

## **The Relationship between learning style preferences and Academic Achievement of English Majors at Al-Aqsa University in Gaza, Palestine**

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### **Abstract**

This study aims to investigate the relationship between the learning style preferences, and academic achievement of third year English majors at Al Aqsa University in Gaza, Palestine. A total of 60 students were asked to complete a questionnaire to identify their perceptual learning style preferences. In addition, an achievement test was held to determine the students' academic level in English and the results were correlated with the learning style preferences. The findings showed that the top two learning styles preferred were kinesthetic, 90.27% and tactile learning 82.27% respectively. The other learning styles preferred in decreasing popularity were the group learning style 79.80%, visual style 78.80%, auditory style 78.60% and individual learners 54.73%. Moreover, there were statistically significant differences between males and females in visual, auditory, individual learning, and group learning, and there were no statistically significant differences between males and females in kinaesthetic and tactile. Furthermore, there was a significant correlation between achievement and auditory style, but there was no significant correlation between achievement and visual, kinaesthetic, tactile, group learning, and individual learning. The paper ends with a discussion of some pedagogical implications of the findings on tertiary education in the local context.

Keywords: learning style preferences, academic achievement, English majors.

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### **1. Introduction**

Due to the immature development of in-depth research of learning styles and learning strategies in Palestine, and particularly in the Gaza Strip, there has always been poor or absence of information on the kind of learning styles by the Palestinian students particularly in learning a foreign language (Jhaish, 2010). Hence, the efforts of the educational system to identify learners' styles to employ these information in developing these strategies, failed to create a basis for a solid learning styles among our students, and consequently, affecting their academic achievement.

Of particular interest to the researcher for the present study is the perceptual learning style defined as a preference for one of the following learning modalities - auditory, visual or tactile (Jhaish, 2010). According to Sarasin (1998), the perceptual perspective allows us to take into account aspects of several well-recognized learning-style theories by synthesizing their important characteristics into an approach that is based on behaviors and/or actions that can be easily perceived in a classroom situation. Sarasin claims that aspects of the learning style theories of Gregorc (1995), and Harb, Durrant & Terry (1993) reflect an approach based on the primary senses (visual, auditory or tactile) involved in learning.

As the name suggests, visual style refers to a preference for learning through vision, and visual learners rely on their sight to take in information. They organize knowledge in terms of spatial interrelationships among ideas and store it graphically (Nilson, 2003).

Learners who prefer the auditory style learn through hearing or listening to things. They learn best when they can hear themselves express an idea (Nilson, 2003).

Tactile learners prefer to learn by doing and by touching. They learn best by being active, and they often rely on physical interaction in order to master a concept (Sarasin, 1998).

There are differences in the components that make up each one. For example, in the category of perceptual learning styles, Dunn, Dunn & Price (1975) include visual, tactile and kinesthetic. Keefe (1979) uses kinesthetic-psychomotor, visual-spatial and auditory-verbal. O'Brien's (1989) components are visual and haptic (a combination

of tactile and kinesthetic), while James & Galbraith (1985) include print visual and interactive (verbalization and olfactory). Reid's (1995) perceptual learning style includes visual, auditory, tactile, kinesthetic, group and individual learning styles.

Reid's Perceptual Learning Style Preference Questionnaire generally has high reliability and validity and has been used as the norm on non-native speakers; a recent study (Isemonger & Sheppard, 2007) which examined the factor structure of a Korean version of Reid's questionnaire showed reliability estimates were not good. Reid suggests that educators use learning-style instruments with caution and calls for multidimensional learning style instruments, which can provide a profile of student learning styles.

### **Studies Pertaining to Learning Styles**

Because learning styles have a wide range of dimensions and since a lot of variables affect them, there are several problems proposed by Tyacke (1998) encountered while identifying learning styles. The first one is that learning styles are complex in nature and it might be difficult to analyze the overall learning profile of a learner. Another problem is that learners might tend to use different learning styles in various learning contexts. The third problem proposed is that the methodology used in the transfer of information can be biased. That is, it might be in favour of one kind of learner (analytic) over another (global). Yet, the researchers have worked on and identified the learning styles of learners in relation to some variables such as age, sex, length of time in the target culture, field of study, level of education, and culture (Jhaish, 2010).

Reid (1987) conducted a research with respect to the learning style preferences of ESL learners. The overall results of the research indicated that ESL learners strongly preferred kinaesthetic and tactile learning styles when compared to audio and visual. In addition, most groups showed a negative preference for group learning.

Stebbins (1995) replicated Reid's (1987) study in order to obtain more information about the similarities and differences in learning styles between ESL learners and Native English Speakers (NESs). Stebbins lists the areas in which the results paralleled with Reid's results. He proved that kinaesthetic and tactile learning styles were strongly preferred by ESL students when compared to NESs. Moreover, group learning was again chosen as the least preferred mode by most NESs and ESL students; the only sample group in the current study to indicate a preference for the group learning mode were those ESL students with low (300-349) TOEFL scores.

### **Studies that link learning styles to student achievement**

What has given rise to increasing interest in learning styles is that research points to the relationship between learning styles and teaching styles as being a factor in the success of postsecondary students (Dunn et al., 1995; Ellis, 1989; Griggs & Dunn 1996; Hall & Moseley, 2005). According to Cassidy (2004), the interest shown in the impact of learning styles on academic achievement demonstrates that research has made a move beyond investigating the traditional variables such as intelligence and motivation in an attempt to shed light on factors that affect academic success.

Entwistle (qtd. in Drysdale et al. p 272) has shown that academic success and failure in higher education is influenced by "the match between how material is presented and how students process it". Nelson et al. (qtd. In Drysdale et al.) found a correlation between learning style and increased levels of academic achievement. Dunn et al. (qtd. in Drysdale et al.) found that making students aware of their learning style and helping them develop study skills compatible with their preferred learning style had a positive effect on academic performance. In a similar vein, O'Brien (1991), whose subjects represented a variety of majors including business, education, arts and sciences, found that differences in learning styles were associated with academic achievement. Based on the results of a meta-analysis of 42 experimental studies, Dunn et al. (1995) claim that students who are taught by an approach compatible with their learning do better than those whose learning styles are not matched to teaching approaches. In a similar vein, Griggs and Dunn (1996) claim that students who learn from an approach compatible with their preferred learning style experience greater academic achievement and have a more positive attitude towards learning.

Drysdale et al. (2001) carried out a study on the effect of learning style on the academic performance of 4,546 first-year students. Although they found academic performance based on learning style to be significant in 11 of the 19 courses, they found no significant differences between the learning style and academic performance of liberal arts and social sciences' students. Castro and Peck (2005) carried out a study on learning styles and learning difficulties that foreign language students face at the college level and claim that a student's preferred learning style can help or hinder success in the foreign language classroom. However, when they analyzed the distribution of grades according to Kolb's learning style types, they found no significant correlation between learning style and grades. Similarly, Tight's (2007) study of English college students learning Spanish showed that students performed equally well on vocabulary tests regardless of perceptual learning style preference.

## **2. Methodology**

This was a descriptive study based on a survey research. The study aimed to identify students' perceptual learning styles, to find out whether there were any differences between male and female students with respect to their learning style preferences, and most importantly to investigate the relationship between the learning style and the academic achievement among the English majors at Al Aqsa University. The study was conducted in the first semester in the academic year 2009-2010 at Al Aqsa University in Khan Yunis. Gaza, Palestine.

### **2.1. Research questions**

1. What are the major, minor, and negligible perceptual modality preferences of the students audio, visual, kinaesthetic, tactile, group learning, and individual learning of the participants?
2. Is there a difference in the perceptual modality preferences of the students based on their sex?
3. Is there a relationship between the students' perceptual learning style preferences and their academic achievement?

### **2.2. Participants**

The sample of the study consisted of (60) students with (27.3%) from the total of (224) were stratified and randomly chosen as a purposive sample from of the third year English majors at Al Aqsa University (2009\_2010). The sample was distributed according to gender variable into 30 male and 30 female participants.

### **2.3. Data collection**

Perceptual Learning Style Preference Questionnaire (PLSPQ) developed by Reid (1987). It is a self-reporting questionnaire developed on the basis of existing learning style instruments with some changes suggested by non-native speaker informants and US consultants in the field of linguistics. The questionnaire, which was designed and validated for non-native speakers, consists of five statements on each of the six learning style preferences to be measured: visual, auditory, kinaesthetic, tactile, group learning, and individual learning.

The first four categories constitute the perceptual learning style categories and the remaining two make up the social category. The participants responded on the basis of a five point Likert scale, ranging from strongly agree to strongly disagree.

In order to know the students, achievement in the English language the researcher designed an achievement test for this reason. Having collected the quantitative data, based on the results obtained from the questionnaire students were asked to do the achievement test to correlate their results with their learning styles and learning strategies.

### **2.4. Data analysis**

The first question is: What are the major, minor, and negligible perceptual modality preferences of the students – audio, visual, kinaesthetic, tactile, group learning, and individual learning of the participants?

To answer this question the researcher used the frequencies, the sum of responses, means, standard deviation, and the % weight and the rank of each item in the Learning Style Questionnaire as shown in the following table:

No.	Strategies	Sum	Mean	Std. dev	% weight	Rank in scope	General rank
<b>Visual</b>							
6	I learn better by reading what the teacher writes on the chalkboard.	255	4.250	0.628	85.00	2	11
10	When I read instructions, I remember them better	232	3.867	0.747	77.33	3	19
12	I understand better when I read instructions.	256	4.267	0.841	85.33	1	10
24	I learn better by reading than listening to someone.	220	3.667	0.877	73.33	4	22
29	I learn more by reading textbooks than by listening to a lecture.	219	3.650	1.071	73.00	5	23
<b>Auditory</b>							
1	When the teacher tells me the, instructions I understand better.	260	4.333	0.601	86.67	2	9
7	When someone tells me how to do something in class, I learn it better.	242	4.033	0.736	80.67	3	16
9	I remember things I have learned in class better than things I have read.	270	4.500	0.770	90.00	1	4
17	I learn better in class when the teacher gives a lecture.	225	3.750	0.985	75.00	4	20
20	I learn better in class when I listen to someone.	182	3.033	1.089	60.67	5	26
<b>Kinesthetic</b>							
2	I prefer to learn by doing something in class.	280	4.667	0.510	93.33	1	1
8	When I do things in class, I learn better.	274	4.567	0.698	91.33	2	2
15	I enjoy learning in class by doing experiments.	262	4.367	0.551	87.33	5	6
19	I understand things better in class when I participate in role-playing.	271	4.517	0.813	90.33	3	3
26	I learn best in class when I participate in related activities.	267	4.450	0.769	89.00	4	5
<b>Tactile</b>							
11	I learn more when I can make a model of something.	261	4.350	0.777	87.00	2	8
14	I learn more when I make something for a class project.	244	4.067	0.710	81.33	3	14
16	I learn better when I make drawings as I study.	223	3.717	0.904	74.33	5	21
22	When I build something, I remember what I learned better.	262	4.367	0.802	87.33	1	7
25	I enjoy making something for a class project.	244	4.067	1.006	81.33	3	15
<b>Group learning</b>							
3	I get more work done when I work with others.	250	4.167	1.011	83.33	1	12
4	I learn more when I study with a group.	249	4.150	1.102	83.00	2	13
5	In class, I learn best when I work with others.	240	4.000	0.823	80.00	4	18
21	I enjoy working on an assignment with two or three classmates.	241	4.017	1.142	80.33	3	17
17	I prefer to study with others.	217	3.617	1.166	72.33	5	24
<b>Individual</b>							
13	When I study alone, I remember things better.	214	3.567	0.998	71.33	1	25
18	When I work alone, I learn better.	160	2.667	1.481	53.33	2	27
27	In class, I work better when I work alone.	157	2.617	1.563	52.33	3	28
28	I prefer working on projects by myself.	142	2.367	1.327	47.33	5	30
30	I prefer to work by myself.	148	2.467	1.455	49.33	4	29

**The sum of responses, means, std. deviation and the % weight and rank of each scope from the whole questionnaire**

No.	Strategies	No. items	Sum	Mean	Std. dev	% weight	rank
1	VISUAL	5	1182	19.700	2.028	78.80	4
2	AUDITORY	5	1179	19.650	2.328	78.60	5
3	KINAESTH	5	1354	22.567	2.053	90.27	1
4	TACTILE	5	1234	20.567	2.061	82.27	2
5	GROUPLEA	5	1197	19.950	3.495	79.80	3
6	INDIVIDU	5	821	13.683	5.193	54.73	6
	SUM	30	6967	116.117	7.497	77.41	

### The answer of the second Question:

Are there any statistically significant differences in the perceptual modality preferences of the students based on their sex?

To answer this question descriptive statistics were used to group the students according to their major, minor, and negligible learning style preference categories. A t-test was conducted to identify whether there was significant difference in the learning style preference between males and females.

variable	Sex	No	Mean	Std. dev	t	Sig. value	Sig. level
VISUAL	Male	30	19.167	1.206	2.095	0.041	sig. at 0.05
	Female	30	20.233	2.515			
AUDITORY	Male	30	18.900	2.398	2.617	0.011	sig. at 0.05
	Female	30	20.400	2.027			
KINAESTH	Male	30	22.833	2.019	1.006	0.319	not sig.
	Female	30	22.300	2.087			
TACTILE	Male	30	20.900	1.989	1.259	0.213	not sig.
	Female	30	20.233	2.112			
GROUPELA	Male	30	21.500	2.596	3.808	0.000	sig. at 0.01
	Female	30	18.400	3.626			
INDIVIDU	Male	30	11.733	4.934	3.116	0.003	sig. at 0.01
	Female	30	15.633	4.760			
SUM	Male	30	115.033	7.586	1.122	0.267	not sig.
	Female	30	117.200	7.374			

### The answer of the third Question:

Is there a relationship between the students' learning style and the students' academic achievement?

The following table shows the Correlation between students' learning style and the academic achievement among the English majors at Al Aqsa University.

Strategies	Reading	Grammar	Synonyms	Writing	Achievement
VISUAL	0.228	0.055	0.142	-0.043	0.132
AUDITORY	0.167	0.374**	0.317*	-0.022	0.327**
KINAESTH	0.138	0.148	0.237	0.163	0.237
TACTILE	0.090	0.092	0.225	0.141	0.193
GROUP LEARNING	-0.208	-0.152	-0.027	0.113	-0.097
INDIVIDU	0.047	0.244	0.253*	0.026	0.229
SUM	0.112	0.295*	0.426**	0.135	0.369**

### 3. Results and discussion

In order to answer the first research question, the data obtained from the learning styles questionnaire mentioned above were analyzed. Based on the cut off points stated in the scoring sheet of the questionnaire, it was found that it seemed that only the mean scores of two learning style preference categories, (kinesthetic and tactile learning, being 22.567 (90.27%) and 20.567 (82.27%) respectively, fall into the major learning style preferences category. The third rank was occupied by the group learning style with percent weigh 79.80. The fourth rank was the visual style. (minor learning style) with percent weigh 78.80 .The fifth rank was for the auditory style.(minor learning style) with percent weigh 78.60. The sixth rank which is the (negligible learning style) preferences was for the individual learners with percent weight 54.73.

When the findings of some other studies in the field with the purpose of identifying learning style preferences are compared with the finding of this study, it can be stated that they seem to be partly relevant. Cheng and Banya (1995) found that the participants in their study preferred the perceptual learning styles of kinaesthetic and Tactile, and. The findings of the study seem to be compatible with the ones identified by Cheng and Banya, except for the individual learner learning, which was placed into the negligible learning category in this study.

Another parallelism was found with one of Reid's (1987) findings. She stated that most groups in her study showed a negative preference for individual learner learning. Similarly, the participants of this study also showed a congruous result.

Rossi (1995) conducted another study in which she focused on the perceptual learning styles of adult immigrant learners and she investigated the relationship between preferred learning styles and strategy preference in an ESL context. Her findings showed that the major learning style preferences of the majority of the participants were the tactile and kinaesthetic learning styles, which require a practical and experiential approach to learning. Another parallelism in her study was found with individual learning which showed to be a minor learning style.

Concerning the second research question we can see there are statistically significant differences between male and female in visual, auditory, individual learning, towards female, and in Group learning towards male, and there are no statistically significant differences between male and female in kinaesthetic, tactile and summation degree .

Referring back to the findings of the studies in the literature, it was found that the results of this study are in parallel with Reid's (1987) results. She concluded that there was difference in the use of the visual auditory and individual learning style category between males and females, but contrasted with her results that males being more tactile than females.

Concerning the third question, the researcher used person correlation. The results showed the presence of correlation between students' learning style and the academic achievement .It was found that there are statistically significant correlation coefficient between the academic achievement and auditory learners. This result matches with Cheng and Banya (1998) who conducted a study on their students and the results showed that the students with the Individual preference style use more language learning strategies, and they are less tolerant of ambiguity, and this leads to more academic achievement.

The findings also showed that there are no statistically significant correlation coefficient between achievement, visual, kinaesthetic, tactile, group learning, and individual learning.

#### **4. Conclusion**

**On the basis of this study, the researcher concluded the following:**

The results obtained from analyzing the PLSQ showed that the student had major ,minor and negligible learning styles.

There were statistically significant differences between male and female in visual, auditory, individual learning, towards female, and in Group learning towards male, and there are no statistically significant differences between male and female in kinaesthetic, tactile and summation degree.

There were statistically significant correlation coefficient between achievement and auditory and total degree of style. and there were no statistically significant correlation coefficient between achievement, and visual, kinaesthetic, tactile, group learning, and individual learning among the students.

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