AC), effort centered (EC) and ability-effort relativity (AER). AC is the conception that ability is a more important determinant for achievement than effort, and that the more talented one is, the less effort he requires. In contrast, EC implies that effort is more important than ability and that ability is formed through effort. AER takes a middle stance between AC and EC, in other words, it implies that there are a lot of interactions between ability and effort in spite of a definite assumed limit in ability. Moreover, in analyzing the relationship between achievement goal tendencies and the conceptions of ability and effort, it was found that LG correlated positively to EC and negatively to AC. Such results seem to almost concurrent with Dweck's view.

Since then, several studies have been conducted (Hayamizu et al., 1989). However, all these studies, except Hayamizu & Weiner (1991) on American university students, have been done on Japanese high school students as subjects. Thus, the issue of whether or not foreign students show the same patterns as Japanese students is yet to be made clear. It would appear that there may be cultural differences in achievement goal tendencies and conceptions of ability and effort and that further investigation on samples other than

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Japanese would be warranted.

The main purpose of this study is to compare achievement goal tendencies and the conceptions of ability and effort amongst Japanese, Chinese and American high school students.

In addition, we are concerned with age and sex differences in these variables. Such differences have not been examined adequately even in Japanese data. Thus, it is meaningful to examine whether or not similar age and sex differences in achievement goal tendencies and conceptions of ability and effort would be shown across these three cultures. The second purpose, then, is to reveal age and sex differences.

Third, we aim at confirming whether the relationship between achievement goal tendencies and conceptions of ability and effort would be similar for the three cultures.

The purposes and hypotheses of this study are described specifically as follows.

1. Three achievement goal tendencies are compared among Japanese, Chinese and American students. Comparisons between age (junior vs. senior high school students) and between sex (male vs. female students) are also examined.

Considering the social environments for junior and senior high school students, it would appear that most Japanese and Chinese students learn their school subjects with more tension and less interest than do their American counterparts, because the former have to go through the so-called "entrance examination hell". It can be expected that the former students have lower LG and higher $P\beta G$ than the latter. However, we cannot predict cross-cultural differences in $P\alpha G$.

Psychological pressure for entrance examination seems to get stronger and stronger with an increase in age. Besides, there has been a lot of indirect evidence pointing to the fact that intrinsic motivation decreases with age (Sakurai, 1983). Accordingly, it is hypothesized that senior high school students have lower LG and higher $P\beta G$ than do junior high school students. $P\alpha G$ would

decrease as age increases because students become more independent as they approach adulthood.

Concerning sex differences in achievement goal tendencies, there have not been any theories or researches leading to clear predictions.

2. From the same viewpoints as mentioned above, the conceptions of ability and effort are compared amongst three national groups. According to Hess R. D. et al. (1987), mothers of Asian students attributed their children's performance more to effort than American mothers, whereas the latter tended to attribute it to ability. Also, Holloway, S. D (1988) did a review on the concepts of ability and effort in Japan and the United States, suggesting that while effort is identified as the primary determinant of achievement in Japan, ability is emphasized more in the United States. Hence, in comparison with American students, Japanese and Chinese students would attach more importance to effort than ability, that is, Asians would show higher tendencies in EC and AER than in AC.

Regarding age differences, it is surmised that senior high school students are more likely to attach importance to ability than their junior high school counterparts, because many of them become more conscious of their limits in effort through the intensively competitive school environment.

Further, Frieze, Whitley, Hanusa, and McHugh (1982) concluded that women are less likely than men to attribute their success to ability on the basis of a meta analysis of 21 studies of the attributional patterns of men and women. In accordance, male students are expected to have higher AC and lower EC than females.

3. The relationships between achievement goal tendencies and the conceptions of ability and effort are examined. Generally, the relationships just as Dweck had suggested would be shown regardless of culture, that is, AC would be positively associated with $P\beta G$ and $P\alpha G$, whereas AER and EC would be positively related to LG.

Method

Subjects

The subjects were Japanese, Chinese and American students. The number of subjects by nation, age (junior high versus senior high school students) and sex were shown in Table 1. To be specific, all American students in this study were Japanese Americans. Junior high school students ranged in age from 13 to 15 and senior high school students ranged from 16 to 18.

Table 1 Number of subjects by culture, age, sex

	Junior HS		Senior HS		Total
	M	F	M	F	
Japanese	233	245	307	62	847
Chinese	125	98	133	85	441
Americans	69	29	30	35	163
Total	427	372	470	182	1,451

Materials

The questionnaire was composed of two sets of measures. Both sets have already been used in a previous study (Hayamizu et al,1989). The first set was for the measurement of achievement goal tendencies and was composed of 26 five-point-scale items. The second set consisting of 27 items was constructed in order to measure the conceptions of ability and effort.

Procedure

First factor structure similarity across the three national groups was examined for both achievement goal tendencies and conceptions of ability and effort.

The structures of achievement goal tendencies were analysed by a clustering method based on a fuzzy operation (Pan 1990). This method transformed the correlation matrix among extracted factors into a similarity matrix based on fuzzy operation, and clustered them hierarchically. This method made it possible to compare the three structures of achievement goal tendencies shown

by Japanese, Chinese and American students. Through factor analyses (principal factor analysis with varimax rotation method), 4 factors for Japanese, 6 factors for Chinese, 5 factors for Americans were extracted. Then, the clustering method described above was applied for the factors extracted from each sample. The results were presented in Fig. 1 to Fig. 3. As can be seen in these figures, two clusters seem to be common across the three samples. The first cluster can be regarded as a learning goal tendency. It corresponds to the 1st factor for Japanese, the 1st factor for Americans, and the 1st, 2nd and 3rd factors for

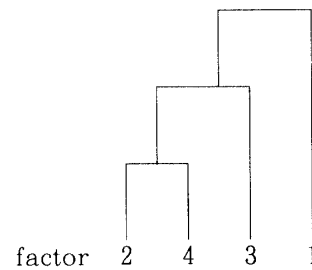


Fig. 1 Factor cluster tree for Japanese

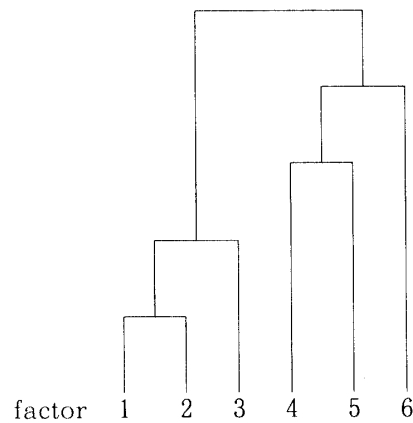


Fig. 2 Factor cluster tree for Chinese

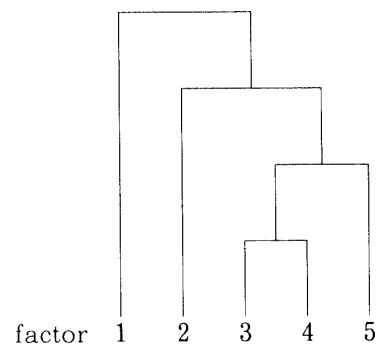


Fig. 3 Factor cluster tree for Americans

Chinese. The second cluster appears to be a performance goal tendency, just as they had been conceptualized by Dweck (1986). Moreover, the latter cluster was divided into sub-clusters. All groups were in agreement on this point. One sub-cluster corresponded to the 3rd factor for Japanese, the 6th factor for Chinese and the 2nd factor for Americans. Another sub-cluster was composed of the 2nd and 4th factors for Japanese, the 5th factor for Chinese, and the 3rd, 4th and 5th factors for Americans. It can be suggested that there could be two kinds of performance goal tendencies as has been conceptualized by Hayamizu et al. (1989). That is, the former cluster corresponds to $P\beta G$ and the latter to $P\alpha G$.

In conclusion, it could be judged that Japanese, Chinese and American students had the same factor structures of achievement goal tendencies as had been shown in the form of LG, $P\alpha G$ and $P\beta G$ in the previous study with Japanese subjects.

On the basis of the same method as above, it was examined as to whether or not the factor structures for the conceptions of ability and effort are similar across the three national groups. As a result, it was confirmed that regardless of their nationality, they could have in common three factor structures for the conceptions of ability and

effort, which were named AC, AER and EC in our previous study.

Results

Achievement Goal Tendencies

Table 2 presents the means and the standard deviations for achievement goal tendencies classified by culture, age and sex. The data was then subjected to ANOVA on the three factors mentioned above.

Concerning LG, although the main effects for culture and sex were statistically significant [$F(2,1426) = 437.67, p < .001, F(1,1426) = 4.58, p < .05$, respectively], there was no significant difference for age. Also, the interactions for culture \times sex [$F(2,1426) = 3.27, p < .05$], culture \times age [$F(2,1426) = 4.26, p < .01$] and culture \times sex \times age [$F(2,1426) = 9.94, p < .05$] were significant. The effect of culture especially was outstanding, with Chinese students ($M = 55.9$) showing the highest LG of the three national groups. On the other hand, the difference between Japanese ($M = 40.2$) and American students ($M = 44.2$) was not significant according to Duncan's multiple range test. That is, the hypothesis that American students would have high LG was not supported. Further, for the Chinese, junior high school stu-

Table 2 Means and standard deviations for achievement goal tendencies by culture age and sex

Culture	Age	Sex	LG		$P\alpha G$		$P\beta G$	
			mean	SD	mean	SD	mean	SD
Japanese	Junior HS	M	40.1	9.33	15.4	3.17	26.6	6.84
		F	40.4	9.16	15.4	3.17	25.3	7.28
	Senior HS	M	39.0	9.37	14.5	3.30	26.0	6.81
		F	44.5	7.45	14.9	2.62	24.7	5.71
Chinese	Junior HS	M	56.7	6.96	18.3	2.40	31.9	7.21
		F	57.6	6.71	18.1	2.34	30.7	7.73
	Senior HS	M	54.4	8.38	16.9	3.32	29.4	7.82
		F	54.9	5.85	16.3	2.91	29.3	6.31
Americans	Junior HS	M	46.0	7.75	17.7	2.58	27.3	7.69
		F	41.7	9.70	15.9	3.50	25.6	7.72
	Senior HS	M	42.3	11.60	15.7	2.71	24.5	7.62
		F	44.2	10.20	16.0	2.76	26.5	7.05

dents showed consistently higher LG than senior high school students as expected, while for Japanese and American students, the difference in ages varied depending on sex.

Turning next to P α G, all three main effects were significant [F(2,1426) = 59.55 p<.01 for culture, F(1,1426) = 8.68, p<.01 for age, F(1,1426) = 5.39 p<.05 for sex]. The Chinese students' P α G (M=30.4) was substantially higher than that of Japanese (M=25.9) and American (M=26.3). The Japanese students' P α G was similar to the American students'. The mean P α G for junior high school students (M=27.5) was significantly higher than that for senior high school students (M=26.9), as assumed in the hypothesis. The sex difference was not pronounced across means (M=27.4 for males, M=26.9 for females). This statistical significance may have been achieved due to large sample size of the subjects.

With regard to P β G, the main effects for culture and age were significant [F(2,1426) = 95.20, p<.001, F(1,1426) = 42.93, p<.001, respectively]. The Chinese (M=17.4) had significantly higher P β G than Americans (M=16.6), while the Japanese students (M=15.0) showed the lowest P β G. Although the Chinese results supported our hypothesis, the result for the Japanese was opposite.

Junior high school students (M=16.4) indicated higher P β G than senior high school students (M=15.4) except for American females. This result was contradictory to our hypothesis.

Conceptions of Ability and Effort.

Means and standard deviations for the three conceptions of ability and effort analysed by culture, age and sex are presented in Table 3.

First, AC was subjected to ANOVA. Two significant main effects [F(2,1426) = 28.94, p<.001 for culture and F(1,1426) = 48.68, p<.001 for age] and one significant interaction [F(2,1426), p<.05 for culture × age] were found. Both American (M=38.0) and Japanese students (M=37.3) showed significantly higher AC than the Chinese (M=34.3). The former regarded ability as more important than the latter. That is, American students supported our hypothesis whereas Japanese students did not. Also, senior high school students (M=38.0) had higher AC than junior high school students (M=35.2) across the three cultures. This result was consistent with our hypothesis. The effect of sex differences as expected, however, could not be found.

Second, concerning AER, three main effects were significant [F(2,1426) = 20.05, p<.001 for culture, F(1,1426) = 13.35 p<.01 for age and

Table 3 Means and standard deviations for conceptions of ability and effort by culture, age and sex

Culture	Age	Sex	AC		AER		EC	
			mean	SD	mean	SD	mean	SD
Japanese	Junior HS	M	36.6	8.59	32.3	4.85	16.5	3.61
		F	36.2	8.68	33.1	4.61	17.6	3.21
	Senior HS	M	38.9	7.45	32.7	4.14	16.7	3.29
		F	37.6	8.70	34.1	3.62	16.5	3.06
Chinese	Junior HS	M	32.7	6.85	31.9	4.44	16.5	3.92
		F	31.3	6.32	32.2	4.13	17.0	3.31
	Senior HS	M	36.7	6.89	33.5	4.31	14.9	3.20
		F	36.4	5.62	33.9	3.54	15.5	3.02
Americans	Junior HS	M	36.2	5.30	31.0	4.23	16.8	2.70
		F	39.1	7.07	29.3	4.20	16.6	3.62
	Senior HS	M	38.8	6.28	30.7	4.12	14.8	3.14
		F	39.9	7.64	30.3	4.68	16.0	3.47

$F(1,1426) = 4.26$ $p < .05$ for sex]. The fact that Chinese ($M=32.8$) and Japanese students ($M=32.8$) indicated higher AER than American students ($M=30.5$) was consistent with our hypothesis. Although the effects of age and sex were significant, they were inconsistent across the three cultures.

Finally, the results of EC were similar to those of AER. Three main effects were significant [$F(2,1426) = 11.14$, $p < .001$ for culture, $F(1,1426) = 17.44$ $p < .01$ for age and $F(1,1426) = 10.83$ $p < .01$ for sex]. Also, the sex \times age [$F(2,1426) = 6.44$] and the culture \times age \times sex interaction [$F(2,1426) = 3.17$ $p < .05$] were significant. Japanese students ($M=16.9$) tended to have significantly higher EC than Chinese ($M=15.9$) and American students ($M=16.2$). Thus it can be said that the Japanese and American results supported our hypothesis. Further, as expected, junior high school students ($M=16.9$) showed higher EC than senior high school students ($M=16.0$), and female students ($M=16.9$) had higher EC than male students ($M=16.2$).

Relationships between Achievement Goal Tendencies and the Conceptions of Ability and Effort.

Table 4 presents partial correlation coefficients between achievement goal tendencies and the conceptions of ability and effort for each culture, partialing out the effects of sex and age. As expected, the significantly negative correlations were shown between LG and AC for the Chinese and Japanese. On the other hand, the three national groups without exception, indicated significantly positive correlations for AER and EC with

LG. These results supported the hypotheses of the relationships between LG and the conceptions of ability and effort across the three cultures.

Regarding the two performance goal tendencies, however, the predicted correlation was not entirely obtained. For example, although negative correlations were expected for $P\alpha G$ and $P\beta G$ with AC, these were not attained except for $P\alpha G$ and AC for the American students. Moreover, contrary to the established hypothesis, significantly positive correlations were shown between each of $P\alpha G$, and $P\beta G$, with both AER and EC.

Discussion

The hypothesis that Japanese and Chinese students would have lower LG and higher $P\beta G$ than American students was not necessarily supported. Chinese students showed high average scores for all three achievement goal tendencies. In contrast, these scores were low in Japanese students regardless of the kinds of achievement goal tendencies. With this respect, American students were similar to Japanese students. However, such a result might be associated with the fact that all American subjects were Japanese American. Sampling confounding could have been avoided by taking a more representative sample with consideration of ethnic composition.

The hypothesis that Chinese students have high $P\beta G$ because they have to experience strict competition to be admitted into an advanced school was supported.

However, the fact that they also showed high LG was inconsistent with our hypothesis. Chinese

Table 4 Partial correlation coefficients between achievement goal tendencies and conceptions of ability and effort for three groups (partialled out the effects of sex and age)

	JAPANESE			CHINESE			AMERICANS		
	AC	AER	EC	AC	AER	EC	AC	AER	EC
LG	-.26**	.24**	.15**	-.27**	.29**	.15**	-.04	.24**	.19**
$P\alpha G$.02	.10**	.09**	.08	.08	.12*	-.17*	.28**	.13
$P\beta G$.05	-.03	.14**	.15**	.12**	.06	.11	.14	.13

* $p < .05$ ** $p < .01$

students seem to enjoy learning for the purpose of preparing for the entrance examination. Can this be true? Many uphold that learning for the sake of entrance examinations is depressing, hard, cumbersome and stressful. However, there are even some Japanese who view that learning for the sake of entrance examinations as a positive thing. For example, one thinks of it as a good opportunity to cultivate one's ability and character. It appears that Chinese students might be educated to regard the entrance examination as something positive. Furthermore, it appears that Chinese responses tended to reflect ideal tendencies, not actual ones. In our own culture, however, students are able to clearly distinguish between what are ideal achievement goals and what are realistic in their responses to the items. Most Japanese students cannot maintain LG under pressure of the entrance examination. Also, the fact that there are a lot of attractive alternatives in which to engage in Japan and the United States, such as a wider option sports and various family computer games whereas the Chinese society offers few such amusement, perhaps accounting for the differences in the level of LG. In other words, Chinese students might regard learning as a relatively attractive achievement goal in itself because they have few other alternatives from which to choose. However, it is not clear as to why Japanese students showed low $P\beta G$, inspite of their "examination hell". They might have consciously rejected recognizing $P\beta G$ as their own achievement goal even if they actually had high $P\beta G$ because they do not regard it as socially desirable goal. However, a new view that the performance goal does not contrast but compensate for the learning goal, could be established. For instance, one's feeling of self efficacy through triumph in a competitive situation might produce intrinsic motivation. Clarification of the processes of interactions between learning and performance goals is an interesting issue for investigation.

Furthermore, concerning age differences in

achievement goals, junior high school students displayed not only higher LG but also higher $P\beta G$ than senior high school students. The fact that LG decreases as age increases is consistent with the hypothesis. On the other hand, the result for $P\beta G$ contradicts it. It is probably due to the fact that while almost all junior high school students plan to advance and thus take entrance examinations, many senior high school students do not necessarily intend to go on to further their education.

Also, the results for with the conceptions of ability and effort raise some concern. American students showed high AC while the Chinese indicated high AER as expected. However, Japanese students showed somewhat inconsistent results: they have higher AC than do Chinese students and higher AER and EC than do American students. In other words, Japanese students have conflicting conceptions of ability and effort. They have to regard their ability as an important determinant of their performance because they must face severe competition in entrance examination. Simultaneously, they have to maintain, apparently at least, the virtue that their performance depends on their own efforts because they feel implicit or explicit expectations from teachers and parents. This could be the reason as to why Japanese students indicated contradicting results.

Sex differences in EC were found as predicted, that is, females were more likely to have higher EC than males. Presumably, this is because female students often receive reinforcement in the processes of their making an effort, whereas male students are often evaluated in terms of only their outcomes.

Finally, concerning the relationships between achievement goal tendencies and the conceptions of ability and effort, our hypothesis was partially supported: a negative correlation between LG and AC, and positive correlation between LG with AER and EC were recognized across the three cultures. On the other hand, the relationships between the

two kinds of performance goals and the three conceptions of ability and effort were not consistent across Japanese, Chinese and American students. It seems that although LG, as a goal, is perceived similarly across the three cultures, $P\alpha G$ and $P\beta G$ might not be. It is necessary for us to examine the differences in the contained meanings of performance goal tendencies amongst Japanese, Chinese and American students.

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