

New curriculum design and teaching methods to enhance course performance and increase motivation of Saudi Arabian college students

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Abstract

This study investigated the effect of cooperative learning on the performance of female college students enrolled in “writing and research” courses at Prince Mohammad Bin Fahd University (Al Khobar, Saudi Arabia). Cooperative learning (CL) activities were employed in place of traditional lectures and group activities. Two populations were compared, one with the CL methodology and one with traditional methodology. The results were assessed by final exam scores, final course grades, the number of students passing, pre and post-tests and a self-report survey. We found that this sample of Arab college students performed at a higher level in the CL classes than in the traditional classes. Findings suggest that CL is an effective method for teaching Arab college students.

Introduction

Research on Arab Gulf college students learning in English speaking colleges and universities is lacking in the literature (United Nations Development Programme/Regional Bureau for Arab States (UNDP/RBAS), 2014). Research in this area is important globally because the Arab world consists of 22 different countries and comprises roughly five percent of the world’s population (World Bank, 2015). English is the number one language of instruction globally, and of particular importance in the Gulf region (Liton, 2012). Dearden (2014) conducted a study using data from 55 countries to investigate the phenomenon of English becoming the language of global instruction. The study found that English was a medium of instruction more commonly in private universities (90%) than in public universities (78.2%); in Saudi Arabia it was found that English was considered to be a sign of prestige and an opportunity for a better education. Furthermore, public opinion of English as a mode of instruction was positive and was considered a basic skill that all nationals should possess.

There are more students obtaining degrees through the medium of English than in any other language (Liton, 2012). As globalization in higher education grows, the Arab Gulf nations face having to meet the challenges of equipping their citizens for living in a global economy while maintaining Arab and Islamic values (Bubtana, 2007). There is a need for quality international instructors who are sensitive to the priorities of the region as well as providing excellent academic education.

Instruction in internationally based institutions of higher education require professors to facilitate learning in many different ways. Methods of instruction may need to be changed according to culture, language barriers or even according to the climate of the K-12 background of the cultural group (Alsamani, 2014; Altbach, 2007; Bodycott & Walker, 2000; Fallah, 2014; Quezada, 2004). One popular method of instruction is Cooperative Learning (CL. Cooperative Learning is generally defined as learning in small groups of no more than two or three. The learners work together on the same task, thus helping each other accomplish a goal.) It is assumed that courses taught in English are best taught by native English speakers; however the United States, a native English speaking country has the smallest

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percentage of faculty that want to practice their profession abroad (Finkelstein, Walker & Chen, 2013). For the purposes of this study, professors that work in countries outside their country of citizenship will be termed “global professors”.

Saudi Arabia is one of the Arab countries that offers a Westernized form of education. There are very few studies on Saudi Arabian students (Alghamdi & Gillies, 2013; Alsamani, 2014; Kahn, 2011; Liton, 2012). Although the Saudi government has invested substantial amounts of resources into education for the country, there is a crisis of academic underachievement in the country (Ezza, 2013; UNDP/RBAS, 2014).

To begin a process of addressing improvement of academic achievement in Saudi Arabia, the type of culture within the society must be considered. Saudi Arabia may be largely a collectivist society. According to the seminal work of Hofstede (1983), collective societies hold a much greater sense of obligation to others and less focus on oneself. This type of society is very common when there are family clans or tribes involved (Hofstede, 1983). Hofstede (1983) examined 50 countries; although Saudi Arabia was not one of them, other Gulf countries were included and all clustered around the collectivist end of the spectrum. Later, in 2012, a website was opened that received Dr. Hofstede’s endorsement and does directly define Saudi Arabia as a collectivist society (The Hofstede Center, 2016). Saudi Arabia by Hofstede’s definition fits the persona of a collectivist’s society. A method of teaching that logically fits this type of society would be CL.

Examining methods of teaching is one course of action for elevating the quality of educational instruction with a particular demographic of population in mind. Students who learn collaboratively have been shown to reach higher academic standards of achievement, globally and specifically in Saudi Arabia (Alghamdi & Gillies, 2013; Alharbi, 2008; Johnson & Johnson 1999 & 2009; Liton, 2012; ‘Ayon, 2013; Slavin, 1995). For this reason we will investigate teaching methodology that may be beneficial to the Arab college student and in particular Saudi college students.

Background

Knowledge gap in Saudi Arabia

Global professors outline many barriers when students are obtaining an education that is taught in English to second language learners (Bodycott & Walker, 2000). Getting students to respond in class discussions is particularly difficult (Bodycott & Walker, 2000). Language barriers and cultural ignorance (on the part of both students and instructors) are among the top barriers cited, particularly in the Arab nations (UNDP/RBAS, 2014). As a result, Arab college students were also reported to be behind in academic achievement globally (UNDP/RBAS, 2014). The Arab Knowledge Report identifies a crisis of Arab performance and warns that the increasing gap will render the Arab nations unable to keep up with the rest of the world (UNDP/RBAS, 2014). This report focuses specifically on the age group of 19-29 as the solution to knowledge gap (UNDP/RBAS, 2014). The Arab Knowledge Report (2014) states “The Knowledge Index prepared by the World Bank indicates a mediocre Arab performance and an increasing gap between the Arab region and other regions of the world, in both Knowledge Index and Knowledge Economy Index from 2000 to 2012” (p.8).

Motivation may be a possible explanation for the performance deficit. The report said that Arab youth preferred government jobs over private jobs because government jobs ensure easy obtainment of security and income, thus reflecting the lack of motivation to master skills necessary for non-governmental jobs (UNDP/RBAS, 2014). To be successful at knowledge transfer the report concludes

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that motivation must be instilled in young people; and they suggest giving Arab youth the chance to apply their skills with efficient participation as they learn. Perhaps as a result of such a lack of motivation, unemployment rates are highest among this population age group: Saudi Arabia has the highest youth unemployment rate (43%), of college graduates from Arab nations (UNDP/RBAS, 2014). Saudi Arabia is also one of the countries that highly promotes higher education in English (Alghamdi & Gillies, 2013; Alsamani, 2014; Ezza, 2013; Khan, 2011, Liton, 2012).

Though studies on students in Saudi higher education are relatively few, there are some studies that describe the motivation of the Saudi student. Ezza (2013) studied Saudi Arabian students at a community college. Interestingly the students in the study received high scores on their English secondary certification exam; however, they were unable to answer in English a series of simple questions such as "Where are you from" (Ezza, 2013). Yet, these students were able to pass college courses with very high marks, despite the fact that they did not demonstrate an understanding of the English language that would support the high marks they were achieving. When the students were interviewed as to how they scored so high without a basic understanding of the English language, as evidenced by their grades in higher education, the students reported that they received at least one third of their grade for class participation and attendance (Ezza, 2013). They also admitted that despite the teacher giving them a substantial amount of points for these class behaviors, they didn't really have very good attendance or participation. The majority of these students also reported that they were able to negotiate their grades with instructors; thus some of the students were able to manipulate the instructors and receive a grade that they didn't earn.

Saudi students in the Ezza (2013) study and others were described as underachievers, full of excuses to avoid classes, procrastinators and not preparing for exams until hours or minutes before the exam (Alghamdi & Gillies, 2013; Kahn, 2011). This may partially be the responsibility of the instructors: instructors that give undeserved grades to students are themselves exhibiting the wrong ethical standards to students therefore not helping the people of the country they were employed to serve. However not all instructors can be manipulated to inflate grades.

This does not mean that the Saudi student or the Saudi educational system are devoid of academic integrity; and the issue of professionalism and academic integrity is being addressed in Saudi Arabia. One study (Babelli, Chandratilake & Roff, 2015) administered scales of academic integrity and professionalism to 103 Saudi medical students and 64 faculty from the same medical school. They concluded that both students and faculty would benefit from more focus on professionalism in higher education and that further research in this area is needed (Babelli et al., 2015). Thus, not all students or faculty have low academic integrity and it is an issue in Saudi Arabia that may just need to be integrated into the curriculum. Meanwhile, global professors should address the lack of motivation by modeling and teaching high levels of integrity in their students.

Cooperative learning method and knowledge transfer

Sometimes, the culture of a population group requires different teaching methods to motivate students to want to learn. Studies with both high school and college students in Saudi Arabia have found that CL promotes better learning of students studying in English (Alghamdi & Gillies, 2013; Alharbi, 2008; Al-Hazzaa & Musaiiger, 2001; 'Ayon, 2013). CL is a defined technique that is different from merely assigning group projects. CL is different from group projects in that students do not receive grades for the group activities i.e. the group activity itself is not a graded assignment, however the activity supports necessary skills for individual assignments that are due later.

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Another difference is that the number of the students in the group is small – two to three students per group. Students may or may not be in the same group each activity or even during the same activity. Quite often the activity may involve two parts: students begin the activity in a group of three, then switch groups to conclude the second part of the activity. Students in CL help each other achieve their own individual goals (Johnson & Johnson, 1999; Johnson, Johnson & Smith, 2014).

CL is a tested and validated teaching methodology with eleven decades of testing (Johnson et al., 2014). CL has been shown to enhance learning across a range of subjects, economic classes, gender/age groups, nationalities and cultures (Johnson et al., 2014). Therefore CL can be profitable and adaptable across multiple educational courses and teaching paradigms. It is suggested that teachers should research their teaching methods to determine the style of teaching that best fits the population they are teaching (Johnson et al., 2014). Any structure and any curriculum can be adapted to fit the CL method's paradigm. One CL instructor and researcher designed specific strategies and games to incorporate CL into the classroom in foreign language learning (Kagan & Kagan, 1998). Since then several researchers have successfully been using these strategies to adapt CL to their classrooms for foreign language instruction (Davoudi & Mahinpo, 2012)

Alghamdi & Gillies (2013) found that Saudi students in a CL paradigm achieved better grades than those taught in a traditional method of delivery. For the purposes of this study, the traditional method of delivery is the use of in-class lectures and group project assignments, conducted for grades. Alharbi (2008) found that using CL enhanced performance in English learning reading comprehension classes in Saudi Arabia. 'Ayon (2013) found that students in Saudi Arabia also reported having favorable attitudes to CL and they found it enjoyable and helpful. This study also found that post-tests were significantly better in groups of students that were in the CL classes as opposed to the traditionally instructed classes ('Ayon, 2013).

Current research is predicting that the crisis of academic underachievement in Saudi Arabia is only going to get worse over time, if neither faculty nor students are motivated to make a change (Ezza, 2013; Liton, 2012; UNDP/RBAS, 2014). CL teaching methods have been shown to improve learning in Saudi students (Alghamdi, 2014; Alhaidari , 2006; Alharbi, 2008). The majority of the research on the success of CL has been on student performance in English language classes. There were no studies found that focused on increasing the performance of Saudi students in courses not specifically intended to teach English. Considering CL constructs for English language development classes, curriculum constructs for other college courses should be created for integration of the method for courses such as "writing and research".

Guiding hypotheses

In the light of the literature review, the current study will focus on development of new curriculum and teaching methods to enhance course performance and increase motivation of Saudi Arabian college students in "writing and research" courses in higher education. We proposed the following hypotheses:

1. These Saudi undergraduate college students will significantly increase knowledge, as demonstrated by comparison of competency assessment tests given before and after taking the course, of scholarly writing and research skills in one semester when taught with a CL based course delivery design.

2. These Saudi undergraduate college students will perform at a higher level, as demonstrated by their final exam scores, final average course grade, and the pass/fail rate in “writing and research” courses designed with a new CL curriculum than students in a traditional “writing and research” course delivery design.
3. These Saudi college students will report similarly positive attitudes towards CL as ‘Ayon’s (2013) Lebanese college students that were instructed with CL methodology.

Methods

This primary focus of the study was on the development of new curriculum and teaching methods to enhance course performance and increase motivation of Saudi college students in “writing and research” courses. To achieve this goal, a new curriculum design incorporating the CL paradigm was created for course delivery. The course “Writing and Research” was redesigned in a CL format and administered to one group of undergraduate female college students at a private college in Al Khobar, Saudi Arabia. The other group of students received a traditional format of teaching, without CL. Assessment measures included quantitative comparisons of the number of passing and failing students between the course designs, final exam scores and the overall average course grade of each group. Groups were deemed to be equivalent at the start of the study by comparison of pretest given in the first week of the semester.

A secondary aim of this study was to create a more successful way to facilitate Saudi students’ progress towards becoming scholarly researchers. The study was designed to measure increased knowledge of how to conduct research and improved scholarly writing skills within the group of students that were taught with the CL course design. To assess the learning increase within the CL group, a pre-test was administered to measure their level of knowledge and skill with regard to scholarly writing and research prior to going through the course. The pre-test served both as a baseline for future comparison as well as a measure to determine if there were significant differences among the group prior to instruction. A post-test was then administered at the end of the course to assess the level of increased skill in writing and research. Inferential statistics were used to determine within group performance.

Cooperative learning as used in this study differs from some other kinds of group learning or group assignments in that group activities are conducted with groups of no more than three students. According to the literature, CL requires having the students work together to accomplish shared goals (Johnson et. al., 2014). For example in “writing and research” courses, small groups are given exercises of helping each other paraphrase sample articles together. They take turns initially paraphrasing and then they help self-correct and refine as a group.

Studies have shown that it is typical for students to report that they do not like group assignments; one of the reasons reported by these studies is that their grade depends on the group’s effort rather than solely their own (Capdeferro & Romero, 2012). For this reason we included a qualitative piece in the form of a questionnaire administered to the students at the end of the course. Some of the positive outcomes of blended learning involve improvement in course design and course satisfaction (Peterson, 2016; Saba’Avar, 2013). For example, students were asked to describe their experience of always having to work with other students in class. Responses were determined to be either positive or negative. Some students reported that they prefer working on their own and using class time to work on their own paper only. This type of response was considered “negative”. Whereas a response such as “Working with others helped my understand the parts of the research paper better” was deemed to be reflective of a positive attitude towards the CL format. The questionnaire was designed to obtain the

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perception and attitude of the students towards the CL format. The questionnaire used was modeled after and adapted from the self-completion questionnaire used in similar recent research on CL ('Ayon, 2013). 'Ayon (2013) also investigated CL with Arab students however the method was used in business and technical writing courses. The questionnaire included multiple choice, likert-scale and open ended questions.

Study participants

Solicited participants were one hundred and fifteen female undergraduate students enrolled in "writing and research" courses at Prince Mohammad bin Fahd University (PMU). All participants were between the ages of 18 and 25. Whoever signed up for the courses were the subjects of the research: students were not selected in any fashion by the instructor. All participants were asked to read and sign informed consent forms. Due to students dropping the course and some students being excluded from it for excessive absence according to PMU policy, a total of 73 students completed the study. All data presented here is based on these 73 participants.

Definition of groups

There were two groups of students in this study, determined by the class in which they enrolled. The two classes were randomly assigned to either CL format or traditional (T) format. There were originally 71 students in group CL and 44 in group T (the number of students per group was different because it depended on the number per class. Group CL was larger because one small overflow group was added to it). By the end of study there were 40 students in the CL group (attrition rate 44%) and 25 in the T group (attrition rate 25%).

Assignment of groups

The courses taught were five "writing and research" courses assigned to the same instructor by the university. Four classes were about the same size and one class was an overflow class that was small. The small class was combined with two of the other four classes. Therefore the T group consisted of two classes and the CL group consisted of three classes.

The courses taught in the traditional format still involved activities that included the whole class working as a group. The difference between the traditional and cooperative formats were that in CL classes students were divided into smaller groups of 2 to 3 students maximum to work on class activities that behooved the individual projects of each student. While helping others to achieve their individual goals, students were gaining knowledge and refining writing skills that can be used on their own paper.

These assignments are different from group assignments in that there is no group grade or project. Also the few group activities that were used in the traditional classroom were just class discussions conducted along with the traditional lecture method. There were no group assignments for grades in either format. The instructor considered Kagan's CL constructs as a conceptual framework while designing all new course activities (Davoudi & Mahinpo, 2012). While the structures illustrated in Kagan's work have been created solely to increase language fluency, we adapted the concept for the "writing and research" course. We constructed similar structural activities but specifically designed to enhance knowledge of each part of an academic research paper.

Course exams

Both groups, T and CL, were given exactly the same final exam. Each exam was worth 10% of the final grade and the final research paper was worth 20% for both groups.

Pre- and post-tests

The CL group was additionally given a pretest the first week of class and a post-test at the end of the semester. These tests included multiple choice and fill in the blank items. The pretest was given the first day of class to the CL group to determine the level of knowledge each student was coming into the class with. The post-test was given to determine if there was a significant increase in knowledge of the subject over the semester. The students were informed that these tests were not graded and did not count towards their final grade in the course. Simple *t* tests were used to determine whether there was a significant change in each group's scores over the course of the semester.

Questions in the pre and post-test were designed to measure four categories of research skills: analysis, organization, APA formatting and writing style. The percentages of correct answers in each category were calculated and *t*-tests were used to determine whether there was a significant difference between question categories and also whether there was a significant improvement within each category.

Data analysis

A mixed methods design was used. Quantitative methods were used to determine significant differences of final exam grades, overall course grades and within group CL differences of pre and post-tests. Both descriptive and inferential statistics were calculated to describe the sample and to determine whether the hypotheses were supported. Quantitative data was gathered and SPSS was used to determine significance of all data. Qualitative data was collected from group CL to determine the student's opinions of the new teaching methodology. This data was also compared to the opinions of Arab college students studying in Lebanon. 'Ayon (2013) designed and administered a self-completion questionnaire to both male and female undergraduate college students taking either business communication skills or technical writing courses in a CL format (2013). The constant comparisons method was used to analyze the data gathered from open ended questions. Constant comparisons is often used in qualitative research to compare instances in documents, surveys or other sources of written or visual data to identify themes, categories or groups. For example if analyzing surveys common themes or categories are identified. The next document is then compared to those themes and instances are categorized accordingly. There may be changes and shifts in the categories and subcategories as the process proceeds (Merriam, 2015).

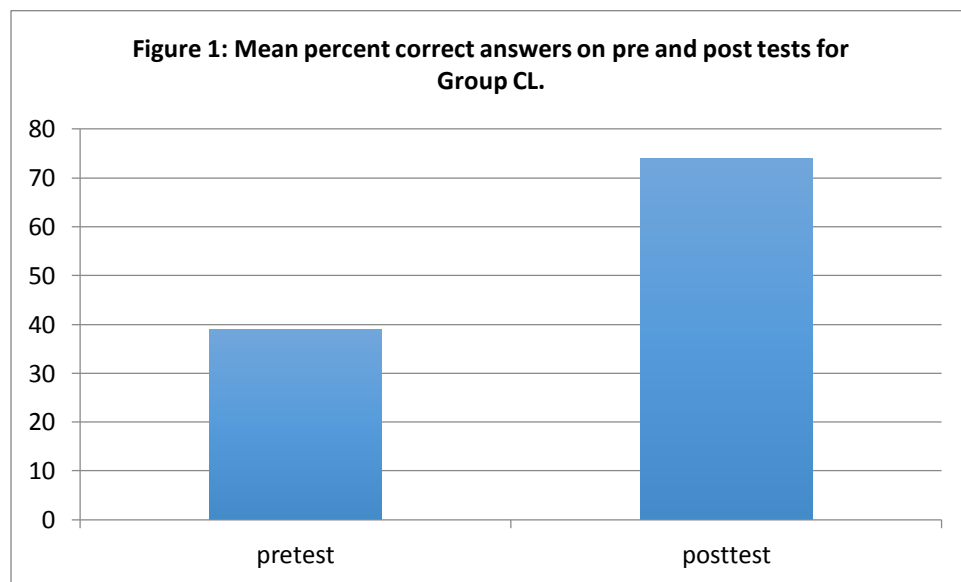
Findings

Improvement in the collaborative learning group

The pre-test was designed to investigate hypothesis 1. The pre-test was first used to establish a baseline to determine the starting level of the sample prior to taking the course; the baseline was also used to ensure that there were no significant differences within the CL group prior to the course such as extreme outliers who already had significant knowledge on how to write research papers. An analysis of the pre-test scores was conducted in SPSS, which identified one outlier: this student gained a pre-test score of 73%, while the next highest score was 56%. Though this score was an extreme, upon

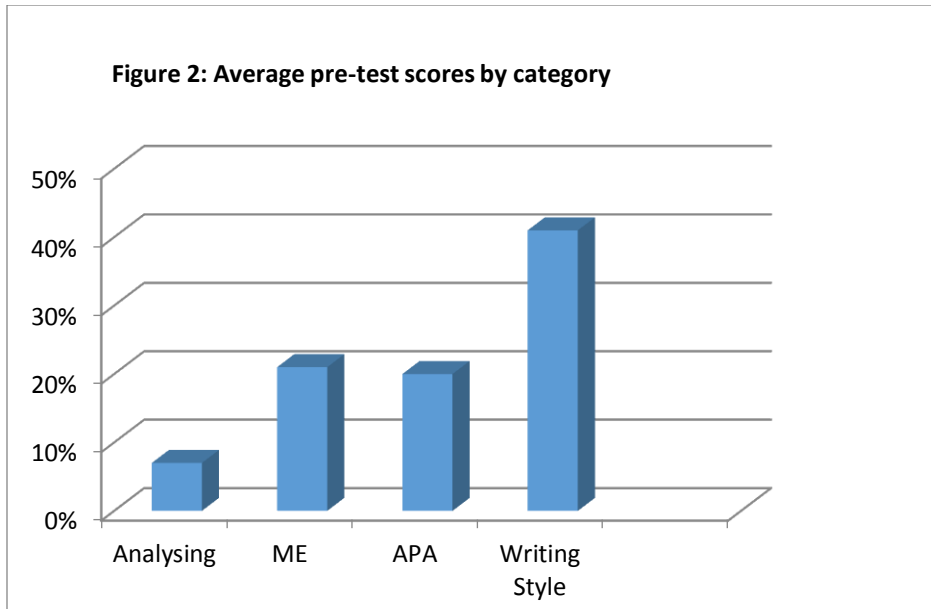
examination of the descriptive statistics, the mean (43%) and the trimmed mean (39%) were not considered to be significantly different. Furthermore, the outlier result proved to be irrelevant because the outlying student dropped the course after the first week and that student's data was not included in any of the results reported in this study. This score was removed from the pre-test data and the sample population was determined to be relatively homogeneous in knowledge and skills at the beginning of the course.

We hypothesized that subjects in Group CL would significantly increase their skills in academic writing and research as measured by the pre and post-test assessments. A paired samples t-test was used to compare the pre-test to post-test scores at the end of the semester. Group CL had an average of 39% of the answers correct on the pre-test; on the post-test they had an average of 74% of the answers correct. Our findings were significant, allowing us to correctly reject the null hypothesis: students in Group CL did score significantly higher on the post-test than the pre-test, $t(34)=-13.049$, $p<.001$ (see Figure 1).

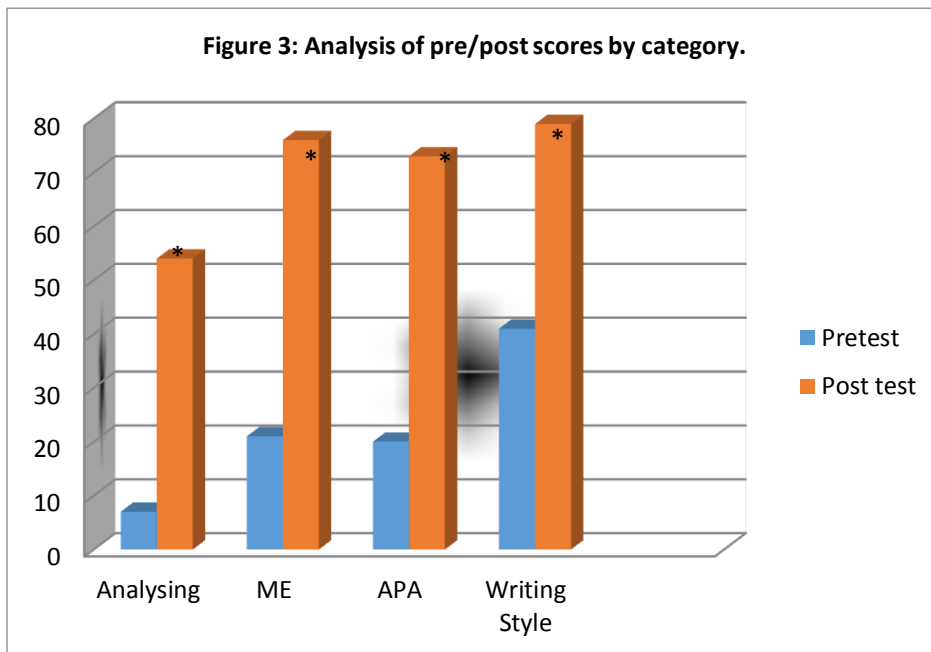


Pre-test question analysis

The pre-test consisted of four categories of question. Two categories were questions that pertained to the ability of the student to analyze others' research and their ability to write well. There were also knowledge questions on topics such as manuscript elements (ME, i.e. abstract, introduction, methods, results, etc.) and APA formatting. According to the pre-test results, students in Group CL averaged 7% in analyzing abilities, 21% in ME knowledge, 20% in APA formatting knowledge and 41% in writing style abilities, (see Figure 2).



Post-test questions were analyzed the same way. Students in Group CL averaged 54% in analyzing abilities, 76% in ME, 73% in APA formatting knowledge and 79% in writing style abilities, constituting statistically significant improvement in every category (see Figure 3).



Achievement compared between groups

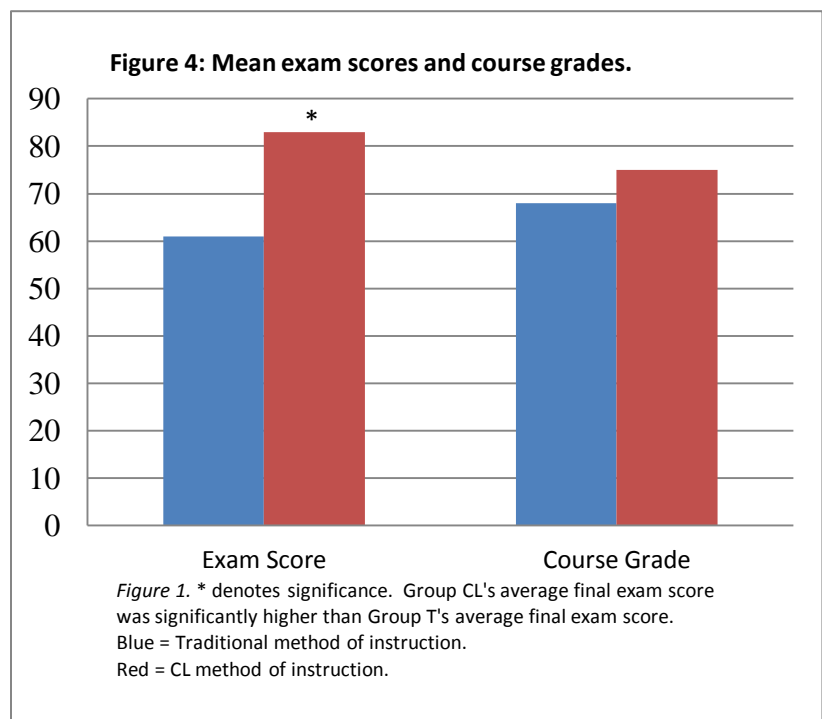
We hypothesized that subjects in Group CL would perform at significantly higher levels than students in Group T on measures of final exam grades, overall course grade and the percent of students that pass the course. Comparisons between groups were conducted using independent *t*-tests. Final grades in the

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course were checked for outliers as well. Two outliers were found in group CL and one outlier from group T. These students attended class but did not participate by turning in the eight required assignments; they only took the midterm and the final. Statistical analysis was conducted both with and without the outliers and the results remained the same; statistics reported below will be inclusive of all students.

Mean final exam score

Analysis of the final exam grades for each group revealed significant differences between groups. Mean scores were calculated for each group from the final exams. Group CL had a mean exam score of 82%. Group T had a mean exam score of 61%. The null hypothesis had to be rejected by Levene’s test of equality of variances and therefore equal variances were not assumed. We found significant differences between the group means on the final exam scores, $t(41) = -4.710$, $p < .001$: group CL scored significantly higher on the final exam than group T (see Figure 4).



Mean final course grade

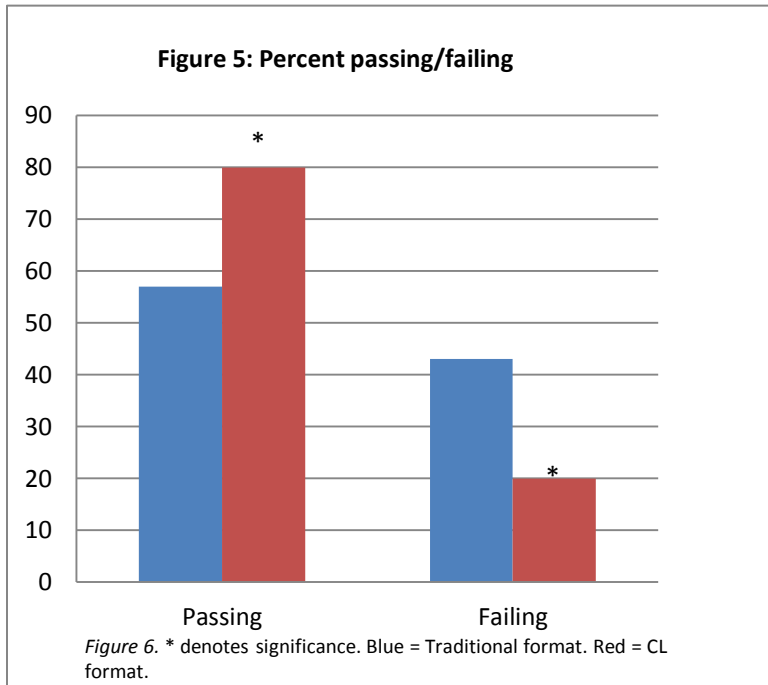
Final course grade was dependent on the grade for each section of the research paper, the grade for the final paper as a whole, the oral presentation of the research, the mid term and final exam. Analysis of final course grade did not yield significant differences, $t(68) = -1.490$, $p = .141$. Levene’s test for equality of variances was not significant this time, therefore variances were assumed to be equal. The mean course grade for group CL was 75. Group T’s mean course grade was 68 (see Figure 4). When the outliers were removed, significance was marginally missed, $t(49) = -1.878$, $p = .06$.

Pass/fail measure

Analysis of the number of students passing the course in each group revealed significant differences between the groups. In group CL, 80% finished with a passing grade. In group T, 57% finished with a passing grade. We conducted an independent samples t test and found that significantly more people

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passed the course in group CL than in group T, $t(54) = -2.081, p < .04$. Levene's test for equality was significant again so equal variances were not assumed (see Figure 5).



Attitudes to collaborative learning

It was hypothesized that Saudi college students would have similar attitudes towards CL as the Lebanese population in the 'Ayon (2013) study. Students were given a self report questionnaire to fill out the last week of class. On questions 5 through 11, frequencies expressed as percentages for group CL were compared to the Lebanese population in the study by 'Ayon (2013). Similarly to the Lebanese CL group, our survey respondents reported very positive attitudes towards CL. In both groups the majority ranked CL as 'good', 'very good' or 'excellent'. The modal response for our survey sample was 'Excellent' (see Table 1).

Table 1: Attitudes to CL (percentages).

	Saudi Arabia	Lebanon
Excellent	<u>35</u>	24
Very Good	24	<u>43</u>
Good	29	30
Satisfactory	12	0
Bad	0	3
Very Bad	0	0

Two themes emerged from the qualitative data on the Saudi population's explanations for the experience. One theme was that they had a good experience because they learned a lot. Fifty four percent of the comments were found to be about learning. The other theme that emerged was teacher quality. Eighteen percent of the Saudi population reported that the teacher made the experience positive.

Question six asked survey respondents how they found working collaboratively with other peers. Our survey results again were very similar to the Lebanese population (see Table 2).

Table 2: Description of working with peers

	Saudi Arabia	Lebanon
Helpful	<u>51</u>	<u>60</u>
Enjoyable	19	45
Challenging	19	34
Wasteful	2	3
Unhelpful	6	5
Others	2	5

Note. Survey respondents were asked to circle all that apply, therefore total does not equal 100%.

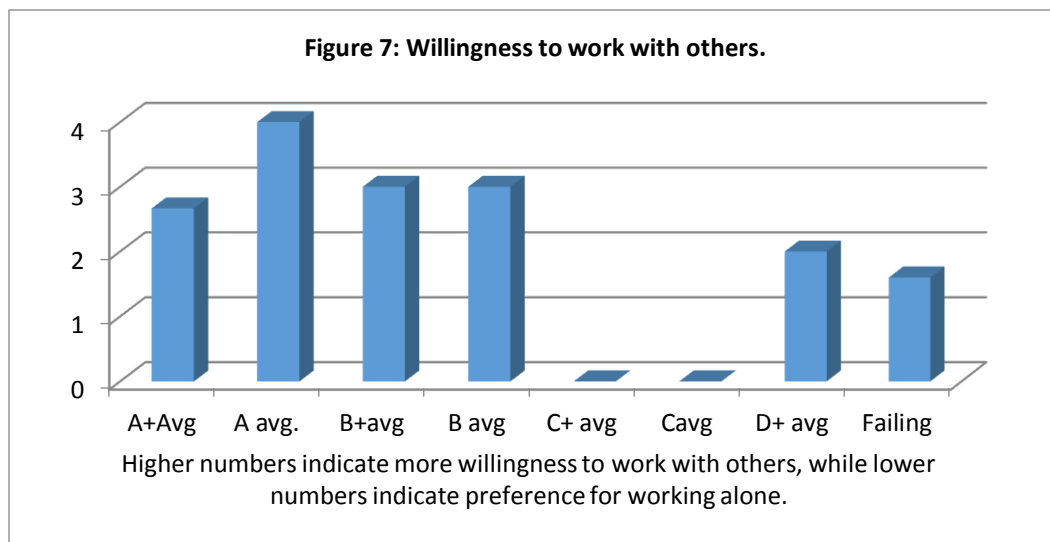
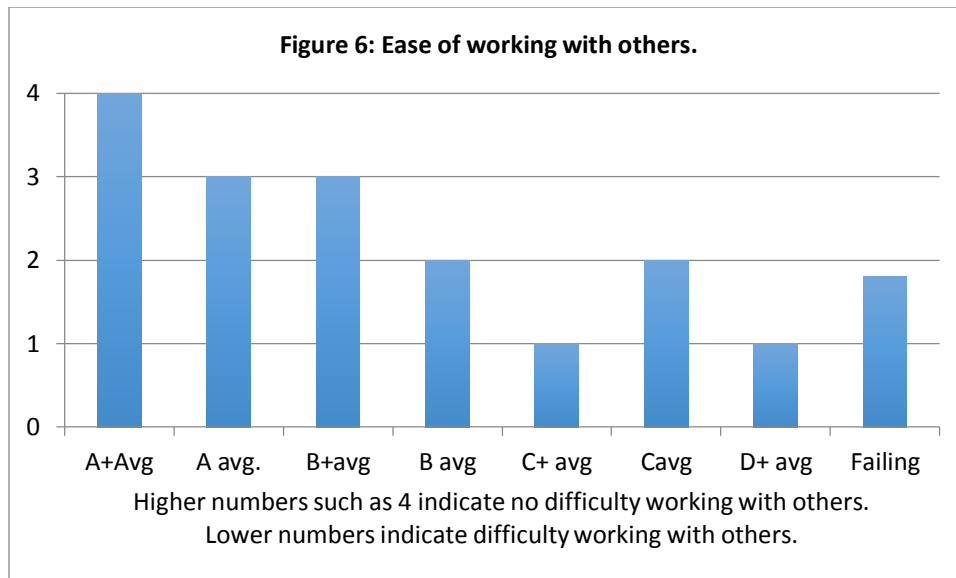
Similar to the Lebanese population, the qualitative data yielded both positive and negative themes. The negative theme presented complaints about other group members; on the other hand the positive theme was mainly the benefit of getting help from others.

Likewise on questions 7 & 10, the Saudi population was similar to the Lebanese population in that they both indicated that working with other classmates improved their course achievement or grades and the majority said that CL facilitated learning.

On questions 8 and 9, survey respondents were asked again to check all that apply. In this area, our sample was not compared to the Lebanese population because the findings were not published for these questions. For our survey sample the majority reported gaining flexibility as the most often cited advantage of CL. The most common challenge cited was "other people's different ways of thinking."

The likert scale items supported the findings from the multiple choice questions. The majority reported that they did enjoy working with others, but they also reported that they would rather work individually.

As one additional measure we cross referenced the answers on each of the survey questions with the grade the individual received in the class. Responses were grouped by course grade and the mean was calculated for each grade category by question. Chi square analysis was run on each question across course grade. The grade received in the course was never a significant factor in survey answers, even though on two of the likert scale questions it did appear that people with lower grades may find it more difficult to work with others (see Figure 6), and people with higher grades may tend to prefer to work individually more so than people with lower grades (see Figure 7).



Conclusions

Research on the educational practices and learning styles of Arab college students is lacking, particularly in Saudi Arabia. In addition, Arab college students recently have been reported to lag behind the majority of the educated world (UNDP/RBAS, 2014). The small amount of literature available indicates that Saudi students lack motivation (Alghamdi & Gillies, 2013; Ezza, 2013; Kahn, 2011). For this reason we intend to investigate methods of instruction to improve Saudi learning and motivation to learn. To begin the process of better understanding Saudi Arabian learners in previous research, we investigated the learning styles of Arab college students (Nash, in review) and found that they had a divergent learning style. The divergent style learner likes to brainstorm and work in groups (Nash,, in review). Considering these results it was decided that the theory of CL may be the best fit for Arab learners.

The CL methodology seemed to be very successful with this sample of Arab college students. Our first hypothesis was that this method would increase their knowledge and skill of writing a proper research

paper significantly in one semester and it did. The pre-test, administered the first week of school, revealed that the sample population did not have sufficient knowledge or writing skills to effectively write a research paper. By the end of the semester the majority of the class had written a well-researched scholarly paper as undergradates.

Our next hypothesis was that these students would achieve significantly higher academic levels than a sample population that was taught with traditional methods only. Our hypothesis was partially supported. The CL group scored significantly higher on the final exam than the T group; the CL group also had significantly more people passing the course than the T group. However, there was no significant difference between the groups when it came to the final course grades. This was perplexing to say the least, given the other statistical outcomes for final exam grades and the passing rate of students. Two outliers were identified in the CL group and one in the T group; however, when the outliers were removed from both groups and the statistics were run again, significance still was not achieved. It is worth noting though that the statistics were just shy of reaching significance at the $p < .05$ level and the CL group did have a higher overall course grade than the T group.

Possible explanations for this outcome could be that the failing students in the T group did enough work on each section of the paper that their scores were considerably higher than the failing students in the CL group. Also the CL group had the phenomenon of a much higher attrition rate. It could be that a majority of potentially higher performing students may have dropped out, whereas in the T group by chance had more of the lower performers dropping the course. This is why it is important to revisit this research with a larger number of students.

Alternatively, it must also be contemplated that the CL format itself caused students to withdraw from the course. We did not administer the student perception survey to those participants that chose to drop the course. Therefore future research is suggested to institute this procedure into the research design.

Finally we hypothesized that this sample of students from Saudi Arabia would be similar to a sample of Arab students from Lebanon that also was under the tutelage of CL. Our hypothesis was supported: the groups were very similar. These results indicate that Arab learners as a group may share similar learning styles and needs. This also needs further investigation with other Arab populations in different regions of the Middle East.

Limitations and recommendations

There were some limitations to this study. The attrition rate is one of the main barriers. It is recommended that the study be duplicated with a larger number of students to accommodate the high attrition rate. This is a particularly hard class compared to other freshman and sophomore courses and they students tend to scare out of the class before they give themselves a chance. Furthermore, the student perception survey was not administered to the exiting students to determine if the teaching format itself was a contributing factor of the students leaving the course.

Another limitation to this study is that we did not measure motivation levels going into the class. Perhaps the mitigating factor here is the motivation level of the student rather than the methodology. It is recommended that future research measure the motivation level of the student in the beginning of the semester and consider the data with that variable to determine a possible interaction.

Other limitations of the study were that mostly freshman were used and only females. The Lebanon study was conducted with both males and females. This study was conducted on females only for

reasons of convenience. Prince Mohammad bin Fahd University is a divided campus with a separate male and female campus. The researcher being female found it easier to gather data from female students especially since timeliness was an issue. The pre-test had to be given promptly in the first week, while the students were still naïve of instruction and the post-test had to be given in the last week and no sooner. Relying on others to gather the data on the male side was not practical.

It is also recommended that the research be replicated administering the pre/post-test to both the T group as well as the CL group. This way both groups could be assessed on a “within” group measure and then compared between groups.

This study served to confirm prior research as to the learning style of Arab college students (Nash, in press). This study highlighted the benefits of CL in the college course “writing and research.” It is implied that the methodology can be adapted and successfully used in all college courses. It is suggested to adapt this style of teaching in Arab colleges and universities. The teaching style takes more creativity and energy on the instructor’s part, but it is worth it for the benefit of the student’s positive academic progression.

A typical Saudi Arabian college student is a bright and caring individual with a lot to offer to the world. Our impression is that their creativity, as well as their critical thinking, manifests itself to a much greater degree when they work in small in timate groups. Arabs are a collective culture (Cohen, 1991) and Arab people try to strike a balance between humbling themselves and yet reflecting dignity (Samarah, 2015). In a review of the literature on international communication, “face saving” was termed to describe the desire of people to have a favorable public image of self worth (Croucher, Sammier & Rahmani, 2015). Croucher et al. (2015) found that the construct is present in all cultures; however, it is manifested differently according to culture. In particular there is variation among people that are members of collectivist societies and those that are more individualistic societies. CL provides a protection in and of itself that promotes face saving while learning for the student from a collectivist society.

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