
A cross-cultural study on the usage of cooperative learning techniques in graduate level education in five different countries

Estudio transcultural sobre el uso de técnicas de aprendizaje cooperativo en estudiantes graduados en cinco países diferentes

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Abstract

The purpose of this study was to examine graduate students' experiences of cooperative learning in higher education in five ethnically, culturally and geographically different countries. This research was an attempt to understand how a culturally distinct instruction and academic environments influence their learning processes and implications for better instructional designs. Graduate students from Saudi Arabia, Brazil, Korea, Turkey and United States are surveyed and analysis of variance and factor analysis techniques are used in statistical analysis. Results revealed that culture did not have effect on learning preferences. Graduate students made conscious choices whether to be involved or not in cooperative learning in their educational environment.

Keywords: Cooperative learning, cross-cultural study, graduate students, educative preferences.

Resumen

El propósito de esta investigación fue examinar las experiencias del aprendizaje cooperativo en estudiantes graduados de nivel universitario en cinco países cultural, etnográfica y geográficamente diferentes. Este estudio fue realizado con el propósito de entender cómo influye la educación culturalmente distinta y los ambientes académicos en el proceso de aprendizaje y sus implicaciones en el desarrollo de mejores sistemas educativos. Se encuestaron estudiantes universitarios originarios de Arabia Saudita, Brasil, Corea, Turquía, Estados Unidos. A sus respuestas se les aplicó un análisis de varianza y técnicas de análisis factorial. Los resultados mostraron que la cultura no tuvo efecto alguno en las preferencias de aprendizaje. Los estudiantes universitarios realizaron una elección consciente con respecto a su participación o no en el aprendizaje cooperativo en sus ambientes educativos.

Palabras claves: Aprendizaje cooperativo, estudio transcultural, estudiantes universitarios, preferencias educativas.

Introduction

At the very basic level, we are encircled by our own culture that is “personal, familial, communal, institutional, societal, and global in its range and distribution” (Banks & Banks, 2001). Therefore, culture may be perceived as the recognition of human differences in a broad sense. It is obvious that culture affects every aspects of our life, including teaching and learning styles.

Social, cultural, economic, and political factors determine how we think and what kind of knowledge we value (Merriam & Caffarella, 1999). Educational institutions around the world have been greatly influenced by social and cultural surroundings. Therefore, the distinct approaches to educational investment and their underlying philosophical assumptions are as diverse as the countless variety of cultures and ethnic groups around the world. The world that surrounds us make the difference how we think and learn.

Some authors argued that learning styles are culturally based (Anderson, 1988; Bell, 1994). Anderson (1988) argued that people from different ethnic groups, with different histories and different approach to reality and different socialization practices differ concerning their learning styles. Therefore, it is important for learners and teachers to become aware of their own and from another's learning styles. Furthermore, Sternberg (1994) proposed that each individual has a different thinking style and it is important to consider people's thinking styles in designing learning programs; and teaching can be maximized if the teaching matches learners thinking styles.

Culture

The definition of culture is very complex. For the purpose of this study, *culture* is viewed as a conventional patterns of thought and behavior that includes values, beliefs, rules of conduct, political organization, economic activity, and especially communication styles, that have been developed over time by groups of people in order to survive in particular environments. Such patterns of thought and behavior are passed on from generation to generation so that the group shares common experiences that shape the way in which it understands the world. These shared values allow the group to maintain their

social existence and social values via education (Banks & Banks, 2001).

Thus, it can be conceptualized that culture is a system of knowledge that informs us how we should interact and communicate with others, as well as how to interpret others' behavior. In a very simplistic terms, culture is man-made, a result of the patterns applied by human beings as they attempt to perpetuate their survival in a given environment.

Hence, it seems that culture has impact on every aspects of our life. Since education is an important social institution undoubtedly it is not free from particular cultural influences. There is little in education that does not relate to culture (Armstrong, 2002). It is clear that culture implies difference and those differences are wide-ranging. As the social values differ within cultures and ethnic groups, there is strong evidence to suggest that culture has a tough impact on individuals learning. For that reason, it is attempted to understand the dynamic relationship between cultural orientation and cooperative learning techniques among graduate level students.

Cooperative learning

In human society progress is thought to depend on individuals and groups cooperating with each other. As an educational technique, cooperative learning provides a vehicle to attain a sense of community. Educational researchers and teachers have emphasized the importance of cooperation among learners for along time. It is widely acknowledged that cooperation constitutes the major element of human nature, family life, economic systems, and educational systems (Johnson & Johnson, 1989; Bean, 1992).

Therefore, cooperative learning has the potential to transform classrooms, schools, and ultimately society by creating communities of caring and support which, in turn, brings about higher levels of achievement in many domains (Millis, 1998).

Cooperative learning has been defined in varied ways and applied in a variety of forms (Wiederhold, 1991): it is defined by Slavin (1989) as a set of alternatives to traditional instructional systems, or more specific, as techniques in which students work in heterogeneous

groups of four to six members and earn recognition, rewards, and sometimes group approval based on the academic performance of the whole group. Cooperative learning is an effective teaching tool, structured, systematic instructional strategy in which students work together in small groups toward a common goal. It covers a broad territory, and there is wide variability in the amount of in-class or out-of-class time spent on work group. Cooperative learning activities typically involve classroom discussions, intermingled with short lectures that can last an entire class period or a whole semester.

Even if there are significant differences in theory, methodology, and application of this method, there are significant outcomes. Especially in the last decade, cooperative techniques have been extended and adapted to meet college classroom needs. Cooperative learning is employed by many educators and psychologists as a new instructional method because it has considerable effect on student's academic achievement, self-esteem, motivation, and attitude toward classes, as well as on retention and class socialization (Johnson & Johnson, 1985). Cooperative learning promotes social involvement and integration among students, which has been found to be strongly associated with improvement in student retention rates (Cooper, Cook, Smith, Mueck, & Cuseo, 1990), and encourage acceptance and inclusion, increases effective communication skills, personal responsibility in decision-making, and promotes an internal locus of control (Abruscato, 1994; Johnson & Johnson, 1987).

Significance of the study

Brookfield (1995) commented on two significant insights for practice that have been suggested by early research into cross-cultural adult learning. One perception claims that adult educators from the American, European cultures should examine some of their assumptions about 'natural' adult learning and adult teaching styles. Brookfield (1995) felt that more cross-cultural perspectives are necessary in order to invalidate the Eurocentric approach dominating in research and education as well as understanding the inter-cultural differences in industrialized societies. Brookfield (1995) cautioned adult education practitioners and researchers to be careful when teaching culturally diverse learners because differences emerges from class, culture, ethnicity, personality, cognitive style, learning

patterns, life experiences and gender among learner. He also cautioned to avoid an ethnocentric perspective that equates such learning as "a generic phenomenon" for all cultural and ethnic groups.

Most of the information available in the literature is qualitative and ethnographic in nature, and is still at the exploratory level. Therefore, the purpose of this study was to investigate cooperative learning techniques in culturally, ethnically, regionally and religiously different countries. Specially, this research is an attempt to understand how a culturally distinct instruction and academic environments influence the learning processes and implications for better instructional designs. In five different countries cooperative learning experiences were surveyed in graduate students; data was analyzed with the particular attention given to similarities and differences across the five graduate student groups that comes from very distinct cultural backgrounds.

Moreover, this research was a challenge to fill some gaps on how teaching and learning activities are implemented in other parts of the world. This will help educators to improve their understanding of the diverse culturally students in their classrooms. A potential benefit of this project could be the reassessment and restructuring of the traditional western way of instruction for graduate level education that has to provide accommodation to culturally different students. This information will also be useful as courses go online and students from around the world start working together.

The research questions, which were addressed in this study, are: a) Is cooperative learning universally accepted as a valid set of learning?, b) Is there some commonality for cooperative learning methods across cultures?, c) Are cooperative learning techniques used in different cultures?

Method

Participants

A 15-item cooperative learning usage survey was administered in Turkey, Brazil, Korea and United States. The requirements for the study was that subjects were currently studying in their home country and enrolled in graduate programs and understand enough English

to fill out the surveys. Another group of Saudi Arabian students, were added to the research to compare their results. However, those were attending to graduate from schools in the U.S. The total sample was divided evenly across the 375 participants. Each country had 75 students that constituted 20% of the total 375 populations.

Design and procedure

Demographic and academic information such as gender, ethnicity and study area and other information were asked to report on the cover page of the survey. The demographic characteristics of the participants are presented in Table 1.

Table 1
Demographic information for subjects Frequencies (#) and percentages (%)

	S.Arabian	Turkish	Brazilian	Korean	American	Total
Educational Level						
Master	32 45.7	33 45.2	59 83.1	45 60	42 58.3	211 58.4
Doctorate	38 54.3	40 54.8	12 16.9	30 40	30 41.7	150 41.6
Teaching Position						
Yes	4 5.3	21 28.8	14 18.7	22 29.3	30 40.5	91 24.5
No	71 94.7	52 71.2	61 81.3	53 70.7	44 59.5	281 75.5
Gender						
Male	75 100	33 44	46 61.3	38 50.7	32 42.7	224 59.7
Female	0 0	42 56	29 38.7	37 49.3	43 57.3	151 40.3
Race						
Caucasian	72 96	73 97.3	51 68	1 1.3	66 88	263 70.1
African American	1 1.3	0 0	2 2.7	0 0	3 4	6 1.6
Native American	0 0	0 0	0 0	0 0	5 6.8	5 1.3
Hispanic	0 0	0 0	0 0	0 0	0 0	0 0
Asian American	0 0	0 0	0 0	0 0	0 0	0 0
Yellow	0 0	0 0	0 0	71 94.7	0 0	71 18.9
Hispanic	0 0	0 0	18 24.	0 0	0 0	18 4.8
Brown	0 0	0 0	2 2.7	0 0	0 0	2 0.5
Other	1 1.3	1 1.3	0 0	3 4	5 6.7	10 2.6

The sample was obtained by using a snowball technique. This was accomplished by recruiting international students who also recruited other students upon returning to their home country. The only exception was the Saudi Arabian group that currently they were currently studying and living in the U.S. Data was collected during the spring semester and completed during the summer semester of the 2004 year.

Instruments

A fifteen item cooperative learning usage survey, based on extensive classical and contemporary theories of cooperative learning, was developed by the author as an attempt to quantify perceptions of cooperative learning. The instrument consisted of 15 questions with likert type responses varying from 0 to 5. From a previous study, the internal consistency Cronbach alpha was .86. Consistency was also examined for possible variation due

to cultural differences. For the confirmation reason the reliability measure was done again for each group and for whole group. The results are shown below Table 2.

Table 2
Alpha reliability coefficients for 14 items

Groups	Number of subjects	Alpha
1 Saudi Arabian	75	.7870
2 Turkish	75	.7959
3 Brazilian	75	.6940
4 Korean	75	.7102
5 American	75	.7592
Total Population	375	.7487

The Cronbach coefficient alpha for internal consistency for the general instrument measured at .75 when the five groups merged together (N=375). The results indicate that the instrument was relatively reliable across groups.

Data analysis

The data was analyzed using SPSS10.0 for Windows (SPSS INC. 2000). Basic descriptive and inferential statistics are reported according to the nature of that particular item and demographics (see Table 1 and 3). The base significance level for all analysis was set at .05.

First, data from each cultural group was merged together to form a “universal group” ($N= 375$) in order to run a factor analysis for unidimensionality. It was computed with principal component factor analysis with varimax rotation.

Exploratory factor analysis usually is considered a “theory generating” technique. This technique is used to determine how many factors are present and whether or not they are correlated (Stevens, 1996). For similar proposes, explanatory factor analysis (EFA) is usually the first step to see if all the items are correlated together and loads on a single factor. It was also attempted to determine and name factors in the survey. Therefore, principal component factor analysis was done for merged group to obtain a bigger population size to compute more “powerful” statistics.

Results

Means, percentages, and frequencies revealed that Turkish and American students were responded most

similarly (see Table 1). The results show that Turkish students scored the highest in the scale; this was followed by American students. The rest of the three groups, Saudi Arabian, Brazilian and Korean group scored almost equally. Table 3 presents the means and standard deviations by groups.

Table 3
Means, standard deviations, and reliability coefficients

Nationality	N	Mean	S.D.	Alfa
S. Arabian	75	57.25	6.83	.7870
Turkish	75	60.35	6.50	.7959
Brazilian	75	57.41	6.38	.6940
Korean	75	57.72	5.49	.7102
American	75	58.46	5.99	.7592
Total N	375	58.23	6.32	.7487

Components with Eigenvalues bigger than 1 were extracted and subjected to a varimax rotation. Those items loaded together and correlated to each other were clustered together. Then, each factor was named according to commonalities among items, and four main factor components were extracted: Motivation, Achievement, Technology and Experience. These four factors counted for 50.5 percent of variance. Table 4 explains this procedure in detail.

Table 4
Variance explained by factors and reliability scores for each factor

Factors	Initial Eigenvalues > 1			Rotation Sums of Squared Loadings			Items	Alfa
	Total	% of Variance	Cum. %	Total	% of Variance	Cum. %		
Motivation	3.711	26.5	26.5	2.594	18.5	18.5	8, 10, 11, 12, 13	.69
Achievement	1.227	8.7	35.2	2.029	14.4	33	2,4,5, 6,7,9	.65
Technology	1.096	7.8	43	1.377	9.8	42.8	14, 15	.43
Experienced	1.038	6.9	50.5	1.072	7.6	50.5	3	--

Cum: Cumulative variance

Furthermore, internal consistency was determined by computing Cronbach's coefficient alpha for each factor components. The Motivation and Achievement components were found to be relatively reliable (see table 4).

Upon obtaining the factor components, one-way ANOVAs were run to compare factor means across the groups. The results shows that groups are significantly different from each other on the Motivation,

Achievement and Technology factors. However, they did not differ from each other on the Experience factor component. This may be due to the fact that the item

-who consisted only in one specific item-, asked them for their experience and comfort level with this specific instructional technique.

Table 5
One-Way ANOVAs for subfactors

Subfactors	Sum of Squares	df	Mean Square	F	Significance
Motivation					
Between Groups	24.010	4	6.02		
Within Groups	349.89	370	.946	6.374	.000**
Total	374.00	374			
Achievement					
Between Groups	25.91	4	6.47		
Within Groups	348.08	370	.941	6.885	.000**
Total	374.00	374			
Technology					
Between Groups	16.80	4	4.200		
Within Groups	357.00	370	.965	4.351	.002**
Total	374.00	374			
Experience					
Between Groups	5.31	4	1.330		
Within Groups	368.68	370	.996	1.334	.257
Total	374.00	374			

** Significant at the .001 level
* Significant at the .05 level

Discussion

The results of this study provided some new information; for example that basic natures of cooperative tendencies are universal and each culture supports some degree of cooperation and collectivism. However, groups of the survey differed significantly on the motivation and achievement factor components. This suggests that there are multiple aspects of cooperative learning. Depending on the motivation of the individual or cultural group, they may or may not choose to involve cooperative actions. Based on the achievement findings, individuals may take decisions about their participation in cooperative learning by considering some of the benefits and losses. This also suggested that perceptions of collectivistic cultures are not significantly related to cooperative learning. In fact, the results revealed that cultures that are perceived more collectivistic, such as Korean and Saudi Arabian did not score higher on the scale. On the other hand, Americans, who are characterized as highly individualistic, scored the second highest level in the survey. One surprising result was that Turkish group scored over the rest four

groups. This can be due to the fact that Turkish culture is on a transition and has included both individualistic and collectivistic nature of cultural elements. Another reason can be that Turkish educational system is very much westernized than the others; also that Turkish faculty members were trained in American and European countries, so they apply their newly-learned instructional techniques in their home country. One other possible explanation of lack of meaningful differences among groups can be associated with the sampling method. The current data revealed some results that contradicted with previous literature. This findings indicates that collectivistic society do not always involve in cooperative actions, like Korean, Brazilian and Saudi Arabian that respectively scored very low. In contrast, American students scored relatively higher on the total score. This may be a function of the interpretation that American and Turkish students can find benefits from cooperative learning. Results were consistent with Armstrong's (2002) study that culture does not appear to make a significant difference in the ways that learners perceive of any learning strategy applications. His analysis reflects

the idea of the universality of learning strategies in a sense that learners made conscious decisions about their learning methods. It seems that individuals chose to use cooperative learning activities regardless of their cultural orientations. Turkish and American students seemed to show more cooperative attitudes than the rest of the three groups. However, this may be only limited to their learning environments.

Students' ability to adapt to particular instructional strategies and teaching methods is often related to their sense of belonging to the group (class) and the recognition they receive from instructors. Supporting this idea, Armstrong (2002) note that one aspect of student preference for the cooperative work is the basic human need to feel a part of something larger, to belong and to be part of it. Cooperative learning fulfill students need for acceptance by others and belong to a group also serve to diminish some of the social anxiety experienced by students in new learning environments in each year and each semesters. Following this idea, it can be speculated that Turkish and American students are more aware of their learning environments and classmates than learning resources. It seems that students are able to make a conscious and voluntary participation to certain learning activities if they pursue any benefits from them.

Similarly, for those students for whom a collectivistic orientation is a dominant part of their identity, exclusion from the group (classmates) is likely to be distressful. Therefore, for many students who grew up in traditional communities, the cooperative learning processes of group interaction provide learning environments in a traditional sense, which will offer both sense of belonging and independence.

Furthermore, any given culture is man-made and its effects may be mitigated, altered, and even transformed, especially when the effort is purposive and necessary. Within each learning environment there is a particular culture, a system of knowledge and procedure that informs learners how they should communicate and interact with others, how they should interpret others' behavior (Armstrong, 2002). Therefore, it is possible that instructors who are familiar with cooperative learning methods and the culture of their students can make necessary accommodations according to the needs of the each student.

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