

The Effect of Sensory Learning Styles on the Test-Type Based Performance of Iranian EFL Learners

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Abstract – Every human being learns differently because of different styles that have been formed within the personal framework of learning. These different preferences for learning result in learners who learn and perform language tasks differently. The present research aimed to investigate the impact of the learners' dominant learning styles and their performance on multiple-choice lexical and open-ended cloze tests. The subjects of the study were intermediate English language learners from Shokouh English Institute in Tehran. To make sure about the homogeneity of the participants, the researcher carried out a PET proficiency test. Those who were found to be homogeneous were then given the Perceptual Learning Style Preference Questionnaire devised by Reid (1987), based on which the participants were divided into three groups of auditory, visual, and tactile learners. Following this, the participants were given two lexical tests, namely: multiple-choice and open-ended cloze lexical tests. Finally, the statistical procedures were done on the attained scores and the results were analyzed.

Keywords: learning style, auditory, visual, tactile, open-ended cloze test, multiple-choice test

1. INTRODUCTION

Learning occurs in many ways and no two learners learn the same way. Different people possess different learning styles; they prefer some certain methods of learning over other ones, mostly while even not being aware of this fact. Ellis (1986) says "variability in language-learner language is the result of not only contextual factors, but of individual differences in the way learners learn an L2 and the way they use their L2 knowledge. It is probably accurate to say that no two learners learn an L2 in exactly the same way" (p. 10).

Reid (1987) states that "learning styles refer to a pervasive quality in the learning strategies or the learning behavior of an individual" (p. 89). Spolsky (1978) also defines learning styles as "identified, individual approaches to learning situation."

Learning styles mean that each individual has his or her own approach to acquire a new language or in learning any other subject, and that an individual's learning styles affects the way he or she performs on certain tasks. The performance of an auditory student on a listening test, for example, is not the same as that of a visual or a tactile learner on the same test.

Felder (1995) states that "the way in which an individual characteristically acquires, retains, and retrieves information are collectively termed the individual's learning style.

Mismatches often occur between the learning styles of students in a class and the teaching style of the instructor with unfortunate effects on the quality of the students' learning and their attitude toward class and subject" (p. 21). Since the quality of learning is assessed through a test, it may be argued that learning styles could affect the test scores.

Testing, in the meantime, is an important part of every language teaching and learning. As Farhady, Jafarpour, and Birjandi (1995) say, tests motivate students throughout the course of instruction and reinforce learning. Testing may also be affected by learners' learning styles. It provides goals for language teaching, and it monitors for both teachers and learners' success in reaching those goals. In other words, "testing and teaching are so closely interrelated that it is virtually impossible to work in either field without being constantly concerned with the other" (Heaton, 1990, p. 5).

Tests may be constructed primarily as devices to reinforce learning; therefore, the tests are geared to the teaching that has taken place. They also motivate the students' performance in the language; so in this case, teaching is geared largely to tests. Hughes (1996) mentions that if a test is regarded important, preparation for it should dominate all teaching and learning activities. Otherwise, the test content and testing techniques will be at variance with objectives of the course, which will result harmful washback. Davies (1990) also mentions that tests have great influence on teaching, which is known as washback or backwash effect, and this strong influence is usually negative. For example, for university study in one of the English speaking countries, the students should have a good command of language skills (reading, writing, listening, and speaking) in order to be able to understand the lectures in the classroom, take notes, attend classroom discussion, and read and comprehend the texts. But if the tests are in multiple-choice format, then the examinees' practice will focus on practicing multiple-choice items rather than skills which they need in that specific situation. Thus, tests effect is harmful on teaching.

Davis (1968) believes "a good test is an obedient servant since it follows and apes the teaching" (p. 2). But Hughes (2002) criticized this view since they are occasions when teaching is poor or inappropriate and tests create a beneficial on teaching. Therefore, testing does not always follow teaching. This is the case when it is said tests have positive washback effect on teaching.

Very often, tests fail to measure whatever they are intended to measure. Teachers usually believe that students' true abilities are not usually reflected in test scores they obtain. There are two major sources of inaccuracy mentioned by Hughes (1996): (a) the test content and techniques; (b) lack of reliability (consistency and measures). After all, the primary activity is teaching. If testing comes in conflict with teaching, then testing will be failed. However, if we accept that tests are necessary and we care about testing, we should do everything to improve the practice of testing.

In general, teaching and testing are inseparable parts of a cycle. Chastain (1988) believes that testing is a kind of feedback, which makes improvement possible. Therefore, tests are the important part of any educational system, which benefit students, teachers, and even administrators by confirming progress that has been made and showing new directions for the future.

Brown (2003) believes that "learning styles provide insights into the ways learners perceive, interact with, and respond to the environment in which learning occurs." This research is trying to see if Iranian EFL students of intermediate level after being divided into three learning styles groups of auditory, visual, and tactile learners perform differently on open-ended cloze test and multiple-choice lexical one. In the process of the present study the following questions have been put forth:

1. Do Iranian EFL students, who happen to be of auditory learning style, perform differently on Open-Ended lexical cloze tests compared to students with other dominant learning styles?
2. Do Iranian EFL students, who happen to be of visual learning style, perform differently on Open-Ended lexical cloze tests compared to students with other dominant learning styles?
3. Do Iranian EFL students, who happen to be of Tactile learning style, perform differently on Open-Ended lexical cloze tests compared to students with other dominant learning styles?
4. Do Iranian EFL students, who happen to be of auditory learning style, perform differently on lexical multiple-choice lexical tests compared to students with other dominant learning styles?
5. Do Iranian EFL students, who happen to be of visual learning style, perform differently on lexical multiple-choice lexical tests compared to students with other dominant learning styles?
6. Do Iranian EFL students, who happen to be of tactile learning style, perform differently on lexical multiple-choice lexical tests compared to students with other dominant learning styles?

Learning styles are important cognitive preferences that can have a great contribution to the process of learning. The effect of learning styles on different fields of learning has been studied to see what kind of activities would be proper for different learner types. McDonough (2002) states that "it has been suggested many times that a general strategy of instructional matching is appropriate: adopting teaching to find a method which is suitable for the students' learning characteristics. From a common sense point of view, it seems silly to insist on playing games with learners who do not like playing games" (p. 99).

2. METHODOLOGY

2.1 Participants

A minimum of 90 Iranian intermediate male EFL learners, chosen from among those learning English at Shokouh English institutes in Tehran, served as the subjects of this study. In addition, the selected subjects were all chosen between a certain range of age (15 to 25 years old). The subjects also had the same language proficiency level (intermediate) which was determined through PET proficiency test.

2.2 Instrumentation

The instruments utilized in this study will include, first, a valid proficiency test to evaluate the subjects' level of language proficiency. The PET test (Preliminary English Test) has been chosen to fulfill this purpose. Before being administrated, the PET test was given to thirty intermediate students, who were not part of the study, in order for the researcher to discriminate items. Items which were too easy or too hard were removed from the test.

After administrating the test to a large group of subjects, 90 students whose scores were within one score above and below the standard deviation would be chosen for the study. Secondly, Reid (1987) Perceptual Learning Style Preference Questionnaire (PLSPQ), Appendix A, was given to the students to determine their learning style preferences. Reid's PLSPQ determines if the students are of auditory, visual, and tactile learning styles.

PLSPQ is a questionnaire which is used to elicit data on learners' learning preferences. As Hayati (2009) puts it; "through the years, several measures have been developed to elicit data on learning styles. Yet, Reid (1987) was the first to develop a questionnaire on learners' sensory preferences, which form a subset of learning styles."

Following that, a validated open-ended lexical cloze and multiple-choice lexical tests in the form of two reading passages, were administered to the students. The open-ended test is chosen from among authentic cloze materials. The PET, which is well geared to the intermediate level students, itself, includes a cloze passage. Therefore, to prepare the cloze materials in the best possible way, previously administrated PET tests were chosen to be given to the students. Some cloze passages were also chosen from some authentic Cambridge University PET preparation books.

On the other hand, the multiple choice lexical test was also chosen from the vocabulary section of the CELT test. The CELT (Comprehensive English language Test), contains 75 structure, 75 vocabulary, and 25 reading comprehension multiple choice items, which are all geared to the intermediate level English students. The CELT, comprising of three different sections, has been reviewed by a number of experts, and its overall reliability has been reported to be 0.98 (Mills, Swain, & Weschler, 1996). According to Mills et. al., the figure is quite good and indicates that a candidate's result on this test is close to a reflection of her real ability.

2.3 Procedures

As for the procedure the following process was carried out. First, in order to distinguish the homogeneity of the subjects' language proficiency level, a valid proficiency test, appropriate with the subjects' language level (intermediate), in this study the PET, was administered to a large group of students at Shokouh English institute in Tehran., . The test was scored and the results were registered. From among all those who sat the PET proficiency test, 90 students, with the age range of 15 to 25 years, whose scores fell within one score above and below the standard deviation were chosen randomly. Then the Perceptual Learning Style Preferences Questionnaire, or PLSPQ, constructed by Reid (1987), was given to the students to determine whether they are of auditory, visual, and tactile

learning style. It is vital to mention here that the chosen population was selected from a larger group of students whose PET scores were suitable for the cause of the study. The PLSPQ divides the students to three groups and each group should contain at least 30 members, therefore the 90 chosen intermediate students' population was made up of thirty of each three learning style category. Afterwards, one validated open-ended and multiple-choice lexical test were used to determine the performance of students of each type of learning style on the test. Finally, the results gained from the performance of different students were compared and analyzed to see if there were any significant differences between their performances on open-ended and multiple-choice lexical tests. On the whole, the results were aiming to determine whether dominance of some certain learning styles affects the students' performance on open-ended and the multiple-choice lexical tests.

3. RESULTS AND DISCUSSIONS

The purpose of this study was to determine the relationship between the sensory learning styles, which are auditory, visual, and tactile learners, of Iranian intermediate EFL learners and their performance on open-ended lexical cloze and lexical multiple-choice tests. To test these hypotheses, the researcher conducted a series of statistical procedures. First to select our sample, they were pre-tested through a test, that is, Preliminary English Test (PET). Those who got the scores between one standard deviation above and below the mean were selected. The descriptive statistics of the pretest is shown on table 1.

Table 1. *The Descriptive Statistics of the scores in PET*

N	No of Items	Mean	SD
120	122	15.78	2.11

Afterwards, the PLSPQ test was given to the students, which then divided the participants to three groups of students with different sensory learning styles. Since each group needed at least the minimum of 30 participants. The tests were given to a larger group of participants, out of which 90 were chosen for the cause of the study. After dividing the students into the three groups, open-ended cloze test and multiple-choice lexical test were given to them, to see how students with different dominant learning styles would respond to the test. The data was then collected and analyzed as follows.

A one-way ANOVA was run to probe the effect of the types of sensory styles (auditory, visual, and tactile) on the performance of the Iranian EFL students on the open-ended cloze. If the overall F-value probes significant the effect of types of sensory styles on the performance on the open-ended cloze test, then three post-hoc Scheffe's tests will be run to probe the minor research questions related to each of the above mentioned types of sensory styles.

The homogeneity of variances was the assumption of one-way ANOVA. The calculated Levene F of .63 shows the probability of .67. Since the probability of the associated Levene F is higher than significance level of .05, it can be concluded that the groups are homogeneous in terms of variances.

Then the F-observed value for the effect of the types of sensory styles on the performance of the Iranian EFL students on the open-ended cloze was calculated. It is 4.87 ($P = .000 < .05$). This amount of F-value is higher than the critical value of 2.26. Thus, it can be concluded that types of sensory styles have a significant effect on the performance of the Iranian EFL students on the open-ended cloze. Thus the major null-hypothesis as Iranian EFL students' types of sensory learning styles do not have any significant effect on their performance on the open-ended cloze test **is rejected**.

Table 2: Descriptive Statistics Open-Ended Cloze by Types of Sensory Styles

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
AUDITORY	30	18.60	4.166	.761	17.04	20.16	11	26
VISUAL	30	15.10	4.604	.841	13.38	16.82	7	24
TACTILE	30	14.33	4.830	.882	12.53	16.14	6	26

As displayed in Table 2, the mean scores for the auditory, visual, and tactile are 18.6, 15.1, and 14.33 respectively. Still it is unknown where the exact differences lay. Thus the post-hoc Scheffe's tests (Table 3) should be run in order to locate the exact place of differences between the three mean scores.

Table 3: Post-Hoc Scheffe's Tests Open-Ended Cloze

(I) STYLE	(J) STYLE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
AUDITORY	VISUAL	3.500	1.239	.164	-.67	7.67
	TACTILE	4.267*	1.239	.041	.10	8.44
VISUAL	TACTILE	-.767	1.239	.996	-4.94	3.40

Based on these results it can be concluded that:

(A) There is not any significant difference between the mean scores of the auditory and visual styles on the open-ended cloze. Thus the minor null-hypothesis as there is not any significant difference between the mean scores of the auditory and visual styles on the open-ended cloze **is supported**.

(B) There is a significant difference between the mean scores of the auditory and tactile styles on the open-ended cloze. Thus the minor null-hypothesis as there is not any significant difference between the mean scores of the auditory and tactile styles on the open-ended cloze **is rejected**.

(C) There is not any significant difference between the mean scores of the visual and tactile styles on the open-ended cloze. Thus the minor null-hypothesis as there is not any significant difference between the mean scores of the visual and kinesthetic styles on the open-ended cloze **is supported**.

In order to answer whether or not types of sensory learning styles have any significant effect on Iranian EFL learners' performance on the multiple-choice lexical test, a one-way ANOVA was used. If the overall F-value probes significant the effect of types of sensory styles on the performance on the multiple-choice lexical test, then three post-hoc Scheffe's tests will be run to probe the minor research questions related to each of the above mentioned types of sensory styles.

The homogeneity of variances is the assumption of one-way ANOVA. The computed Levene F of .47 has the probability of .76. Since the probability of the associated Levene F is higher than significance level of .05 it can be concluded that the groups are homogeneous in terms of variances. The F-observed value for the effect of the types of sensory styles on the performance of the Iranian EFL students on the multiple-choice lexical is 10.33 ($P = .000 < .05$). This amount of F-value is higher than the critical value of 2.26. Since the F-observed value is higher than its critical value it can be concluded that types of sensory styles have a significant effect on the performance of the Iranian EFL students on the multiple-choice lexical. Thus the major null-hypothesis as Iranian EFL students' types of sensory learning styles do not have any significant effect on their performance on the multiple-choice cloze test **is rejected**.

Table 4: Descriptive Statistics Multiple-Choice lexical by Types of Sensory Styles

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
AUDITORY	30	18.87	3.702	.676	17.48	20.25	11	26
TACTILE	30	16.23	4.584	.837	14.52	17.95	6	25
VISUAL	30	19.93	4.495	.821	18.25	21.61	11	28

As displayed in Table 4, the mean scores for the auditory, tactile, and visual learners are 18.87, 16.23, and 19.93 respectively. Although the F-value of 10.33 denotes significant differences between the mean scores of the three groups, the post-hoc Scheffe's tests (Table 5) should be run in order to locate the exact place of differences between the three mean scores.

Table 5: Post-Hoc Scheffe's Tests Multiple-Choice lexical

(I) STYLE	(J) STYLE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
AUDITORY	TACTILE	2.633	1.104	.342	-1.08	6.35
	VISUAL	-1.067	1.104	.967	-4.78	2.65
TACTILE	VISUAL	-1.81*	.326	.000	-2.59	-1.03

*. The mean difference is significant at the 0.05 level.

Based on these results it can be concluded that:

(A) There is not any significant difference between the mean scores of the auditory and tactile styles on the multiple-choice lexical test. Thus the minor null-hypothesis as there is not any significant difference between the mean scores of the auditory and tactile styles on the multiple-choice cloze **is supported**.

(B) There is not any significant difference between the mean scores of the auditory and visual styles on the multiple-choice lexical test. Thus the minor null-hypothesis as there is not any significant difference between the mean scores of the auditory and visual styles on the multiple-choice cloze **is supported**.

(C) There is any significant difference between the mean scores of the tactile and visual styles on the multiple-choice cloze. Thus the minor null-hypothesis as there is not any significant difference between the mean scores of the tactile and visual styles on the multiple-choice cloze **is rejected**.

4. CONCLUSION AND IMPLICATIONS

This study posed a question regarding the relationship between Iranian intermediate EFL learners' learning styles (namely, tactile, visual, and auditory) and their performance on the Open-ended cloze test, and Multiple-Choice Lexical Test. Learning styles have become more ubiquitous in second or foreign language teaching and research. Scholars (Claxton & Murrell, 1987 ; Felder, 1995; Gardner, 1983) almost unanimously agree that students learn best when they are relatively involved in the learning process and when they are in a learning situation that best meets their learning style needs.

Moreover, Kinsella (1995) and Dreyer (1998) believe that teachers teach the way they learn best; that is, their teaching styles reflect their learning style. This also sheds more lights

on the importance of the learning styles not only for the students, but also for the teachers. Lawrence (1996) states that a sign of a good teacher is her ability to flex teaching style to better fit the needs of those being taught. Therefore, what the teacher has to do first is to have an insight into her own learning style, and then try to find out new students' learning styles.

This study was conducted on male EFL learners at Shokouh English institute in Tehran. The students who took part in the study were of intermediate level, and were 15 to 25 years old. At the beginning of the study, a PET test was administrated to the participants to check the homogeneity of the group. The PET test was previously administrated to 30 other students, who were not part of the study, in order for the researcher to be able to discriminate items. Items which were too easy or too hard were removed from the final test. After selecting a similar sample of subjects, the participants were given a copy of Reid (1987) Perceptual Learning Style Preference Questionnaire (PLSPQ) questionnaire on learning style preferences, which was used to determine the learning style of the subjects. Then, the papers were scored and the subjects' learning style preferences were determined. And finally, the learners were given three tests; namely, open-ended cloze test, and multiple-choice lexical test, and the papers were then scored. The statistical procedure was done by using the statistical package of social sciences (SPSS) to accomplish the objective of the study.

Three one-way ANOVA was run to probe the effect of the types of sensory styles (auditory, tactile, and visual) on the performance of the Iranian EFL students on the open-ended cloze test, and multiple-choice lexical test.

In the first case, a one-way ANOVA was run to probe the effect of the types of sensory styles on the performance of the Iranian EFL students on the open-ended cloze. The Levene F of .63 had the probability of .67 ($F=.63$, $p=.67$, $p>.05$). Since the probability of the associated Levene F was higher than significance level of .05 it could be concluded that the groups are homogeneous in terms of variances. The F-observed value for the effect of the types of sensory styles on the performance of the Iranian EFL students on the open-ended cloze was 4.87 ($P = .000 < .05$). Therefore, the first major null-hypothesis as Iranian EFL students' types of sensory learning styles do not have any significant effect on their performance on the open-ended cloze test was rejected.

In the second case, another one-way ANOVA was used to probe the effect of the types of sensory styles on the performance of the Iranian EFL students on the multiple-choice Lexical test. The Levene F of .47 had the probability of .76 ($F=.47$, $p=.76$, $p>.05$). Since the probability of the associated Levene F is higher than significance level of .05, it can be concluded that the groups are homogeneous in terms of variance. The F-observed value for the effect of the types of sensory styles on the performance of the Iranian EFL students on the multiple-choice Lexical test is 10.33 ($P = .000 < .05$). Therefore, it can be concluded that the second major null-hypothesis as Iranian EFL students' types of sensory learning styles do not have any significant effect on their performance on the multiple-choice cloze test is rejected.

This research is not the end but the beginning. More studies are required to deepen our knowledge of different issues of learning styles. Such investigations should include other types of learning styles and different formats of tests as well as different gender.

REFERENCES

- Brown, L. B. (2003). Teaching Style vs. Learning Style: Myths and Realities. Available from Eric ED 482329 Retrieved December 22, 2008 <http://www.cete.org/acve>
- Chastain, K. (1988). *Developing Second Language Skills: Theory and Practice*. Florida: Harcourt Brace Jovanovich, Inc.
- Claxton, C. S., & Murrell, P. H. (1987). Learning styles: Implications for Improving Educational Practice *ASHE-ERIC Higher Education Report* (Vol. 4). Washington, DC: George Washington University.
- Davies, A. (1990). *Principles of Language Testing*. Oxford: Basil Blackwell.
- Davis, F. B. (1968). Research in comprehension in reading. *Reading Research Quarterly*, 3, 499-545.
- Dreyer, C. (1998). Teacher-student style wars in South Africa: The silent battle. *System*, 26, 115–126.
- Ellis, R. (1986). *Second language acquisition*. Oxford: OUP.
- Farhady, H., Jafarpour, A., & Birjandi, P. (1995). *Teaching language skills from theory to practice*. Tehran: SAMT.
- Felder, R. M. (1995). Learning and teaching style in foreign and second language education. *Foreign Language Annals*, 28(1), 21-31.
- Gardner, H. (1983). *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.
- Hayati, M. (2009). *The relationship between Iranian EFL learners' and teachers' learning styles and its effect on the learners' language achievement*. (MA), Islamic Azad University, Central Branch, Tehran.
- Heaton, J. B. (1990). *Longman Keys to Language Teaching: Classroom Testing*. New York: Longman Publishing.
- Hughes, A. (1996). *Testing for language teachers*. Cambridge: Cambridge University Press.
- Hughes, A. (2002). *Testing for language teachers*. Cambridge: Cambridge University Press.
- Kinsella, K. (1995). Understanding and empowering diverse learners. In J. Reid (Ed.), *Learning styles in the ESL/EFL classroom* (pp. 170-194). Boston: Heinle.
- Lawrence, G. (1996). *People Types and Tiger Stripes* (3 ed.). Gainesville: Center for Application of Psychological Type.
- McDonough, S. (2002). *Applied Linguistics in Language Education*. Oxford: OUP.
- Mills, A., Swain, L., & Weschler, R. (1996). The implementation of a first year English placement system. *Internet TESOL Journal*, 2(11).
- Reid, M. J. (1987). The learning style preferences of ESL students. *TESOL Quarterly*, 21(1), 87-111.
- Spolsky, B. (1978). *Approaches to language testing: Advances in language testing series*. Arlington: Center For Applied Linguistics.

Appendix A: Questionnaire

Perceptual Learning Style Preferences Questionnaire or PLSPQ

Directions:

People learn in many different ways, for example, some people learn primarily with their eyes (visual learners) or with their ears (auditory learners); some people prefer to learn by experience and/or by “hands-on” tasks (kinesthetic or tactile learners); some people learn better when they work alone, while others prefer to learn in groups. This questionnaire has been designed to help you identify the way(s) you learn best- the way(s) you *prefer* to learn. Read each statement on the following pages. Please respond to the statement AS THEY APPEAL TO YOUR STUDY OF ENGLISH. Decide whether you agree or disagree with each statement. Please respond to each statement quickly, without too much thought. Try not to change your responses after you choose them. Please use a pen to mark your choices.

Questionnaire Statements:	Strongly agree	agree	undecided	disagree	Strongly disagree
1. When the teacher tells me the instructions, I understand better.					
2. I prefer to learn by doing something in class.					
3. I get more work done when I work with others.					
4. I learn more when I study in a group.					
5. In class, I learn best when I work with others.					
6. I learn better by reading what the teacher writes on the chalkboard.					
7. When someone tells me how to do something in class, I learn better.					
8. When I do things in class, I learn better.					
9. I remember things I have learned in class better than things I have read.					
10. When I read instructions, I remember them better.					
11. I learn more when I can make a model of something.					
12. I understand better when I read instructions.					

13. When I study alone I remember things better.					
14. I learn more when I make something for a class project.					
15. I enjoy learning in class by doing experiments.					
16. I learn better when I make drawings as I study.					
17. I learn better in class when the teacher gives a lecture.					
18. When I work alone, I learn better.					
19. I understand things better in class when I participate in role playing.					
20. I learn better in class when I listen to someone.					
21. I enjoy working on an assignment with two or three classmates.					
22. When I build something, I remember what I have learned better.					
23. I prefer to study with others.					
24. I learn better by reading that by listening to someone.					
25. I enjoy making something for a class project.					
26. I learn best in class I can participate in related activities.					
27. In class, I work better when I work alone.					
28. I prefer working on projects by myself.					
29. I learn more by reading textbooks than by listening to lectures.					
30. I prefer to work by myself.					