

The Relationship Between EFL Students' Perceptual Learning Styles and Their Language Learning Strategies in Saudi Arabia

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Received: November 11, 2018 Accepted: December 10, 2018 Online Published: December 27, 2018

doi:10.5539/ijel.v9n1p69 URL: <https://doi.org/10.5539/ijel.v9n1p69>

Abstract

This study investigated the relationship between EFL students' Perceptual Learning Styles (PLS) and their Language Learning Strategies (LLS). A group of (155) college-level EFL students in Saudi Arabia was surveyed. Reid's learning styles model was employed to identify the participants' PLS. Oxford's language learning strategies model was used to identify the participants' LLS. The study's results showed that the most preferred learning styles among students were *kinesthetic*, *auditory*, and *group* PLS respectively. It was also found that the most frequently used language learning strategies among students were *metacognitive*, *social*, and *cognitive* LLS respectively. The study revealed a statistically significant relationship between participants' perceptual learning styles and their language learning strategies.

Keywords: EFL, TESL, TEFL, Perceptual Learning Styles (PLS), Language Learning Strategies (LLS), Perceptual Learning Style Preference (PLSP), Strategy Inventory of Language Learning (SILL)

1. Introduction

Research on EFL has shifted from teacher-centered to student-centered studying the learning process rather than the learning product, and focusing on the behavior of students rather than the behavior of teachers. EFL learning is significantly influenced by several variable such as gender, age, culture, academic major, career orientation, personal beliefs, learning styles, and learning strategies. Individual differences such as students' perceptual learning styles and their language learning strategies have also gained a lot of attention (Ellis, 1982; Taylor, 1983, Lessard-Clouston, 1997, Nguyen & Godwyll, 2010). Many researchers considered learning styles (PLS) and language learning strategies (LLS) as vital factors that could maximize students' learning performance and affect their learning outcomes. They argued that learning styles have a strong influence on learning strategies and proposed that a deep understanding of learning styles and strategies would enable both students and teachers to enhance learning performance and outcomes (Ehrman & Oxford, 1989; Rossi-Le, 1989; Reid, 1995; Herod, 2000; Oxford, 2001; Chiya, 2003; Wang, 2012).

1.1 Statement of the Problem

Little attention has been given to the relationship between students' PLS and their LLS in the EFL Saudi classrooms. The aim of this study was to identify students' learning styles, pinpoint students' language learning strategies, and investigate the relationship between students' perceptual learning styles and their language learning strategies in order to better understand the factors that affect their language learning.

1.2 Purpose of the Study

Learning styles and language learning strategies play a major role in language learning; therefore, this study addressed the following research questions:

- 1) What are the most preferred learning styles among EFL students?
- 2) What are the most frequently used language learning strategies among EFL students?
- 3) Is there a significant relationship between EFL students' perceptual learning styles and their language learning strategies?

1.3 Significance of the Study

Perceptual learning styles and language learning strategies are considered two important factors which can determine successful EFL learning (Chiya, 2003). Identifying EFL students' learning styles and language strategies (Reid, 1987) and understanding the relationship between them (Zhou, 2004) may yield useful implications in curriculum design, student performance, and teacher training. An ideal EFL teacher should be aware of students' learning styles and their language learning strategies (Cohen & Macaro, 2007).

This study might prove useful for teachers as it could help them understand the factors that account for some of the differences in how students learn. It could also help teachers understand how and why PLS and LLS should be implemented in language instruction. The results of this study could also encourage teachers to use various teaching methods and materials in order to engage all their students in class activities, accommodate their preferences and differences, and address their needs and challenges for successful language learning. EFL teachers need to raise their awareness about their students' PLS and LLS in order to understand these individual differences and produce active learners.

2. Literature Review

2.1 Perceptual Learning Styles (PLS)

Keefe (1979) defined *Perceptual Learning Styles* as the cognitive, emotional and physiological behaviors that indicate how learners perceive, interact with, and respond to the learning environment. Oxford, Ehrman, and Lavine (1991) described PLS as general approaches used by students in order to learn a new subject or to cope with a new problem. According to Oxford (2001), PLS are "not dichotomous (black or white, present or absent), but generally operate on a continuum or multiple, interesting continua" (p. 3). There is no one right way to learn a language (Herod, 2000), and students have personal differences that have potential effects on their language process, performance, and outcomes (Ellis, 1994). All these definitions agreed that PLS are general approaches to learning that affect how students acquire knowledge. This implies that students learn differently and prefer to be taught accordingly. Kolb (1984) claimed that different people naturally prefer different learning styles, which are influenced by various cognitive, social, and educational factors. Similarly, Gardner and Hatch (1989) asserted that students have different intelligences. Some students may perform well in some subjects but poorly in others.

Several modalities and classifications of learning styles have been proposed (Dunn & Dunn, 1978; Gregorc, 1979; Kolb, 1984; Reid, 1987; Oxford, Ehrman, & Lavine, 1991). Dunn and Dunn (1978) identified five key dimensions on which student learning styles differed: 1) *environmental* (light, sound, temperature, and design); 2) *emotional* (structure, persistence, motivation, and responsibility); 3) *sociological* (pairs, peers, adults, self, and group); 4) *physiological* (auditory, visual, tactile, kinesthetic, intake, time of day, and mobility); and 5) *psychological* (global-analytic, impulsive-reflective, and left-right brain).

According to Gregorc (1979), two major processes are involved in learning: *perceiving information* (concrete or abstract) and *ordering information* (sequential or random). Therefore, learners have four different learning styles: (1) *Concrete Sequential* (CS) in which learners prefer learning with structured, step-by-step approach, specific schedules, stated requirements, and clear expectations; (2) *Concrete Random* (CR) in which learners favor hands-on experiences, problem-solving, brainstorming, and innovative thinking; (3) *Abstract Sequential* (AS) in which learners like formulating theories and conducting research; (4) *Abstract Random* (AR) in which learners prefer working in groups, interacting with others, and discussing tasks.

Kolb (1984) developed the Learning Style Inventory (LSI) to assess individual learning styles. According to Kolb, the learning cycle consists of four processes: (1) *Concrete Experience* (CE) in which learners favor experiential learning; (2) *Abstract Conceptualization* (AC) in which learners prefer analytical thinking; (3) *Active Experimentation* (AE) in which learners like doing and trial-and-error learning; (4) *Reflective Observation* (RO) in which learners favor reflecting before acting.

Reid (1987) classified learning styles into six main modalities:

- 1) *Visual*: in which learners depend on their eyes to enhance their learning, prefer reading text and infographs, watching videos, pictures, and other visual aids.
- 2) *Auditory*: in which learners depend on their ears to learn most effectively, prefer listening to lectures and audiotapes and talking about the materials presented to them rather than reading them.
- 3) *Kinesthetic*: in which learners prefer using their whole body while learning, love acting and athletics, and are easily frustrated with visual or audible materials only.

- 4) *Tactile*: in which learners favor hands-on activities and experiments, learn best when through the sense of touch, and are easily distracted with visual or audible materials only.
- 5) *Group*: in which learners learn more effectively through working with others.
- 6) *Individual*: in which learners learn more effectively through working alone.

2.2 Language Learning Strategies (LLS)

Ellis (1994) defined *Language Learning Strategies* as “learners’ attempts to master new linguistic and sociolinguistic information about the target language” (p. 530). Chamot (1987) described LLS as “techniques, approaches, or deliberate actions that students take in order to facilitate the learning and recall of both linguistic and content area information” (p. 71). Oxford (1990) postulated that LLS are “specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations” (p. 8).

Oxford (1990) identified six major groups of language learning strategies:

- 1) *Memory Strategies*: used for remembering and retrieving new information, such as: creating mental linkages; applying images and sounds; reviewing well; employing action.
- 2) *Cognitive Strategies*: used for understanding and producing the language, such as: practicing; receiving and sending messages; analyzing and reasoning; creating structure for input and output.
- 3) *Compensation Strategies*: used for using the language despite lack of knowledge, such as: guessing intelligently; overcoming limitations in speaking and writing.
- 4) *Metacognitive Strategies*: used for coordinating the learning process, such as: centering one's learning; arranging and planning one's learning; evaluating one's learning.
- 5) *Affective Strategies*: used for regulating emotions, such as: lowering one's anxiety; encouraging oneself; taking one's emotional temperature.
- 6) *Social Strategies*: used for learning with others, such as: asking questions; cooperating with others; empathizing with others.

2.3 Relationship between Perceptual Learning Styles (PLS) and Language Learning Strategies (LLS)

Several researchers investigated the relationship between perceptual learning styles and language learning strategies in different cultural contexts and found a strong correlation between PLS and LLS. Oxford (2001) asserted that “language learning styles and strategies are among the main factors that help determine how—and how well—our students learn a second or foreign language” (p. 359). Reid (1995) pointed out that students could maximize their potential for learning when they develop an understanding of their own learning environments and styles. Ehrman and Oxford (1989) employed the Strategy Inventory of Language Learning (SILL) and found a strong relationship between concrete learners and memory strategies, intuitive learners and compensation strategies, thinking learners and metacognitive strategies, and feeling learners and social strategies. Rossi-Le (1989) examined the relationship between learning style preferences and language learning strategies and discovered a significant relationship between learning styles and language learning strategies.

Muniandy and Shuib (2016) identified the PLS and LLS of Malaysian learners and revealed a significant correlation between auditory learning style and social strategies. Farajolahi and Nimvari (2014) investigated the relationship between PLS and LLS among Iranian EFL learners and found a significant relationship between the visual style and affective strategies, the auditory style and metacognitive strategies, the kinesthetic style and cognitive strategies, the tactile style and cognitive strategies, the individual learning style and metacognitive strategies, and the group style and metacognitive strategies. Balci (2017) examined the relationship between PLS and LLS among Turkish freshman students and reported significant correlations between the kinesthetic learning style and the use of memory, cognitive, compensation, metacognitive, and social language learning strategies. In addition, the auditory learning style revealed a significant relationship with the use of memory, cognitive, compensation, metacognitive, affective, and social language learning strategies. The study also showed significant positive correlations between the visual learning style and the use of memory, cognitive, compensation, metacognitive, affective, and social language learning strategies. Alkahtani (2016) investigated the relationship between EFL Saudi students’ learning styles and their language strategies and found significant correlations between PLS and LLS. Another study by Alkhatai (2011) observed the learning styles of EFL Saudi college-level students in online and traditional learning environments and found a significant relationship between the students’ learning styles and their satisfaction and success. Al-Hebaishi (2012) explored the relationship between PLS and LLS among female EFL Saudi students and revealed a significant relationship

between the visual learning style and memory strategies and between the visual learning style and affective strategies.

3. Method

3.1 Research Design

This study was designed to investigate the relationship between students' perceptual learning styles and their language learning strategies in order to better understand the factors that affect their language learning. Therefore, the study identified the most frequently used PLS and LLS among EFL students and examined the relationship between their PLS and LLS. The collected data was analyzed using the Statistical Package for Social Sciences (SPSS) software. Descriptive statistics (frequency distributions, percentages, means, and standard deviations) were computed. Pearson correlation was used to investigate the relationship between participants' PLS and their LLS.

3.2 Participants & Data Collection

Data was collected from a sample of (155) college-level EFL students in Saudi Arabia. Two instruments were used to examine the participants' perceptual learning styles and language learning strategies:

The Perceptual Learning Style Preference (PLSP) which was developed by Ried (1987) for adult, non-native speakers of English to identify the participants' perceptual learning styles. It consisted of 30 items for six learning style categories (*visual, auditory, kinesthetic, tactile, group, and individual* learning). The participants responded on the basis of a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree". Five points were given for "Strongly agree", four points for "Agree", three points for "Undecided", two points for "Disagree", and one point for "Strongly disagree".

The Strategy Inventory of Language Learning (SILL) which was developed by Oxford (1991) for adult, non-native speakers of English to identify the participants' language learning strategies. It consisted of 50 items for six language learning strategies (*memory, cognitive, compensation, metacognitive, affective, and social* strategies). The participants responded on the basis of a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree". Five points were given for "Strongly agree", four points for "Agree", three points for "Undecided", two points for "Disagree", and one point for "Strongly disagree".

3.3 Validity and Reliability

The Perceptual Learning Style Preference (PLSP) instrument has been widely employed in previous studies to identify participants' perceptual learning styles. The Cronbach's alpha reliability coefficients of the PLSP instrument indicated a high level of internal consistency as described in (Table 1).

Table 1. Cronbach's alpha reliability coefficients for PLSP

Variable	Number of Items	Alpha
Visual	5	0.69
Auditory	5	0.70
Kinesthetic	5	0.76
Tactile	5	0.74
Group	5	0.80
Individual	5	0.76
ALL	30	0.92

The Strategy Inventory of Language Learning (SILL) instrument has been extensively adopted in previous research to identify participants' language learning strategies. The Cronbach's alpha reliability coefficients of the SILL instrument indicated a high level of internal consistency as described in (Table 2).

Table 2. Cronbach's alpha reliability coefficients for SILL

Variable	Number of Items	Alpha
Memory	9	0.80
Cognitive	14	0.83
Compensation	6	0.72
Metacognitive	9	0.79
Affective	6	0.70
Social	6	0.82
ALL	50	0.95

4. Results

4.1 What Are the Most Preferred Learning Styles Among EFL Students?

Examining participants' learning styles (Figure 1) showed that the *kinesthetic* ($M=4.32$), the *auditory* ($M=3.81$), and the *group* ($M=3.65$) were the most preferred PLS respectively, whereas the *visual* ($M=2.85$) and the *individual* ($M=2.52$) learning styles were the least favored PLS among participants.

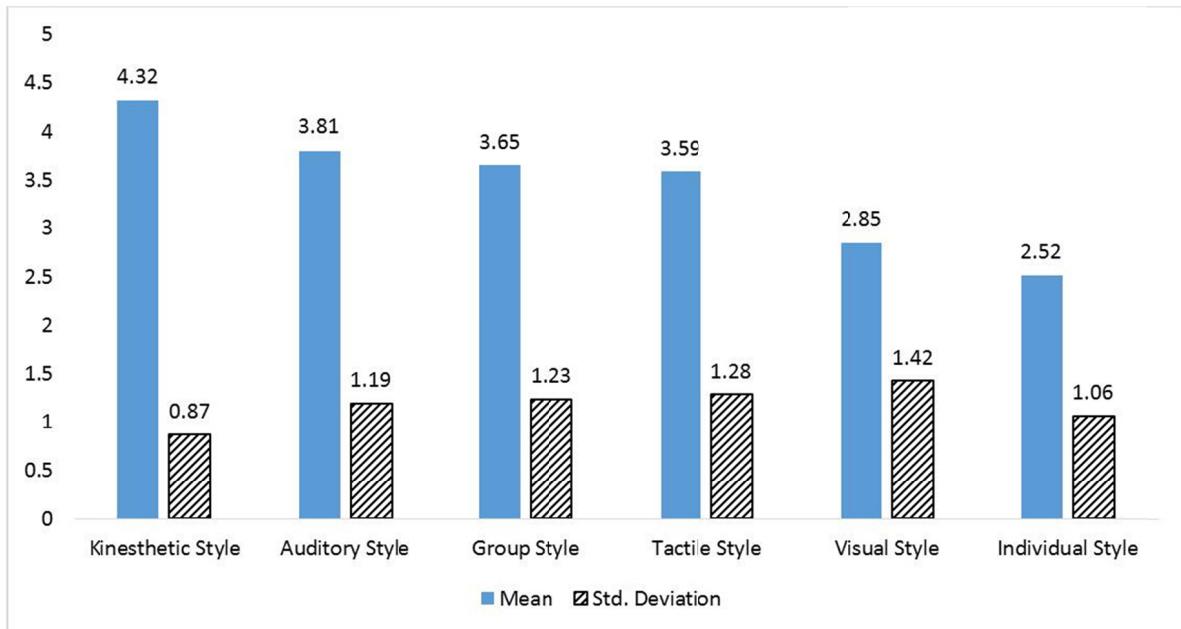


Figure 1. Descriptive statistics for participants' Perceptual Learning Styles (PLS)

4.2 What Are the Most Frequently Used Language Learning Strategies Among EFL Students?

Investigating language learning strategies (Figure 2) revealed that the participants preferred *metacognitive* strategies ($M=4.48$), *social* strategies ($M=3.66$), and *cognitive* strategies ($M=3.22$) respectively, whereas *affective* strategies ($M=1.76$) and *memory* strategies ($M=1.63$) were the least frequently used LLS.

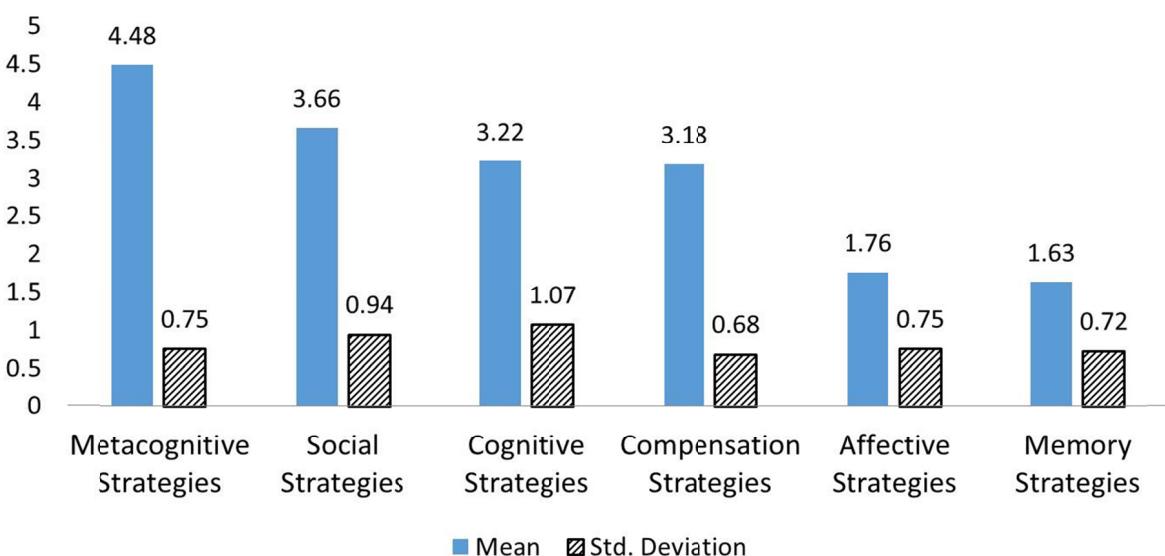


Figure 2. Descriptive statistics for participants' Language Learning Strategies (LLS)

4.3 Is There a Significant Relationship Between EFL Students' Perceptual Learning Styles and Their Language Learning Strategies?

Pearson Correlation Coefficients analysis was computed to determine whether there was a statistically significant relationship between participants' perceptual learning styles and their language learning strategies. As shown in Table 3, the analysis revealed that the *visual* learning style correlated significantly with *cognitive* strategies ($r = .616$, $p = .000$), *metacognitive* strategies ($r = .539$, $p = .000$), and *affective* strategies ($r = .504$, $p = .000$). The correlation analysis also showed that the *auditory* learning style correlated significantly with *compensation* strategies ($r = .268$, $p = .001$), *metacognitive* strategies ($r = .246$, $p = .002$), and *social* strategies ($r = .529$, $p = .000$). The *kinesthetic* learning style was also found to correlate significantly with *memory* strategies ($r = -.206$, $p = .010$), *cognitive* strategies ($r = .502$, $p = .000$), and *metacognitive* strategies ($r = .660$, $p = .000$).

The analysis also indicated that the *tactile* learning style correlated significantly with *compensation strategies* ($r = .207$, $p = .010$), the *individual* learning style correlated significantly with *compensation* strategies ($r = -.167$, $p = .038$), and the *group learning style* correlated significantly with *cognitive strategies* ($r = .560$, $p = .000$), *metacognitive* strategies ($r = .797$, $p = .000$), and *social* strategies ($r = .666$, $p = .000$).

Table 3. Correlation coefficients analysis for PLS and LLS

		Memory Strategies	Cognitive Strategies	Compensation Strategies	Metacognitive Strategies	Affective Strategies	Social Strategies
VISUAL STYLE	Pearson Correlation	.142	.616**	-.006-	.539**	.504**	.132
	Sig. (2-tailed)	.077	.000	.945	.000	.000	.101
	N	155	155	155	155	155	155
AUDITORY STYLE	Pearson Correlation	-.062-	-.106-	.268**	.246**	-.041-	.529**
	Sig. (2-tailed)	.441	.191	.001	.002	.615	.000
	N	155	155	155	155	155	155
KINESTHETIC STYLE	Pearson Correlation	-.206*	.502**	.002	.660**	.154	-.066-
	Sig. (2-tailed)	.010	.000	.984	.000	.055	.413
	N	155	155	155	155	155	155
TACTILE STYLE	Pearson Correlation	.062	.089	.207**	-.033-	.062	.026
	Sig. (2-tailed)	.443	.271	.010	.685	.446	.749
	N	155	155	155	155	155	155
GROUP STYLE	Pearson Correlation	-.040-	.560**	.004	.797**	.093	.666**
	Sig. (2-tailed)	.621	.000	.957	.000	.251	.000
	N	155	155	155	155	155	155
INDIVIDUAL STYLE	Pearson Correlation	.137	.063	-.167-*	-.082-	.142	.131
	Sig. (2-tailed)	.090	.438	.038	.313	.079	.103
	N	155	155	155	155	155	155

5. Discussion

The results of this study showed that the *kinesthetic*, *auditory*, and *group* perceptual learning styles were the most preferred PLS among participants, whereas the *visual* and *individual* learning styles were the least favored PLS among participants. This implies that Saudi EFL students learn best by being involved physically in classroom activities such as role-playing and field trips. They also learn best when they have the opportunity to do "hands-on" activities such as working with materials, taking notes, and physical involvement in class related activities. Hearing audio tapes, lectures, class discussion, and working in groups could also benefit EFL learners more than visual or individual based instruction (Oxford, 2001). These results are consistent with Ried's study (1987) of Arabic EFL students, which reported a strong preference for kinesthetic, tactile, and auditory learning styles and negative preference for individual learning styles. The tendency for kinesthetic and auditory learning styles was similar to the results of Rossi-Le' study (1989) which showed that most ESL learners favored kinesthetic and tactile learning styles. Similarly, Peacock (2001) revealed that most ESL learners favored the kinesthetic and auditory but disfavored the individual learning style. Other studies (Melton, 1990; Mulalic, Shah, and Ahmad, 2009; Tuan, 2011; Khmakhien, 2012; Wang, 2012; Farajolahi and Nimvari, 2014; Muniandy and Shuib, 2016; Zarrabi, 2017), which were conducted on non-Arab EFL students, reported the same result ranking the kinesthetic, auditory, and group learning styles as major PLS.

The findings of this study also revealed that *metacognitive*, *social*, and *cognitive* language learning strategies were the most frequently used LLS among participants, whereas *affective* and *memory* strategies were the least

frequently used LLS among participants. These findings imply that Saudi EFL students learn best when they manipulate their language material in direct ways through reasoning, note-taking, summarizing, outlining, and practicing in naturalistic settings. They also learn best when they are allowed to identify their needs, plan their tasks, gather and organize their materials, monitor their mistakes, and evaluate their success. They also like to interact with others to understand the target language through asking questions for verification and clarification, talking with a native language conversation partner, and exploring cultural and social norms (Oxford, 2001). These results are consistent with other studies (Al-Wahibee, 2000; Hong-Nam & Leavell, 2006; Riazi, 2007; Alqahtani & Alhebaishi, 2010; Aljuaid, 2010; Gerami & Baighlou, 2011; Alhaisoni, 2012; Alkahtani, 2016; Alhaysony, 2017; Alnujaidi, 2017) which reported that *metacognitive, social, and cognitive* strategies were the most frequently used LLS while *affective* and *memory* strategies were the least frequently used LLS among EFL students.

This study also reported significant correlations between the *visual* learning style and *cognitive, metacognitive, and affective* language learning strategies. These correlations suggest that visual learners tend to directly analyze, synthesize, summarize, and organize their language material as well as practice structures and sounds formally in natural settings. Visual learners are also able to identify their own preferences, monitor their mistakes, and evaluate their task success (Oxford, 2001). These results are consistent with Tabanlioglu (2003), Al-Hebaishi (2012), Chu (2013), Farajolahi and Nimvari (2014), Muniandy and Shuib (2016), Nosratinia, Mojri, and Sarabchian (2014), Sahragard, Khajavi, and Abbasian (2014), Alkahtani (2016), Balci (2017), who reported a significant relationship between the visual learning style and cognitive, metacognitive, and affective strategies. These correlations indicate that visual learners tend to directly analyze, synthesize, summarize, and organize their language material as well as practice structures and sounds formally in natural settings. Visual learners are also able to identify their own preferences, monitor their mistakes, and evaluate their task success (Oxford, 2001).

Other significant correlations were also found between the *auditory* learning style and *compensation, metacognitive, and social* language learning strategies. These correlations indicate that auditory learners tend to use some strategies that would make up missing knowledge such as guessing from the context, using synonyms, and using gestures or pause words for speaking. Auditory learners are also capable of thinking about their learning process as well as planning, monitoring, and evaluating their learning. They also prefer to understand the target language through asking questions for help, clarification and verification, talking with a native-speaker, and exploring the target culture (Oxford, 2001). These findings are consistent with Tabanlioglu (2003), Chu (2013), Farajolahi and Nimvari, (2014), Sahragard, Khajavi, and Abbasian (2014), Alkahtani (2016), Balci (2017), who revealed a significant relationship between the auditory learning style and compensation, metacognitive, and social strategies.

The *kinesthetic* learning style correlated significantly with *memory, cognitive, and metacognitive* strategies. The negative significant correlations between kinesthetic PLS and memory LLS imply that kinesthetic learners are easily frustrated with audible materials only. They prefer using their whole body while learning, love acting and athletics, enjoy working with objects, collages, and flashcards, and prefer to have frequent breaks and move around the room rather than sitting at a desk for a long time. They also prefer outlining their language material, reorganizing their new information, identifying and evaluating their own preferences, needs, and mistakes (Oxford, 2001). These findings are similar to Chu (2013), Jhaish (2010), Baghban (2012), Farajolahi and Nimvari, (2014), Sahragard, Khajavi, and Abbasian (2014), Alkahtani (2016), Balci (2017), who found significant correlations between the kinesthetic learning style and memory, cognitive, and metacognitive strategies.

The results also indicated that the *tactile* learning style correlated significantly with *compensation* strategies. The positive significant correlation implies that tactile learners are capable of using guessing clues, overcoming limitations through switching to the mother tongue, getting help, using gesture, and coining words (Oxford, 2001). These findings are in line with Chu (2013), Alkahtani (2016), Muniandy and Shuib (2016) who found a significant correlation between the tactile learning style and compensation strategies.

The *individual* learning style was also found to correlate significantly with *compensation* strategies. The negative significant correlation indicates that individual learners learn more effectively through working alone while compensation strategies require working in groups. The same results were reported by Tabanlioglu (2003), Sahragard, Khajavi, and Abbasian (2014), and Alkahtani (2016).

The findings also revealed that the *group* learning style significantly correlated with *cognitive* strategies, *metacognitive* strategies, and *social* strategies. These correlations indicate that group learners handle their

language material through reasoning, note-taking, summarizing, synthesizing. They recognize their own needs, observe their mistakes, and evaluate their learning process. They also try to interact with others to understand the target language and culture in different ways (Oxford, 2001). These findings are consistent with Chu (2013), Farajolahi and Nimvari, (2014), Sahragard, Khajavi, and Abbasian (2014), Alkahtani (2016).

6. Conclusion

The findings of this study may yield useful information to increase EFL students' performance and to improve EFL teachers' practice. EFL students need to be aware of their own learning styles as well as their own language learning strategies. As language learning strategies can improve students' own perception, reception, storage, retention, and retrieval of language information (Oxford, 2001), students should be explicitly taught how, when, and why strategies can be used to facilitate their language learning. Language learning strategies should also be integrated into everyday class materials, and may be explicitly or implicitly embedded into the language learning tasks (Cohen, Weaver, and Li, 1996). Identifying students' learning styles and strategies would allow them to meet their language needs and achieve their learning goals. To maximize students' learning performance, learning styles and strategies should be highly considered when designing and delivering EFL materials.

In addition, EFL teachers need to have adequate knowledge of their students' preferred styles and strategies in order to provide them with the needed instruction. This implies that Saudi EFL teachers should provide their students with opportunities to match their preferred learning styles by involving them in classroom activities that emphasize physical involvement such as role-playing, field trips, working with materials, working in groups, as well as activities that rely on auditory perceptions such as hearing audio tapes, lectures, class discussions. It also implies that Saudi EFL teachers should provide their students with opportunities to match their language learning strategies by allowing them to identify their needs, plan their tasks, gather and organize their materials, monitor their mistakes, and evaluate their success, interact with others to understand the target language, and manipulate their language material in direct ways through summarizing, synthesizing, outlining, reorganizing information, and practicing in naturalistic settings.

These findings would also suggest a need for investigating the relationship between learning styles, language learning strategies and students' achievement and investigating the match or mismatch between learning styles and teaching styles among EFL Saudi students.

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