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# The effect of learning styles on group work activities

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## Abstract

This paper examines the effects of learning styles in language classrooms. The study examined lays out the learning styles of the students. Groups formed by the researchers considering the learning styles of the students show how learning styles affect the performance on group work activities in language learning. By finding out the learning styles of the students and giving activities according to them, the teacher might improve the efficiency of his or her own teaching and increase the success rate. By targeting all learning styles and forming groups with students who have different learning styles, the teacher is also able to help the students develop their less dominant styles.

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## 1. Introduction

Language classrooms consist of students who have different learning styles. This has a great impact during the learning process. Therefore having an idea about the learning styles of the students is important. Kolb (1976) indicates that learning style is one of the important factors that affects personal academic competence. If the teacher knows about his or her students' learning styles, their learning can be enhanced. This research will provide the teachers a way to find out the learning styles of their students to see whether knowing students' learning styles help or hinder their performance on group work activities in language learning.

## 2. Theoretical Background

Revell (1992) stated that each one of us has a preferred modality: visual, auditory or kinesthetic (VAK). This does not mean that we are only one of these things; we are usually a combination of all three, but one predominates. Learners respond better in that one modality than in the others: we like to see things, or we like to hear things, or we like to touch things and / or do something physical.

Guild (1994; cited in Matthews, 1996) stated that with the restructuring movement in school in recent years and its emphasis on diversity in student populations educators continue to question whether a student's learning style makes a difference in achievement. Guild and Garger (1985; cited in Matthews, 1996) supported this view by mentioning the researchers' suggestions. According to these suggestions, certain learning styles may be more effective for

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particular activities in the school environment than other styles. Matthews (1996) investigated learning styles and academic achievement for high school students. 6218 students from 19 high schools in rural, urban and suburban areas of a southeastern state took place in the research. Each school selected approximately 10 percent of the students at each grade level.

The students were given a questionnaire. It was The Learning Style Inventory by Kolb (1985a) which is a twelve-item questionnaire to determine a specific learning style from among the following four styles:

1. **Diverger** (people who have the ability to view concrete situations from many different points of view and approach problems through observation rather than action)
2. **Assimilator** (people who have strengths in understanding a wide range of information and put it into concise, logical form)
3. **Converger** (people who find practical uses for ideas and theories and have the ability to solve problems and make decisions based on finding solutions to questions or problems)
4. **Accommodator** (people who learn from hands-on activities, rely on people for information rather than from technical analyses, and carry out plans and experiments)

(Kolb 1985a)

Then the researchers constructed a demographic questionnaire to obtain information on gender, age, race, grade level, and academic achievement. This information provided the data to describe the sample and to examine the relationship of learning style with students' assessments of their academic achievement. Students rated their academic achievement as excellent (5), good (4), average (3), fair (2), or poor (1). Additionally, teachers surveyed the academic ratings that students gave themselves, and when there was a large discrepancy between the teacher's rating and the student's rating, researchers changed the response to match the teacher's assessment. It should be noted, however, that few changes occurred as a result of the teachers' impressions.

Their study examined the relationship between perceived academic achievement (self-ratings) and learning style preference as well as interaction effects of gender, race, and grade.

The results of the study showed that students with the **converger** style had higher academic ratings than students in the other three styles. Also, students with the **diverger** style were low achievers as compared with students in any of the other three styles. The results also showed that learning style had a significant main effect on perceived academic achievement.

In another study conducted by Wang, K. H., Wang, T. H., Wang W. L. and Huang, S.C (2006), the effects of formative assessment and learning style on student achievement in a web-based learning environment were investigated. A quasi-experimental research design was used. Participants were 455 seventh grade students from 12 classes of six junior high schools. Subjects were tested using Kolb's Learning Style Inventory, and assigned randomly by class into three groups. Each group took web-based courses using one of the formative assessment strategies. Pre- and post- achievement testing were carried out. A one –way ANCOVA analysis showed that learning styles and formative assessment strategy are significant factors affecting students' achievement in a web-based learning environment.

Johnson (2007) conducted a similar study. In Johnson's study, a sample of 48 college students prepared for in-class examinations using two web-based study conditions. The first condition used web-based study groups and the second condition used web-based quizzes. The Index of Learning Styles positioned students on four dimensions of learning style (active-reflective, visual-verbal, sequential-global, and sensing-intuitive). Students who were more active than reflective expressed a preference for face-to-face study groups rather than online study groups and for online quizzes rather than pen-and-paper quizzes. Students who were more visual than verbal expressed a preference for online quizzes rather than online study groups. Such preferences were validated by decreased achievement in the

less-preferred study condition. It was indicated that instructional applications of web-based technology may provide mechanisms for more consistently accommodating student learning style in higher education.

The emergence of numerous learning style models over the past 25 years has brought an increasing attention to the idea that students learn in diverse ways and that one approach to teaching does not work for every student or even most students (Hawk & Shah, 2007).

Acar et al. (2008) mentioned about the term “learning style” in their study. They referred to Dunn (1971) who indicated that learning style is a way in which a learner approaches the learning process, and learns and retains new and difficult information. They (ibid) found out that learning style is claimed to explain the preferred attitudes and behaviours towards learning basing their study on Honey & Mumford (1992). Acar et al. (2008) also cited for Gadzella, Stephens & Baloglu (2002) and Wynd & Bozman (1996), claiming that knowledge of learning style, and use of educational resources relevant to learning style, will lead to efficient learning. Acar et al. (2008) specified that Dunn & Dunn (1991) and Federico (1991) argued about learning styles. They stated that teachers are most helpful when they help students to learn in a way that suits their style preference.

### **3. The Present Study**

Discovering and using learning styles is a key to being a successful tutor. Learning styles are characteristic and preferred way of learning. The most successful tutors are those who can present a teaching material in a variety of ways using a combination of teaching methods in order to reach the diverse learning styles of their students. (Waubonsee Community College, 2002-2007).

The review of literature has shown that learning styles and academic achievement have a parallel relationship (see pp 1, 2). This led the researchers to the present study on young learners to have more effective and enjoyable group work activities. In this regard, the present study proposes the following research questions:

1. What is the effect of learning styles on group work activities?
2. How does “grouping students with different learning styles” help learning?

### **4. Methodology**

#### *4.1. Participants*

The participants in this study comprised of a group of 5<sup>th</sup> grade private school students at one of the Bahcesehir K12 Schools in Istanbul among other 40 Bahcesehir K12 Schools in Turkey. The school, as the other members of the K12 family do, applies Barbara Prashnig’s Individualized Learning Styles Model ([creativelearningcentre.com](http://creativelearningcentre.com)). Two classes of English learners were involved in the study. The classes are labelled as A and B. The students in Class A (CA hereafter) were given Sensory Learning Style Test (SLST hereafter) ([britishcouncil.org](http://britishcouncil.org)). CA contained 21 students and class B (CB hereafter) contained 22 students. The level of the students is ranging from A1 to A2. The students have 10 hours of English a week. Each week, in their English lessons they are expected to work in groups twice on average.

#### *4.1.1. Procedure*

Testing was conducted in participants’ regular classrooms by one of the researchers. The researcher administered the inventories and the test in the English classrooms with the English teacher present.

To determine the learning styles of the students, the researchers gave each student the sensory learning style test in CA, the experimental group. In this test some words were read out distinctly, but not too slowly (with a pause in between each) and students were told to write each word in the appropriate column (see, hear or feel) according to

the sensation they have. E.g.: Whether they “see” an object or the written word / spelling on a page (visual), if they “hear” the sound of the word or the sound the object might produce (auditory), or if they “feel” any sort of taste, smell or emotion like shuddering, disgust, anger, calmness, pleasure etc...(kinesthetic).

List of words read out:

pie, rain, hill, rabbit, typewriter, fish, fat, old, sing, afraid, oil, wood, glue, radio, mosque, school, yesterday, cloud, toenail, dead, God, violin, Ayşe, computer, octopus, ink, shoes, horse, coffee.

All of the oral and written instructions were given in English, but the words were read out in Turkish not to cause any pauses for translating the words into Turkish in the students’ minds.

After finding out each student’s learning style with the help of SLST, CA, the experimental group, was given a group work activity. The groups were formed by choosing students with different learning styles. (see Table 1)

Table 1. Groups formed for the group-work activity in CA

<b>Group A</b>	<b>Group B</b>	<b>Group C</b>	<b>Group D</b>
2 V students	3 V students	1 V student	2 V students
1 VA student	1 VAK student	2 VA students	1 VA student
1 K student	1 K student	2 VK students	1 VK student
1 VAK student	1 VA student		1 VAK student
Total: 5 students	Total: 6 students	Total: 5 students	Total: 5 students

VK = Visual Kinesthetic

VAK = Visual Auditory Kinesthetic

VA = Visual Auditory

V = Visual

K= Kinesthetic

Each group consisted of 5 or 6 students. Because the number of each learning style was not equal, the researchers tried to form the groups as much as equal to each other. Group A contained 4 Vs, 2 As, and 2 Ks, Group C contained 5 Vs, 2 As and 1 K whereas Group B and D had 5 Vs, 2 As and 2 Ks.

After the students were divided into groups, they were told to create a picture story containing 4 pictures and 4 paragraphs and act it out. It was stated that they had to create stories with only two characters.

CB, the control group, did not have the SLST, but the same group activity with the same instructions was given to the students. The students in each group were chosen randomly. 4 groups were formed. The groups were labelled as A, B, C and D. Group A and B contained 5 students and Group B and C contained 6 students.

The researchers joined each group in each class during the group work activity and took notes about the process of work and attitudes of the students. They spared approximately 5 minutes, the same time, for each group to observe and take notes.

#### *4.1.1.1. Data Analysis*

The words in each column were counted in the SLST. Each column provided the researchers with data to show the students’ dominant preferred learning styles. The column which has got the most points indicated the learning style of each student. If “I see” column has the most points, the student is a visual learner. If “I hear” column has the most points, the student is an auditory learner. If “I feel through my body” column has the most point, the student is a kinesthetic learner. If the total marks of two or three of the columns are close to each other that revealed the student involved both or all styles. The researchers formed the groups in the experimental group according to the results of this test.

To assess the first and second research questions, it is referred to the notes and observations of the researchers during the group work activities in the experimental group and the control group and they were compared.

## 5. Results

At the end of the data analysis of the SLST, it is found out that CA, the experimental group had 8 Vs, 5VAs, 3 VKs, 3 VAKs and 2 Ks. (see Figure 1)

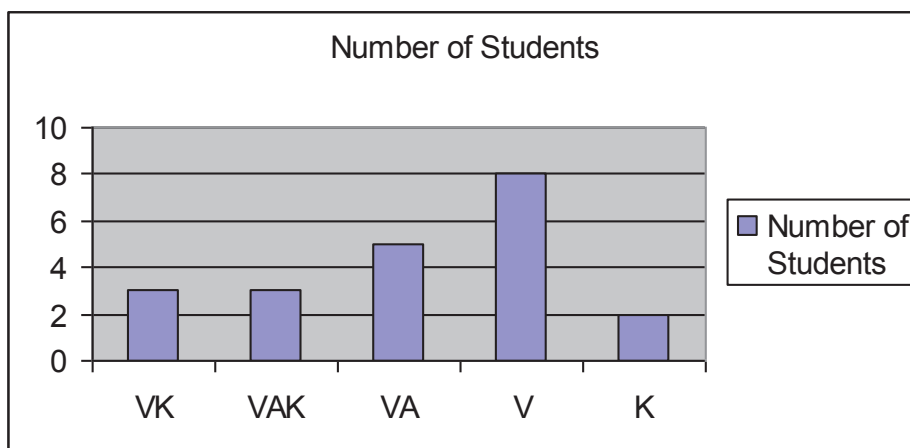


Figure 1. Learning styles of the students in CA

VK = Visual Kinesthetic

VAK = Visual Auditory Kinesthetic

VA = Visual Auditory

V = Visual

K= Kinesthetic

There were significant differences between the group activities in two classes as stated below. Because the groups in CA, the experimental group, were formed considering the learning styles of the students, all the students joined each part of the activity willingly. This helped them become motivated easily. The visual students mostly preferred to draw the pictures of the stories. The kinesthetic ones gave many ideas during the process of writing the paragraphs whereas the auditory ones usually preferred listening to the others and sometimes repeated them. In the acting part of the activity, all the kinesthetic students wanted to take part except one in Group D. When the researchers asked the reason, he mentioned that he had a headache. One of the visual students wanted to take part instead of him. During this part of the activity, three of them forgot some words and tried to explain these words using mimes and gestures. The group work activity in this class seemed to be more effective. All the students participated in the activities willingly and they were usually compatible in their groups.

In CB, the control group, some of the students seemed to be unwilling. All the groups, except Group C, had some problems during the activity. In Group A, nobody wanted to draw the pictures of the story or have a role play. In Group B, 2 of the students drew the pictures willingly and the other 3 students wrote the story but in the end nobody wanted to take part in the role play. Group D worked well on drawing pictures and they all wanted to act in the role play. They even had a short quarrel between each other about this, but they hardly finished writing their paragraphs with a lot of missing parts. Group C seemed to be the most compatible. They shared the parts of the activity very easily. One of the students drew the pictures, three of them wrote the paragraphs and two of them acted it out. The researchers observed that the students in this group worked well and acted out the role play without any problems.

## 6. Discussion and Implications

The results of this study indicate that students participate and do well in group work performances in the language classroom if the teacher takes the learning styles of the students into consideration when forming the groups. Balancing activities including all learning styles helps the learner to concentrate, to be motivated and to show a good performance. It is seen that students can have difficulties at first when they are asked to do something that seems unnatural to them, but they adopt other learning styles that are not their preferred ones even if it is not very easy. These results support previous studies which found that learning styles and formative assessment strategy are significant factors affecting students' achievement in a web-based learning environment (Huang et al., 2006) and instructional applications of web-based technology may provide mechanisms for more consistently accommodating student learning style in higher education (Johnson, 2007). The findings also reveal that students can be more active in language classrooms when teachers are aware of the impact of learning styles and design their lessons accordingly.

Not only will the teacher improve the quality of his or her own teaching, but also help the learners to develop their less dominant preferred learning styles by implementing a range of activities involving all type of learners.

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