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Cooperative Learning between East and West: culturally appropriate instructional design principles for solving cultural conflicts and mismatches

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Abstract

Cooperative Learning (CL) is an educational method rooted in Western social psychology with fundamentally psychological assumptions. In this article, we argue that the mere application of CL as a Western educational method into Asian Confucian Heritage Cultures (CHC) needs to be questioned. We begin by using prior research, particularly 7 broad propositions that differentiate how cooperation can be effectively achieved in Asia-CHC and other comparative cultures through various cooperation mechanisms such as leadership, trust, identity and reward. Based on these propositions, we then construct 9 hypotheses, which predict how CL can be cultural, appropriately applied in Asia-CHC. Results show that seven hypotheses are confirmed. We conclude that CL can be cultural appropriately applied in Asia-CHC with probability of higher learning outcomes, higher level of effort and learning motivation by having cooperation mechanisms structured in a way that is compatible with the host culture.

1 Introduction

Cooperative Learning (CL) is rooted in Western social psychology, more specifically North-west Europe and North America. It started with Kurt Lewin who influenced the development of the Group Dynamics movement in the early 40s. His students such as Leon Festinger and Morton Deutsch followed with research in applied social psychology with specific interest in productivity of group works experiencing cooperative or competitive conditions. Lewin's heritage continues on through third Lewinian generation such as David Johnson (Five premises of CL) and Eliot Aronson (Jigsaw I). Other Lewinian-oriented psychologists are Slavin (STAD, TGT, Jigsaw II, TAI, CIRC), Sharan (Group investigation), Kagan (COOP-COOP) and Cohen (Complex instruction). In a sense, the history of CL is largely Western dominated and it has to a certain extent the traits of Western fundamentally psychological assumption. For instance, the notion of "positive interdependence"- the second telnet in Johnson & Johnson's model of CL- refers to a relationship in which the goals of each individual can be achieved only if those of the others also can be achieved. This conception reflects western individual rationality in which others in the collectivity serve as instruments for achieving individual self-interest (Chen et al., 1998). When CL is to be applied in a non-western context, one may ask if the fundamental individualistic foundation that CL is based on will incorporate into a context of different norms and values, especially that of collectivist societies where the "organic" view of a community has special and urgent needs that go beyond the needs of its individual members (Lodge and Vogel, 1987:15). Similarly, accountability, trust or reward allocation is all cooperation mechanisms that mediate themselves differently across cultures.

Whether successful or not, in fact, the application of CL in parts of the world others than the West seems to have some problems. These problems are likely to be culture-related. For example, CL was seen as counterpoint to mainstream formal education in South Africa (Taylor, 1995); as an adverse environment for Japanese high achievers (Sugie, 1995); or CL as an obstacle in the context of curriculum constraint, class-size and achievement pressure (Singh, 2004). By mean of experiments, Messier reported in 2003 that the Chinese students in the traditional lecture-based learning obtained higher achievement scores than the students in the CL. More theoretically, by combining a rich amount of related literature, a recent comparative study of Phuong-Mai, Terlouw and Pilot (2006) reveals a complex web of cultural conflicts and mismatches that are likely to happen when the mere Western CL methodology is applied in Asian context without rigorous adaptation to improve compatibility with the host culture. Together with a small but increasing number of researchers who advocate for culturally appropriate pedagogy, we argue that in the process of adopting educational methods from the West, culture is a neglected angle and consequently merits attention (Thomas, 1997; Walker & Dimmock, 2000).

The main question to be answered in our study is how adaption should be taken so that CL will be applied in a culturally appropriate manner. A special reference is given to the educational context of Asian Confucian Heritage Cultures (CHC), which basically include China, Vietnam, Japan, Korea, Taiwan and Singapore. The article is divided into several sections. In the first, we made a connection between culture and cooperation and present prior research that differentiates how

cooperation can be effectively achieved across cultures. In particular, we use seven propositions in the study of Phuong-Mai, Terlouw and Pilot (in press), which predict how different cooperation mechanisms such as goal, trust and reward should be structured so that cooperation is optimal in Asia-CHC and other comparative cultures. Derived from these seven broad propositions, in the second section, we construct nine hypotheses, which predict how CL can be cultural appropriately applied in Asia-CHC. In the third section, we present the research results and discussion.

2 Culture and cooperation

Cooperation is crucial in all societies. However, our understanding of the connection between cultures and cooperation is just beginning to develop. One broad and somewhat stereotypical cultural difference regarding cooperation, which revolves around the Individualism-Collectivism construction, is that there is more cooperation among collectivists than among individualists. Though such a generalization has some validity, our cultural understanding of cooperation needs to go deeper than just that in order to provide useful implications for practice. A more sophisticated view should focus on the means and processes by which cooperation is initiated and maintained. Given that cooperation is perceived and achieved differently in different cultures, it is required to explore and contrast culturally linked cooperation mechanisms such as goal, identity, trust and rewards. That is to say cooperation mechanisms and the specific normative values of one culture are made compatible and mechanism that appeals to and satisfies dominant rationality in that culture will be more effective. In other words, cooperation in one culture can be fostered more or less effectively based on how culturally appropriate one or more mechanisms are perceived and applied.

With regards to CHC, Phuong-Mai, Terlouw and Pilot (in press) theoretically formulate a model of cooperation, which shows how to foster cooperation in CHC and its comparative cultures in a culturally appropriate way. The authors use Hofstede's typology (2003) as the theoretical framework, which describes culture in five distinctive dimensions. According to this typology, CHC tends to orient towards "large power distance", "collectivism", "masculinity" with regards to the social standing of women, "high uncertainty avoidance" with regards to teaching and learning, and "long-time term orientation". On each dimension, various cooperation mechanisms are analysed and considered. The result is seven broad propositions, which propose suggestions on how to foster cooperation in CHC and its comparative cultures in culturally appropriate ways. These propositions are as follows:

P1: Cooperation in a small power distance culture is fostered to the extent that there is a *shared leadership* among group members, whereas cooperation in Asian-CHC is fostered to the extent that there is *formal leadership*.

P2: Cooperation in a small power distance culture is fostered to the extent that leaders are more *task-oriented*, whereas cooperation in Asian-CHC is fostered to the extent that leaders are more *people-oriented*.

P3: Cooperation in an individualistic culture is fostered to the extent that there is *goal interdependence*, whereas cooperation in Asian-CHC is fostered to the extent that there is *goal-sharing* among group members.

P4: Cooperation in an individualistic culture is fostered to the extent that the new group identity *enhances personal identity*, whereas cooperation in Asian-CHC is fostered to the extent that the new group identity *complements existing group identity*.

P5: Cooperation in an individualistic culture is fostered to the extent that there is *cognition-based trust*, whereas cooperation in Asian-CHC is fostered to the extent that there is *affect-based trust* within the group.

P6: Cooperation in an individualistic culture is fostered to the extent that *equity-based reward* allocation is employed in both short and long-term work relations, whereas cooperation in Asian-CHC

is fostered to the extent that *equality-based reward* allocation is employed, especially in long-term work relations.

P7: Cooperation in an individualistic culture is fostered to the extent that both within-group face and between-group face should be kept *flexible*, whereas cooperation in Asian-CHC is fostered to the extent that *within-group face is well secured* and *between-group face can be mildly confronted*.

3 Culture and Cooperative Learning

Cooperative Learning is an application of social psychological studies on cooperation. While in social psychology, culture fixates on the theme that collectivists are more cooperative than individualists, in educational context, cultures also tend to circulate around the theme that students from collectivistic cultures have preference for CL and learners from individualistic cultures have preference for individual learning (e.g. Chan and Watkins, 1994; Biggs, 1990; Park, 2002...). On the basis of these studies, CL is strongly suggested for students from collectivistic cultures as it is assumed to be a learning method that is culturally appropriate.

However, just like in the case of cooperation, our understanding of CL needs to go deeper than just a somewhat stereotypic assumption and even naive belief that group work is more positively associated with students from collectivistic cultures than those from individualistic cultures. We know that through the mediation of different cooperation mechanisms, culture is posited to have a straightforward and rather deterministic effect on CL. A given mechanism can be perceived to be effective differently in different cultures. In this way, a certain CL structure might be effective for Western learners but not for Eastern learners and vice versa. To the extent that cultural appropriateness is one important condition for an optimal level of CL, it is therefore required that every single aspect of each cooperation mechanism needs to be examined.

As presented in the previous section, Phuong-Mai, Terlouw and Pilot (in press) argue that differences in motive patterns of five cultural dimensions provide bases for predicting the effectiveness of various mechanisms. The authors construct a series of propositions about the moderating effects of culturally shaped values and motives on each type of cooperation mechanism. Directly based on these broad cultural contingency perspectives, we derive a series of hypotheses which predict how CL can be best fostered in CHC educational context specifically. These hypotheses are as follow:

H1: Asian-CHC students will prefer a leader in CL.

H2: Asian-CHC students will prefer leaders who are capable of maintaining a positive interpersonal relationship within the group.

H3: Cooperation among Asian-CHC students will increase to the extent that there is one sole goal, which is group-sharing goal as an end.

H4: Cooperation among Asian-CHC students will be increased to the extent that there are other social in-groups involved in CL such as families.

H5: Cooperation among Asian-CHC students will increase to the extent that students are grouped on the basis of affect-based trust (friendship).

H6: Asian-CHC students will prefer the equality norm and group reward system.

H7: Cooperation among Asian-CHC students will increase to the extent that there is within-group face confirmation by means of built-in conflict and blind individual accountability.

H8: Cooperation among Asian-CHC students will increase to the extent that there is within-group face confirmation by means of third-party help in conflict resolution.

H9: Cooperation among Asian-CHC students will increase to the extent that their between-group face is not secured by means of between-group competition and inter-group assessment.

4 Method

Research design

To reveal the difference between CL as it is based on Western educational theories and practice and CL as we argue to be more culturally appropriate to Asian-CHC schooling, we opted for the reversed treatment equivalent group design with post-test only. One normal-sized class (around 50 students) is divided into two groups of control and experiment by randomization. These two groups were then given CL lessons exactly in the same volume and content but varied in how cooperation mechanisms are mediated. In this design, the experiment group was given CL lessons applied principles, which are argued to be culturally appropriate to Asian-CHC learners. Participants in this group are referred to as experiment-students. The control group was given exactly the same volume and content of lessons, applied CL principles derived from Western CL theories and practice. Participants in this group are referred to as control-students.

From 2005 to 2007, we conducted four rounds of experiments, which in this paper are referred as experiment No1, No2, No3 and No4. We argue that this repetition helps strengthen the reliability of the findings and the power of generalization. Each experiment consists of two main components. The first component lasted approximately eight hours spreading through various learning sections. In total, students were expected to complete three CL task clusters, covering different disciplines such as social science (English as a second language, literature), natural science (Geometry, Applied physics) and Combination cluster (simulation, problem-based discussion, debate). The second component was a CL project run mostly outside class hour during 2,5 week. In this project, each group was required to produce a newspaper with a minimum number of interviews, reportages and news. The groups themselves decided the theme.

Participants

All experiments were conducted in two Hanoi upper secondary schools in Viet Nam. Both are up to national standard according to the annual evaluation 2005 conducted by the Special Board of Inspectors, Ministry of Education and Training. Four classes participated the project with 181 students ranging from 16 to 18 years. All four classes were evaluated as "rather good" according to school grading system. Students received a small amount of money after the experiment but in all four classes this was collectively transferred to the class fund for future class activities.

All four teachers involved were also chief teachers of their class. This means that these teachers are officially in charge of the class had the best access to student's data and first-hand knowledge of each student as individuals.

Data gathering

In order to reach optimal triangulation, we used data from four different sources: observation, questionnaire, interview, and learning outcomes. The researcher with the support of the teacher in charge conducted observation. Since school authority does not allow video recording, we used manual recording at time intervals. Every 3-5 minutes, one group was observed closely and all related conversation or non-verbal expression was noted down on the observation schema.

Questionnaire was a Likert-scale design which asked students to circle their answer from totally disagree (1) to totally agree (5). The items were revised and adjusted across the three rounds of experiments; each scale measures one construct, which is in accordance with proposed hypotheses. Due to an administrative problem, the questionnaire could not be distributed in the first experiment. Table 1 shows the reliability of the questionnaire across three rounds of experiments. For

convenience, in this paper, the mean scores of experimental or control groups are demonstrated as *Mex* and *Mcon*, respectively.

Table 1: Reliability of the questionnaire across Experiment round No 2, 3, and 4. (*) Reverse item.

Scale	Round of Experiments (Ex)			Example of items
	Ex2	Ex3	Ex4	
Leadership preference	.78	.77	.88	<i>When you learn in-group there must be a leader.</i>
Leadership traits		.53	.55	<i>.77 The main job of the leader is to connect members together.</i>
Goal	.48	.53	.55	<i>Your major motivation is high grade for yourself (*).</i>
Family involvement	.25	.57	.61	<i>You learnt better because your family knows about this lesson.</i>
Group forming	.80	.83	.86	<i>You are happy with your current group composition.</i>
Reward allocation	.61	.66	.71	<i>You think that group-sharing grade is good.</i>
Within-group face	.78	.84	.80	<i>You've spoken out all your opinions during group discussion.</i>
Between-group face	.88	.86	.77	<i>You wanted your group to win over other groups.</i>
Overall effort	.82	.81	.85	<i>You've tried your best during group discussions.</i>

Interviews were conducted within one day after the completion of each experiment by the researcher with 60 students, chosen by random with one half from experimental groups and another half from control groups. Each interview lasted from 15 minutes (experiment 1 and 2) to 30 minutes (experiment 3 and 4). The last data source is learning outcomes, which were taken directly from students' logbooks and teachers' grading record. In this paper, we first present observational data, followed by data from questionnaire and interviews. We then triangulate these data sources together, give interpretation and draw the conclusion.

Data analysis

For each scale of the questionnaire, we computed a composite variable, which represents each student's mean of all the scale items. We then used independent samples t-test, which is the most commonly used method to evaluate the differences in means between two groups on each scale. Theoretically, the t-test can be used even if the sample sizes are very small. In our experiment, each group of control and experiment consists from 20 to 26 students, which is a condition where the use of t-test is optimal. We assumed that the difference is not in the predicted direction and always reported the standard, two-tailed t-test probability.

5 Result

Leadership preference and Leadership traits

H1: Asian-CHC students will prefer a leader in CL.

H2: Asian-CHC students will prefer leaders who are capable of maintaining a positive interpersonal relationship within the group.

Treatment: In the experimental groups, students were asked to choose a single leader based on their own criteria. In the control groups, each member was assigned a role to fulfil, as described in Johnson & Johnson (1994), Kagan (1993), e.g. recorder/checker, cheerleader, taskmaster, and quiet captain.

We observed that in the experimental group, none of the leaders raised to their position by self-nomination. All of them were directly or indirectly referred by their group members, not surprisingly since every Asian-CHC learner knows that modesty is one of the most important virtues. High achievers, if they desire to become leaders, expressed their willing by smiling expectantly at their mates. In all cases, they kept themselves quiet. Choosing a leader can be directly carried out by frankly addressing someone in the group and the others went accord. Indirectly, the lead-

ers were chosen not by a name being mentioned but through a series of sign language and subtle conversation. Some group members looked at this potential leader and smiled, tacitly implied an expectation. The student they referred to hesitated for a split second and smiled back with a soft and rather timid "OK". And with this only one word spoken within the group, a leader was chosen.

With regards to informal CL task (short task performed in class), data from the questionnaire (Appendix 1) shows that throughout three experiments, experiment-students consistently and strongly supported the essential need and benefit of group leader ($M_{ex}=4.6/4.4/4.5$, for experiment No 2, 3, 4 respectively) whilst control-students stayed rather neutral ($M_{con}=3.1/3.4/3.9$). While 23 out of 30 experiment-students summoned for interviews completely advocated for the importance of leadership in group learning, only 7 out of 30 control-students reflected similar way of thinking. However, control-students agreed that there was someone in the group who more or less took the leading role. Surprisingly, on the one hand they didn't deny this leading role, but on the other hand refused to name it *leadership* but insisted on calling those group mates "active learners" instead of "group leaders". According to them, two reasons why groups did not have leaders are: (i) The teacher did not instruct them to appoint a leader, so there was of course no leader; (ii) Tasks are quite clear and short so the time pressure didn't allow loafing or any role confusion that required leader's intervention.

However, with regards to formal CL (projects that run outside class over a period of 2.5 week), students reflected a rather convergent point of views. Both experiment- and control students recognized the importance of leadership, both strongly agreed on the requirements for leadership as to create group solidarity, interconnect group members and provide encouragement, which are all non-cognition and all interpersonal management related ($M_{ex}=4.3$; $M_{con}=4.0$; no significant difference, $p>.05$).

Discussion: We take the indication from this data and interpret that in control groups, as true follower of the instruction as Asian students might be, the presence of a formal leader was supposed to be unnecessary since the teacher did not mention it, even when high achievers emerged to leading role, they were considered active group mates while actually their correct label should be *informal leader*. However, in longer CL tasks, we see that professionalism in this case is not the most essential criteria since the strong interpersonal skill would be more likely to trigger the group cohesion and dedication. Being good in the subject is not enough to be a leader. This echoes the same voice with Gunning (1997), Hui & Lin (1996), Lee (2001) who argued that Western leadership is likely to be the management of work whilst Asian-CHC leadership is likely to be the management of people. On the basis of this analysis, H1 and H2 are confirmed.

Goal

H3: Cooperation among Asian-CHC students will be increased to the extent that there is one sole goal, which is group-sharing goal as an end.

Treatment: In the experimental groups, each group was given a task and group has one goal to complete the task without specific individual division (group goal is an end). In the control groups, students had to get the group task done in order to complete individual's learning goal (group goal is a means).

Since the scale on this aspect is lower than .70 and thus does not meet the requirement of reliability, it is down to observational and interview data to examine the effect of goal on students. We observed that there was a powerful flow of talking and arguing in each group, almost hurry for each individual to catch up and get hold of the new knowledge. The teachers were amazed at the sight of the most timid girl in the class getting on a fervent discussion with her group mates, and the best student, also the most arrogant student in class, patiently explaining an answer to others. The teacher later admitted that they had been quite lucky by being remote from other blocks, otherwise this '*...voice of knowledge would had been mistaken as class turbulence and losing control*'. The difference between two groups concerning cognitive and affective sharing on task is

not only in quantity but also in the content of the talk. Analysing observational data, we found that there was a difference in cognitive path between two group members, namely between a low achiever (LA) and a high achiever (HA). In the experimental groups, a question may be raised from any one, a low achiever who does not quite understand the lesson or a high achiever who wants to make sure that the group goal would be achieved. In the control groups, a question was mainly raised from the low achiever (numbered 4 in all groups), sometimes from the averages (numbered 2 and 3) and rarely from the high achiever (numbered 1).

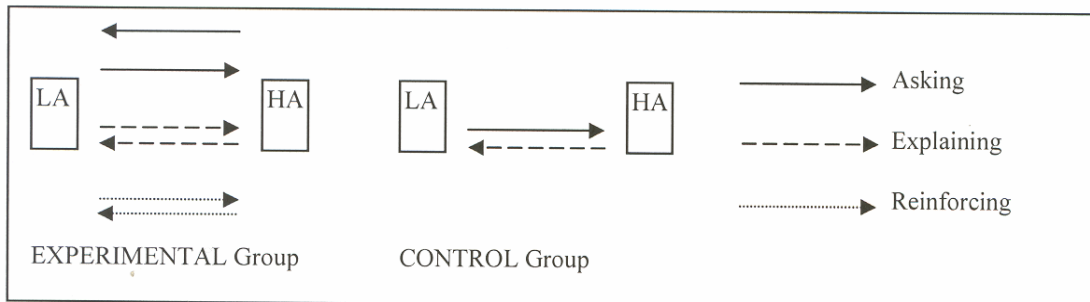


Figure 1: Cognitive learning path of students in the experimental and control groups.

Interview data shows that experiment-students strongly related their group goal to between-group competition. They indicated the need to protect and honour group-face as one of the main motives to teach and to learn (*We wanted to make sure that when the teacher asks one of us to answer in front of the class, this person would give a good answer and otherwise we would lose face to other groups*). Control-students also mentioned this social face as a push factor to get the group work done. For many of them, individual goal was temporarily abandoned and group goal had become an end.

Discussion: The indication from interview data suggests that there might be an effect of interaction of treatment. In the control group, between-group competition has become the main motivation for learning and therefore the group goal has emerged as the ultimate goal for all group members. The lower interaction rate among control-students can therefore be explained by either the effect of goal structure or social face, or even by other effects such as group forming or leadership. Similarly, the high interaction rate among experiment-students was probably strengthened by a characteristic of another treatment such as group forming or leadership. On this ground, H3 is rejected.

Family involvement

H4: Cooperation among Asian-CHC students will be increased to the extent that there are other social in-groups involved in CL such as families.

Treatment: In the experimental groups, a family letter signed by the teacher-in-charge was sent home before the experiment. In this letter, the experiment was described in detail. Parents were asked to assist by sharing past experiences with their children, encouraging them to do their best, giving support on group projects and keeping tracks on grading. In the control groups, students did not receive this treatment.

The main assumption under this hypothesis is that collectivist is likely to be influenced by social acceptance of a certain in-group. Having the family involved not only put students under the pressure of gaining acceptance from parents but also means the involvement of another in-group's identity (family), which would complement the existing in-group's identity, i.e. the cooperative learning group at school. Through interviews- the only reliable data source in this hypothesis- 85% of students in our interviews recognized the influence that their family had exerted on them (*It was a pressure, my parents know about it so they would surely ask how did it go; You don't want to disappoint your family so you try to win, so you can tell them that you did good job; I*

know my mother would go to the neighbour and tell them about that, means I'd better do my best...). This indicates that the influence of the family as an immediate in-group has actually extended to more remote in-group, i.e. the neighbourhood where a student lives.

However, this source of motivation students received was more general than specific. The typical remark that students received from parents is: *"That's good, you need to try your best!"* None of the parents provided their children with concrete advices or experiences from their schooling days. One student told us: *"Parents don't care about what specifically we are learning at school. All they ever want to know is good grade and good comment from the teacher"*.

Discussion: In fact, there is a paradox of Vietnamese parent involvement. According to the scale of Marsh and Willis (2003:212), Vietnamese parents score not higher than the lowest rank on the parents involvement ladder, i.e. "receiving reports about their children progress". However, from the cultural point of view, this scale of parent involvement is based on a Western point of view of how parents should be involved in schooling. Using this scale, the passive role of Vietnamese parents is rather difficult to explain since it directly confronts with their active role in moral support, long-term commitment and generous investment in education for their children. A great number of Vietnamese parents are ready to put their house and all properties in mortgage to support their child to continue to study. Asian-CHC parents are famous for their unusual high expectation, which exerts strong pressure on children attitude towards learning (Park, 2005; Pong-Wing-Yan & Chow, 2002).

A way to tackle this paradox is to focus on how a teacher is seen in Asia-CHC as an ultimate source of knowledge. For many centuries, parents have been considering themselves as docile listeners when it comes to the ivory tower of knowledge. In this way, schools have become a sacrosanct realm of teachers where parents have little to do with, except encouraging their children to try harder and investing moral and financial support for this long-term commitment. Teachers don't expect parents to involve in learning activities and parents don't see themselves as qualified enough to interfere in teacher's business.

In short, the influence that another social in-group, in this case the family, exerts on students was identical but not directly related to positive effect on CL. By connecting two in-groups (family and CL group), we expected to observe enhancement that this connection may trigger. As we predict, enhancement did happen, but it was directed to learning in general rather than learning in a group in particular. The involvement of other social in-groups therefore may have positive influence in student's learning, but not specifically in students' group work. On this ground, H4 is rejected.

Group forming

H5: Cooperation among Asian-CHC students will be increased to the extent that students are grouped on the basis of affect-based trust (friendship).

Treatment: In the experimental groups, students were allowed to form groups on themselves. There was 47,8% of the groups consisted of all-high achiever or all-low achiever. In the control groups, students were assigned according to academic achievement based on GPA and the teacher's personal consideration to make sure that every group has equal learning capacity.

We observed that experiment-students underwent a transfer from existing friendship identity to learning group identity. They did so firstly by linking existing friendship identity with new learning identity in the new context. For instance, a group of students who were the top girls coming from rather well to do families had their motto as "elite in how you live". In the new situation, we observed that they have transferred their motto to "elite in how you live, elite in how you learn". During the experiment, they kept telling each other: *"We have to remain the "elite" girls of the class with "elite" grading."* Secondly, experiment-students involved heartily in confirming their group identity throughout the lessons: *"We have always been that way; Long live the power of Cow & Fly; Our groupie will try our best as always."*

Data from questionnaire (Appendix 1) shows that experiment-student expressed more satisfaction and positive opinion over their groups ($M_{ex}=4.7/4.1/4.7$) than control-students ($M_{con}=3.9/3.5/3.7$

for experiment No 2, 3, 4 respectively). This difference is statistically significant and consistent throughout all three rounds of experiments ($p < .001$). More specifically, experiment-students were more satisfied with their group composition, they strongly wanted to be positioned in the same group should group learning happens again. They were also satisfied with their group learning ability despite the fact that affect-based group forming created 50% of all-high achievers and all-low achiever groups. By contrast, control-students showed significantly lower satisfaction when they judged their group learning ability even though cognition-based group forming reasonably made sure that all groups are equal in cognitive level.

Most students interviewed, regardless of experiment- or control-students, agreed that they preferred working in groups with close friends. According to them, the bond among close friends played an important role to bind them together, to motivate and even force them to fight for the sake of the group, in the face of the group in the competition with others. Some students mentioned that high achievers in the group could be harmful rather than advantageous since this one will dominate the whole working process and downplay others. Others stated that when working among people they know well, the fear of face damaging would be minimized and that the job would be done better. Several students mentioned that each group should try to stand on their own feet, work harder with more and more effort instead of blaming that they don't have a high achiever in their group.

Discussion: We interpret from the data that in the affect-based group forming, new (learning) identity can be established upon a solid foundation of existing friendship. This friendship identity came back again and again during the formation of the new identity, played as a guide to direct and motivate groups to act according to an afore-agreed mentality. Since affect-based trust is associated with this identity, it exerted significant influence in how students perceived effective group learning. In this vain, a top learner in the group does not necessarily guarantee group success while some average or even an all-low achiever group but consists of well-connected friends would trigger a much more powerful sense of cognitive confidence and probably lead to better cognitive performance. Affect-based trust among Asian, as Chen et al., (1998) argue, is based on interpersonal relation among group members which is not necessarily related to levels of competence. In the control groups, students also had a shared identity, not as close friends but as classmates. However, since the learning situation only provided in-groups (all students are class mates to each other) and no out-group (there is no other class involved), this classmate identity did not play as a ground to enhance and foster the new identity (group-mate) that yet needed to develop. In fact, the main source of group identity building in the control groups was the latent between-group competition. On the basis of this triangulation, H5 is confirmed.

Reward allocation

H6: Asian-CHC students will prefer the equality norm and group reward system.

Treatment: In this study, we employed three types of rewards: grade, teacher's approval and verbal acknowledgement, and tangible prize. In the experimental group, a shared-grade system was applied. The teacher was instructed to give extra comment/compliments to the group as a whole instead of individuals. Groups decide themselves how to distribute tangible rewards. In the control group, a shared-grade system was applied. The teacher was instructed to give compliments to good performers. Tangibles rewards were meant to be given to the best student as supplement for excellent individual contribution.

We observed that in both experimental and control settings tangible rewards were shared, not only within group but also between groups. This means in the control groups, not the best students got the reward but the whole group, and in the experimental groups, not only the rewards were shared within the winning group but also with the competitors. Observational data shows that there is no significant difference between experimental and control groups with regard to both within- and between-group sharing ($p > .05$). However, paired sample test shows that students tended to share

rewards firstly with their group mates and sharing with other groups came secondly ($M=4.8/3.2$ for within- and between sharing, respectively, $t=3.8$, $df=7$, $p<.05$).

As demonstrated in Appendix 1, questionnaire data shows that regardless of control or experimental setting, with no significant difference, students show strong preference for equality style of reward allocation. Interview data shows that students seem to make clear distinction among verbal acknowledgement, grade and tangible reward. First of all, several interviewees experienced great feeling of pride when being recognized by teacher in front of their mates and they admitted that this public acknowledgement "...was sweeter than the grade 10". However, students suggested that teachers' criticism should not address to individuals but the whole group: "*If only one person does not work well, it means the whole group does not cooperate well enough! The whole group should be punished instead of only one!*" Second of all, all students agreed that a group shared-grade was appropriate, none of the interviewees expressed concern over the unfairness: "*When you work together, it is very natural that you are graded together!*" Thirdly, tangible reward was agreed to be used to motivate the best achievers in the group but this reward is *expected* to be equally shared among group member afterward. In this way, the best achiever benefits *symbolically* from the title "best student" but materially, he/she is supposed to divide his/her reward equally among all group fellows. One student said in the interview: "*...The one who gets rewards would voluntarily share with the other anyway, and he/she is also expected to do so!*"

Discussion: Students in our experiments strongly employed the norm of equality in various patterns of reward allocations. According to them, tangible reward is definitely group-shared processions and grade is fair to be shared by the whole group. Besides, teacher's verbal acknowledgement tends to be highly appreciated and is considered a special reward. Finally, low achievers are suggested not to be negatively singled out whereas high achievers may be motivated by some extra complements. On the basis of this analysis, H6 is confirmed.

Within-group Face

H7: Cooperation among Asian-CHC students will be increased to the extent that there is within-group face confirmation by means of built-in conflict and blind individual accountability.

In the experimental group, to secure *individual within-group face*, two techniques of face-confirmation were applied to minimize chance of face loss: (i) Using built-in conflict i.e. discussions triggered based on intentional different opinions; and (ii) Blinding individual accountability i.e. individual contribution is not barely exposed to others. In the control group, students were put in a situation where *individual within-group face* is not always secured. Students for example had to expose their individual contribution that indicated how well or bad they had contributed to the group by using a different coloured-chip, a technique taken from Kagan (1993). 'Round Table' (Johnson & Johnson, 1997) was applied in which each student in turn had to show their contribution.

We observed that students tended to mind their words less in the experimental setting. They engaged very heartily in discussion and feared not to violate others' faces. On the one hand, students took it serious on giving their own opinions. On the other hand, they did not take the difference or even aggressive behaviours personal, they even laughed at it or encouraged others to be more radical: "*Come on! Is that all you can think of? Be original!*" Compared to the experimental group, the enthusiast atmosphere was missing in the control group where Round table was applied. Firstly, exposed individual contribution created a face-threatening situation. For example, with different coloured-chip used while discussing, it was obvious to all who contributed the most and least. Because of this transparent individual accountability, some low achievers hesitated to show their work whilst some high achievers were captured teasing others. Secondly, the sensitive topic being discussed without face confirmation also created another threatening of face violation and this exerted strong influence in the level of productivity. Some students hesitated to write down an argument, others wrestled with the decision or confronted with negative consequences: "*May be we shouldn't take this in!*" Observation data shows that throughout four experiments, the number of

students raising hands for public expression of opinions in the control group is significantly lower than that of the experimental group ($M_{ex}=16,0$; $M_{con}=6,5$; $t=3,1$, $df=6$, $p<.05$).

Questionnaire data in Appendix 1 shows that on this aspect of safe learning environment, experiment-students significantly perceived it more positive than that from control-students ($M_{ex}=3,9/4,7$ and $M_{con}=3,4/3,7$, $p<.001$ and $p<.05$, for experiment No3 and 4 respectively). Students in the setting with individual within-group face confirmed were more likely to feel comfortable expressing their ideas and had little or no concern giving different ideas than students in control groups where individual face within group was not secured.

Discussion: The main difference between the two settings is that individual face is secured in one and not in the other. For experiment-students, their individual face was safe since there were not threats and their individual contribution was barely exposed to others. They measured their achievement against themselves (*How much have I developed?*) and the whole group's achievement (*What can I do more to make group stronger?*). Secondly, the debates they were engaged in might take the form of a conflict where everybody had different ideas, but it was a conflict caused by nobody (built-in conflict) so nobody was to be blamed, in another word, a good-will conflict. For control-students, low achievers experienced a hard time coping with their shame when their poor contribution was to be showed. They were constantly in the risk of losing face. This individual accountability also made them measures themselves with others (*I am the last of the group again*). Ironically, this is likely to trigger a competitive mode, especially among high achievers while at the same time corners low achievers and turns them to a desperate case. Secondly, the sensitive nature of the topic put each individual in a position of guard. Facing the danger of face loss, students were not completely freed from all potential concerns that may prevent them from frankly and uninhibitedly expressing their ideas without hindrance. Individual face was not confirmed and therefore became vulnerable. Students minded their word in order not to violate the face of others and not to put their own face in danger. Consequently, the flow of ideas had to wrestle with many mental obstructions to make its way finally verbalized. To conclude, face confirmation does exert positive influence on Asian-CHC students in CL and on this basis of this analysis, H7 is confirmed.

Conflict resolution

H8: Cooperation among Asian-CHC students will be increased to the extent that there is within-group face confirmation by means of third-party help in conflict resolution.

In the experimental groups, students were given third-party help as one among available choices when discussing various case studies. The suggestions for mediators are teachers, group leaders, class prefect and parents. Other choices are 12 suggestions featuring characteristics of four main conflict resolution styles: dominating, avoiding, obliging and compromising (Ting-Toomey et al., 2000). In the control groups, suggestion list did not include third-party help.

Result taken directly from students' logbooks shows that in the experimental setting, 72,7% of groups opted the choice of using a mediator. 9,1% of the group wanted to solve problems in dominating manner. 18,2% of groups decided not to take any suggestions from the list but chose a combination of solutions. These groups wrote on the margin of their logbooks that an integration of all possible solutions would be best for the problem. In the control setting, 9,1% of groups chose to solve problem in dominating style, 54,5% wanted to compromise, 27,3% decided to take avoiding style and 9,1% settled down with obliging solution. However, 76,3% of groups added that they would prefer to go for a combination of solutions. One of the solutions they suggested and would like to use is third-party help, specifically from the group leader or class prefect. Statistic shows that experiment-students are significantly more satisfied with the solutions and decisions they made than control-students ($M_{ex}= 4,3$; $M_{con}=2,4$; $t=4,1$; $df=20$; $p<.001$).

Discussion: Our finding is consistent with prior research on conflict resolution that Asian tend to show more concern about the other's conflict interest and other-face and hence they tend to use more indirect styles such as avoiding, obliging and integrating style (Oetzel & Ting-Toomey,

2003). The finding also confirms Ting-Toomey's argument that mediation is widely used by the Asian (Ting-Toomey et al., 2000) since this conflict resolution prevents face loss between deputing parties. The role of mediators is to minimize direct face confrontation and face conflict escalation. The two conflicting parties, in order to give face to this high status mediator will be more willing to come to a compromise. In our study, group leader and class prefect are referred as preferable mediators. Interesting enough, this indication supports H1 of using leadership in CL for Asian learners. On the basis of this consideration, H8 is confirmed.

Between-group face

H9: Cooperation among Asian-CHC students will increase to the extent that their between-group face is not secured by means of between-group competition and inter-group assessment.

In the experimental groups, *between-group face* was mildly threatened by a between-group competition setting in which each group had to strive for a single prize and a group name honouring. After each task, groups were also asked to proceed to inter-group assessment. This was meant to expose group accountability, to make one group's achievement transparent to others, and to have groups keep track of one another. In the control groups, a between-group competition settings as well as inter-group assessment were not applied. Group grades were not publically exhibited.

The setting of between-group competition created two different ambiances. In the experimental group, competitive spirit filled the air. There was always someone playing the role of a cheerleader or a motivator, there was always something to be said and done in order to put spurs to the group process. Some students even (humorously) employed inappropriate language by using words such as: "revenge", "our mortal enemy" and "friends or foe". The teacher had to correct them and suggested the use of "pay-off" and "our competitor" instead. She also stressed that the class was not a battle but a "healthy competition" which required fair play and learning from mistake, just like the Olympics. With inter-group assessment after each task, group members involved in another setting of group identity confrontation. Since the competitor gave the grade, in all possible attempts to secure fairness, each group quickly felt the need to scrutinize where it went wrong and thus how it went wrong and consequently, how they should have done and what they have learnt from all the mistakes.

In the control groups, the setting of "no between-group competition" did not really give opportunity for such an overt atmosphere of effervescence. The enthusiast atmospheres was missing since students did not verbally or physically show their competitive spirit during the task execution. However, data from questionnaires in Appendix 1 shows that the difference between two settings though significant is minor. In both settings, groups all competed with each other, longed to know the achievement of other groups in order to compare and self-evaluate. They both yearned for the winning and this very desire motivated them to put on more effort ($M_{ex}=4.9/4.6/4.7$ and $M_{con}=4.3/4.0/3.8$ across 3 experiments respectively; $p<.05$). Interview data also points to the same direction. In control setting, students though not expressed it but latently competed with other groups. In both control and experimental settings, students recognized the benefit of competition and this was seen firstly as a means to strengthen group cohesion and secondly as a strong motivation to learn.

Discussion: With experiment-students, we found that they attributed inter-group competition strongly to the group cohesion. They tend to see this learning mode as a way to create stronger attachment among classmates. Interestingly, CL attracted educators in the West because it was seen as a means to have higher achievement. In our study, students considered CL largely as a means to promote group solidarity. At this point, it is important to mention that the educational system in Vietnam, as well as in other CHC countries, creates a strong competitive climate among students (Park, 2002; Pong-Wing-Yan & Chow, 2002; Young-Ihm-Kwon, 2002). Group work hardly exists. The best student is the moral. However, we have seen that in both control and experimental settings, groups of students strongly competed with each other, even without instruction to do so. We argue that the group setting has played as an environment in which *be-*

tween-group face is triggered and students have automatically shifted from individual competitive mode to between-group competitive mode. The process of changing from fighting for each individual's own sake to fighting for a cohesive in-group happened voluntarily, spontaneously and totally unasked. This process clearly illustrates the significant impact of *between-group face* that lends support to our hypothesis.

With respect to the *between-group face*, research of intergroup interaction has consistently proved that intergroup competition is likely to produce greater level of intragroup cooperation, work effectiveness, decrease free riding and outperform many other incentive mechanisms in sustaining productivity over time (Bornstein, Gneezy, & Nagel, 2002; Finnegan, 1999; Gunnthorsdottir & Rapoport, 2006; Nalbantian & Schotter, 1997). Our finding is consistent with these studies since it suggests that Asian-CHC students are likely to be more motivated to cooperate with each other if their *between-group face* is confronted or mildly threatened. We would add that when one group's accountability is exposed and transparently accessed by others, *between-group face* may also trigger the need to be protected and secured, and consequently will motivate cooperation.

On the basis of this consideration, H9 is confirmed.

Learning outcomes

Across all four experiments, in all three task clusters, groups projects and additional questionnaire, students from the experimental groups scored overall higher means than students from the control group with consistent significant difference in Task Cluster 3 (table 2). This indicates that the treatments are likely to have effect in communication-related CL tasks such as simulation, problem-based discussion and debates.

Table 2: Learning outcomes in 3 task clusters across 4 experiments (Ex) and group projects.

		Mean		SD	t-value	t-critical	df	p-value
		Experimental Group	Control Group					
Task Cluster 1	Ex1	7.3	5.3	1.2/1.6	2.4	2.2	10	<.05
	Ex2	8.5	6.3	1.6/1.6	2.2	2.2	10	<.05
	Ex3	70.0	75.8	5.4/9.1				.2
	Ex4	87.7	82.7	10.0/14.8				.2
Task Cluster 2	Ex1	7.1	6.5	1.4/1.3				.4
	Ex2	6.3	5.3	1.2/0.8				.1
	Ex3	27.0	25.8	10.1/4.4				.7
	Ex4	71.6	65.0	12.0/18.8				.2
Task Cluster 3	Ex1	32.8	20.1	2.4/5.0	5.4	4.5	10	<.001
	Ex2	29.8	15.6	10.2/2.5	3.2	2.5	5	<.05
	Ex3	25.5	18.5	3.3/4.7	2.9	2.2	10	<.05
	Ex4	44.8	23.8	9.0/3.9	4.6	2.4	8	<.01
Group Project	Ex2	9.4	8.8	0.4/0.6				.1
	Ex3	9.3	9.3	0.8/0.5				1.
	Ex4	9.8	8.0	0.4/1.4	2.4	2.3	8	<.05

Overall effort

Data from the questionnaire (Appendix 1) shows that for the intervention as a whole, across all three rounds of experiments, students from experimental groups consistently believed that they had made a sincere effort on all the lessons and group CL projects, while students from the control group were significantly less strong in this belief. This scale also shows that experiment-students were more certain that others in the group had also tried their best in all learning sections and they were more satisfied with the effort made by their group members than were control-students. In addition, experiment-students liked the intervention more than control-students ($M_{ex}=4.5/4.3/4.5$ and $M_{con}=3.9/3.5/3.9$ across 3 experiments, respectively; $p<.05$).

When we correlated all scales together, we found a high and consistent positive correlation between overall effort and group forming (table 3) across all three experiments ($r = .64/.53/.65$ for experiment 2, 3 and 4 respectively, $p < .01$).

Table 3 : Learning outcomes in 3 task clusters across 4 experiments (Ex) and group projects.

		Mean		SD	t-value	t-critical	df	p-value
		Experimental Group	Control Group					
Task Cluster 1	Ex1	7.3	5.3	1.2/1.6	2.4	2.2	10	<.05
	Ex2	8.5	6.3	1.6/1.6	2.2	2.2	10	<.05
	Ex3	70.0	75.8	5.4/9.1				.2
	Ex4	87.7	82.7	10.0/14.8				.2
Task Cluster 2	Ex1	7.1	6.5	1.4/1.3				.4
	Ex2	6.3	5.3	1.2/0.8				.1
	Ex3	27.0	25.8	10.1/4.4				.7
	Ex4	71.6	65.0	12.0/18.8				.2
Task Cluster 3	Ex1	32.8	20.1	2.4/5.0	5.4	4.5	10	<.001
	Ex2	29.8	15.6	10.2/2.5	3.2	2.5	5	<.05
	Ex3	25.5	18.5	3.3/4.7	2.9	2.2	10	<.05
	Ex4	44.8	23.8	9.0/3.9	4.6	2.4	8	<.01
Group Project	Ex2	9.4	8.8	0.4/0.6				.1
	Ex3	9.3	9.3	0.8/0.5				1.
	Ex4	9.8	8.0	0.4/1.4	2.4	2.3	8	<.05

This indicates that the level of effort exerted by students is likely to depend on how students perceive their group composition. The more satisfied students are with their group, the more effort they are willing to put on the learning. To an extent, this finding reconfirms H6 on affect-based trust group forming

6 Conclusion

From seven broad propositions that predict the influence of culture on cooperation through the mediation of various cooperation mechanisms, nine hypotheses were constructed. These hypotheses predict the influence of culture on CL among Asian-CHC learners through specific ways of instructional design. After four rounds of experiments, two hypotheses were rejected and seven hypotheses were supported by triangulation of data. Summaries of the findings are in order.

First of all, leadership proved to be a crucial element for cooperation among Asian-CHC learners with the main leadership trait as ability in maintaining a harmonious considerate relationship among group members. Second, not Western style of heterogeneous ability grouping but affect-based grouping proved to be beneficial for Asian-CHC learners. Third, equality rule prevails in various patterns of reward allocations among Asian-CHC learners. Tangible reward is considered group's shared possession and the whole group enjoys a shared-grade. Much concern is given to low achievers in a sense that these students should not be negatively singled out from the whole group. In addition, Asian-CHC learners highly appreciate approval and verbal acknowledgement from the teacher. Fourth, our finding suggested that individual face within a group needs to be secured in order to have a safe environment where learners are encouraged and motivated to express their thought without much worries for violating their face or that of their group members. The use of mediation in conflict resolution is also to confirm that face is not to be directly violated. By contrast, the collective face of each group is suggested to be left at a mild level of vulnerability. Our finding proved that this state of unprotection triggered the sense of groupness and the will to save group face and hence promote cooperation among group members to strive for that goal. However, the generalizability of our findings is, of course, limited in several ways. Though learning outcomes and the overall effort are significantly higher among experimental groups, caution is

order since the result is based on a combination of various treatments. Therefore the replication of one single treatment may not deliver similar outcomes. Next, one should be aware of different interpretations of cooperation mechanisms since this leads to different treatments. In this way, within-group face for example can be secured by different techniques others than built-in conflict and this may deliver different result. On the method side, we conducted experiments over a rather short period of time. The effect of treatments on longer time-term is therefore unknown. On the sample side, we recruited participant from only one Asian CHC country and these participants were largely restricted to upper-secondary school-age individuals. Thus strong confidence in the extent to which our findings are representative of findings produced from other scales, nations or age groups must await further research. Last but not least, though seven out of nine hypotheses were confirmed, caution is in order to avoid the stereotypes that such finding might engender. We suggest that the finding is useful only to the extent that it helps us to understand the multifaceted reality that we encounter.

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8 Appendix1

Result of independence t-test comparing means between experimental and control groups based on composite variables on each scale throughout 3 experiments (Ex 2,3,4). Only scales with reliability above .70 are included.

Scale		Mean		SD	t-value	t-critical	df	p-value
		Experimental Group	Control Group					
Leadership Preference	Ex2	4.6	3.1	0.4/1.0	6.4	3.6	27	<.001
	Ex3	4.4	3.4	0.7/1.1	3.3	2.7	34	<.01
	Ex4	4.5	3.9	0.7/0.9	2.3	2.0	35	<.05
Leadership traits	Ex4	4.3	4.0	0.4/0.7				.07
Group forming	Ex2	4.7	3.9	0.3/0.6	5.0	3.6	30	<.001
	Ex3	4.1	3.5	0.8/0.5	2.8	2.0	45	<.05
	Ex4	4.7	3.7	0.3/0.7	5.3	3.7	22	<.001
Reward Allocation	Ex4	4.4	4.0	0.5/0.5	2.6	2.7	35	<.01
Within-group Face	Ex3	3.9	3.4	0.8/0.7	2.4	2.0	45	<.05
	Ex4	4.7	3.7	0.3/0.7	5.3	3.7	22	<.001
Between-group Face	Ex2	4.9	4.3	0.2/1.0	2.3	2.0	22	<.05
	Ex3	4.6	4.0	0.6/0.9	2.2	2.0	45	<.05
	Ex4	4.7	3.8	0.3/0.9	3.8	3.7	21	<.001
Overall effort	Ex2	4.5	3.9	0.4/0.4	3.9	2.0	43	<.05
	Ex3	4.3	3.5	0.3/0.3	7.4	3.5	45	<.001
	Ex4	4.5	3.9	0.2/0.6	3.8	2.0	22	<.05