

Learning Styles and Learning Strategies in Adult Second Language Learning: A Longitudinal Case Study

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Abstract: The importance of variables such as learning styles and learning strategies are becoming significant predictors used to improve second and foreign classroom teaching and learning. Clearly, knowing and understanding L2/FL learners' learning style preferences would help them target and adapt certain language strategies and therefore lead to positive attitudes towards learning the language. To date, there have been few empirical studies of the relationship between learning styles and learning strategies at tertiary level and in particular in the Saudi context. With this in mind, the present small scale study, using a longitudinal design, aimed to examine primarily choices of learning styles and learning strategies by an adult learner of English as a second language. This single case study triangulates quantitative and qualitative data, using published questionnaires, strategy inventories and a retrospective structured interview. The major results showed that learning styles had an impact on the participant's strategies choices. Moreover, the participant emerged as an eclectic learner with five out of ten preferred style dimensions, namely, deductive, analytical, sharpening, reflective, and perhaps sequential subscale dimensions. On the other hand, the participant showed strong preferences for five of the ten styles on a list of synoptic preferences including field-sensitivity, field-independence, analogue, concrete and perhaps random style dimensions. The results have implications for teaching and the learning situation in language classrooms.

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1 Introduction

It is a fact that learning L2/FL is challenging, complicated as well as time consuming. One of the research areas that has provided us with rich data on success in foreign or second language learning is individual differences. The study of individual differences in L2 and FL settings has entered its fourth decade. A number of contributions have been made by Oxford (1989, 2013), Ehrman *et al.* (2003), Dörnyei (2005), and Griffiths and Oxford (2014) to discuss individual differences such as aptitudes, demographic variables, affective variables, learning styles and learning strategies, and how these factors have profound effects on how language learners approach language learning tasks and how successful they are. The more of an understanding of the learner's characteristics we gain, the more we tune out the complexity and variability inherent in the language acquisition process. Researchers have observed and explored that various language learners approach learning in a dramatically different manner and that the use of different learning styles and learning strategies are related to these individual differences. A shared understanding is that we learn in various ways and what fits one learner may be inadequate for another. Learning style, like many other learner factors, has been hypothesized to influence learning strategies use (Cohen, 1998; Oxford and Burry-Stock, 1995). By providing students with effective instruction that meets their needs and competence, L2

practitioners and learners should understand this complex relation in the L2 learning context. As Oxford (2001, p. 359) puts it when describing the treatments of these two variables, "styles and strategies are among the main factors that help determine how – and how well – our students learn a second language or a foreign language". Although a growing number of researchers have considered the positive association between learning styles and learning strategies to determine the achievement in learning English or other languages (Ehrman and Oxford 1989, 1995; Littlemore, 2001; Carson and Longhini, 2002), very little attention has been given specifically to combine the two variables regarding language learning success at the tertiary level. Reid (1998) stated that language learners have different styles and that they have their own learning strategies which allow them to control and direct their learning. The origin of the learning style concept is general psychology. A learning style is defined as the general approaches and the individual characteristics of a student in taking in and comprehending new information (Reid, 1998; Felder and Brent, 2005). Over the last three decades, research has shown that the interaction between learning styles and learning strategies is not uncomplicated (Reid, 1987; Ellis, 1994; Ehrman *et al.*, 2003; Oxford, 2003, 2011, 2013; Benson and Gao, 2008). While the concepts involved in learning style demonstrate orientations related to the learning skills of individuals at various

psychological and physical behaviors, the notion of learning strategies implies consciously used techniques in learning. Several key definitions of learning strategies have been offered by leading figures in the L2 field (Rubin, 1975; Tarone, 1983; O'Malley *et al.*, 1985; O'Malley and Chamot, 1990; Cohen, 2011; Griffiths, 2013). Oxford (1990, p. 8) produced a well-known and comprehensive definition of learning strategies as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, more transferable to new situations". The fact that learners may prefer or switch to a learning style that may enhance their abilities to learn the target language leads Dörnyei and Skehan (2003), Ehrman and Oxford (1990) and Reid (1998) to argue for a defining criterion to distinguish between the two concepts, namely consciousness and awareness. Another important feature of learners' diverse learning styles is that while it might be difficult to alter a given learning style it is possible to expand one's own style to achieve a given learning goal. Emphasising the element of stability, Keefe and Jenkins (2000, p. 52) described learning styles as predominantly "characteristic cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how students perceive, interact with, and respond to the learning environment". At this point, it may be concluded that learning styles are very similar to learning strategies, sharing their essentially cognitive and affective constructs.

The different factors characterizing learning styles and learning strategies are often considered interrelated. If for instance the learners are aware of the importance to determine their style preferences and link them to the strategies they select for language learning, they are likely to take more responsibility of their own learning and ideally this will have a positive impact on their performance. Notwithstanding the rapid development that research into the variables characterised by individual differences has undergone in recent years, there are two connective variables that have remained elusive within this field; learning style and learning strategy. Despite a long tradition in applied linguistics of investigating the roles of learning style and learning strategy in language development (for recent overviews, see Ehrman *et al.*, 2003; Griffiths and Oxford, 2014), our knowledge of the potential effects of learning style on learning strategy is at present rather sparse. The dearth of empirical studies on the correlation between these two learner-internal factors is surprising as prominent scholars have long called for further research on this topic (Oxford, 1989, 2011, 2013; Ma and Oxford, 2014). Also worth noting is that most of the learning style and learning strategies-related studies have been

largely carried out in Europe, the US and many Far Eastern countries. The inevitable outcome of this dominance is that the unique ESL contexts typical of Saudi speakers of English, as of other Asian nationalities, have not been much studied. Keeping in mind that learner characteristics such as learning styles may influence learning strategies, the present study focuses on the relationship between the learner's characteristics that are largely beyond the instructor's control, namely, learning styles and learning strategies, in the case of this study by a Saudi tertiary-level ESL learner.

2 Conceptual Frameworks of Learning Styles and Learning Strategies

Learning style has been frequently related to the anecdotal research of Witkin and Goodenough (1981) to distinguish variations in perception of the vertical. Earlier researchers addressed cognitive styles (CS) scales such as leveling-sharpening on the basis of ecopsychology to describe how styles are processed in L2 contexts (Schmeck, 1988; Jonassen and Grabowski, 1993). A number of models have been developed by researchers of learning styles which are of use in revealing learners' style preferences (see for example, Keefe and Monk, 1986; Reid, 1987; Ehrman, 1996; Leaver, 1998; Myers *et al.*, 1998). Those models have shown that the following three dimensions of style preferences are common and thus useful to understand the process of language learning: sensory-perceptual channels such as vision, hearing and tactile/kinesthetic; cognitive style scales such as leveling-sharpening and personality-related style preferences such as extroverted vs. introverted, intuitive vs. sensing or sequential, thinking vs. feeling, and keeping all options open vs. closure-oriented.

Much second language acquisition (SLA) research had to rely on tests and self-reported inventories which were originally designed in general psychology. This demanded the creation of instruments which identified the specific nature of learner styles that may influence the language of the learner (Ellis, 2008). More recently, however, a line of research has emerged with fresh overarching constructs based on personality and cognitive styles modalities. Drawn from this work, Ehrman and Leaver (2003) proposed new comprehensive subscales for learning styles, labeled "E&L Construct", which took into account a total of ten bipolar style dimensions such as random-sequential, leveling-sharpening and abstract-concrete. Typically, learning style is assessed by means of self-report questionnaires. Several instruments are available, but only a few have a track record of validity and reliability. This study employed the E&L Learning Style Questionnaire as one of the quantitative

instruments for identifying the study participant's learning styles.

The E&L Learning Style Questionnaire has 30 items, each modeled on a nine-point Likert-type scale. The E&L Construct is operationalized by having one superordinate style dimension, with two poles. These two poles are labeled "ectasis" and "synopsis". The difference between the two poles is that "ectenic" learners prefer to control their learning process consciously, while synoptic learners prefer preconscious or unconscious processing. The E&L Construct comprises ten subscales, which are discussed in some detail in the next section.

2.1 Field dependent-independent & field sensitive-insensitive

In contrast to the literature at the time, Ehrman and Leaver (2003) distinguished between the terms (in) dependence and (in) sensitivity. What field dependence-independence refers to here is the "preference for selection and prioritization vs. treating the whole context as the same". On the other hand, field sensitivity-insensitivity refers to the "preference for considering materials in a situated manner and being aware of their position in their broader context" (Ehrman and Leaver, 2003 p. 147). Ehrman (1996, 1997), cited in Ehrman and Leaver, 2003, p. 397, produced a model predicting four types of field (in) dependence and (in)sensitivity, on the basis of xyz (see Appendix 1):

Type 1: The combination of field-independence and field-sensitivity is more likely to indicate that the learner is capable of dealing with materials in and out of context.

Type 2: The combination of field-independence and field-insensitivity is more likely to indicate that the learner has no trouble dealing with materials out of context.

Type 3: The combination of field-dependence and field-sensitivity is more likely to indicate that the learner has no trouble dealing with materials in context.

Type 4: The combination of field-dependence and field-insensitivity is more likely to indicate that the learner is not capable of dealing with materials in or out of context.

Random (Non-Linear)-Sequential (Linear)

Random learners favor working out their learning process by themselves, and tend to deal well with surprises, whereas sequential learners are more likely to favor step-by-step processing, and tend to be excellent planners, but seem to dislike open-ended activities.

Global-Particular

Global learners tend to focus on the "big picture", applying top-down processing, whereas

particular learners tend to focus on the details, applying bottom-up processing.

Inductive-Deductive

Inductive learners like to come up with theories and rules from data, whereas deductive learners like to start by using the theories and rules and apply them directly to the cases in front of them.

Synthetic-Analytic

Synthetic learners build new hypotheses by creating wholes from pieces, whereas analytic learners break down the wholes into pieces to come up with their own hypotheses.

Analogue-Digital

Analogue learners like to get the meaning through metaphors and interpretation, whereas digital learners are more likely to get the meaning directly without interpretation.

Concrete-Abstract

Concrete learners like to involve themselves with what they learn, preferring to engage with activities like role-plays and field trips. In contrast, abstract learners tend to focus on the system of the language rather than on using the language.

Leveling-Sharpening

This dimension is one of the early dimensions identified as characterizing a cognitive style. It reflects how learners perceive, store, and retrieve the information. Levelers are likely to merge information while sharpeners separate units of information from each other.

Impulsive-Reflective

The impulsive-reflective dimension is concerned with how fast learners respond to a stimulus. Impulsive learners are quick to respond but lack accuracy, whereas reflective learners tend to think an issue through and respond more slowly, which results usually in an accurate response.

Commenting on the major advantage of the E&L Construct to explaining language development, (Ehrman *et al.*, 2003, p. 315) stated that "The contribution to the learning styles field made by this latest entry is the concept and implementation of a complex profile that can combine attributes from each of the two 'poles' in multiple combinations". As will be seen below under the heading of "Research on learning style and learning strategy use", the E&L Construct has not been applied to insights gained in research into individuals' learning styles. Moreover, the lack of research adopting the E&L Construct extends to the Arab world in general and to Saudi Arabian individuals in particular. Hence, the current study is a step in filling the gap in the literature on learning styles by applying the E&L Construct to an Arabic adult learner of English.

Learning strategy research started with the pioneering work by Rubin (1975) and Stern (1975),

and has become widely appreciated in the last three decades among many scholars (e.g. O'Malley *et al.*, 1985; O'Malley and Chamot, 1990; Oxford, 1990, 2011; Cohen 1998, 2011; Cohen and Macaro, 2007; Griffiths, 2003, 2013). In the L2 area, the most common and frequently used instrument for assessing learning strategies by large numbers of mostly foreign language learners is the Strategy Inventory for Language Learning (SILL). Based on her synthesis of previous research and on factor-analytic, questionnaire-based studies of language learning strategies (LLS) among adult learners, Oxford (1990) developed one of the most widely accepted classification taxonomies in the language learning field, proposing six strategy groups: memory, cognitive, compensation, metacognitive, affective and social strategies. Obtaining quantitative data by means of self-reported questionnaires is not an unpopular research methodology in LLS as Griffiths and Oxford (2014, p. 3) note: "questionnaires have formed the 'backbone' of strategy research methodology". Several tools measuring LLS use have emerged from this research. The present study tends to utilize Oxford's SILL as it is "perhaps the most comprehensive classification of learning strategies to date" (Ellis, 1994, p. 539) and has been frequently used to correlate strategy use with learning styles (Chamot, 2004). It also provides a snapshot of the individual learner's typical strategy use.

3 Research on Learning Style and Learning Strategy Use

Numerous studies around the world have increased our awareness of the important effects of individual differences on learners' success in language learning. However, there are very few empirical studies that have lent strong support to the significant contributions of style preferences and language strategies to the acquisition of language skills at a tertiary education level. In an attempt to relate learning styles to learning strategies among two sets of adult language learners who were learning other foreign languages for career reasons by means of a specially designed questionnaire, the Myers-Briggs Type Indicator (MBTI), Ehrman and Oxford (1989) showed that affective and visualization strategies were more significantly associated with extroverts – perceivers whose energy come from the outside world, people and activities – than introverts. In contrast, introverts – perceivers whose energy come from their internal world of ideas, emotions and impressions – demonstrated a strong preference for metacognitive strategies that involved searching for and communicating meaning. Findings also showed that intuitive learners tended to favor affective, authentic language use, and formal model building compared with the sensing group. Moreover, general study

strategies were more closely associated with feeling-type learners than thinking-type learners. Overall the research results indicate that a personality related aspect of the learning style has a significant correlation with language learning strategy use.

Littlemore (2001) sought to confirm the hypotheses that holistic learners tend to use strategies that are based on a holistic construct, and that analytic learners adopt strategies that are relevant to description and segmental dimensions. Littlemore (2001, p. 245) based her hypotheses on the argument that "if one wishes to find a relationship between cognitive styles and CS use, then one must look in the areas where such a relationship is most likely to be found". The study involved 82 Belgian (native speakers of French) undergraduate students majoring in English who were classified into either holistic or analytic groups. In order to assess the participants' cognitive styles and communication strategies use, Littlemore used the French version of computer-based Cognitive Style Analysis (CSA) and a concrete picture description test. *T*-test analyses showed that within the dimension of conceptual CS holistic learners used significantly more holistic strategies than analytic learners, and analytic learners used significantly more analytic strategies than holistic learners. Moreover, Littlemore reported that holistic learners employed comparison-based strategies whereas analytic learners adopted individual features of the target item. The results confirmed the above hypotheses that learning styles help determine the learners' strategy preferences.

In discerning the interaction between learning styles and learning strategies while learning Spanish in a naturalistic setting (Argentina), Carson and Longhini (2002) gathered data through SILL (Oxford, 1990), Style Analysis Survey (SAS) and a written diary. Carson herself served as a single participant in this study. The findings revealed that the participant's learning styles remained stable while her learning strategies were more dynamic over her time in the language immersion setting. The diarist's learning styles emerged to impact her learning strategies use. It was found that she was classified as an introvert learner and uneasy to interact with people whom she did not know well.

In summary, the above review underscores the importance of having learners determine their style preferences and be more aware of the effective link between their style preferences and the strategies that they choose for language learning and language use tasks.

3.1 The Application of Theoretical Framework to the Present Study

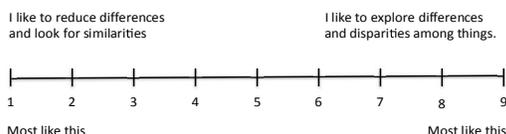
The theory underlying the present study is that language learners' individual difference variables

influence each other (Ehrman *et al.*, 2003; Chamot, 2004; Ma and Oxford, 2014). Such interaction between learning styles and learning strategies seems to take place simultaneously and is vital for the development of language learning both under formal learning conditions and in natural settings (Ehrman *et al.*, 2003; Oxford, 2003; Griffiths and Oxford, 2014). This assumption is supported by the results of the empirical research reported above. Based on the gaps in existing research mentioned above, the following research question guided the present study: What is the relationship between learning style preferences and learning strategy uses of the Saudi adult ESL learner?

4 Methodology

4.1 Overarching Design

It worth noting that most previous research into the effects of individual differences on the learning process has looked at the relationship between learning styles and learning strategies by groups of L2 students using a cross-sectional approach. While acknowledging the fruitful and valuable insights for statistical generalization to the wider population this point-in-time approach may offer, a longitudinal case study approach allows for an in-depth analysis of the interaction of an individual's variables in the course of learning. As Harklau (2008, p. 26) asserts, the benefit of longitudinal case-based empirical research is to



“carefully document the interaction of individual and context and to document how language learning is mediated by participants’ understanding of and interactions with context over time”. To answer the research question, the current case study the researcher reports on here followed a longitudinal design. It involved a mixed-methods approach as proposed by Tashakkori and Creswell (2007) and referred to by (Creswell, 2003, p. 215) as sequential explanatory model characterized “by the collection and analysis of quantitative data followed by the collection and analysis of qualitative data. The priority typically is given to the quantitative data, and the two methods are integrated during the interpretation phase of the study”. With the emphasis on the quantitative data, gathered by means of questionnaires, the qualitative data were gathered through a semi-structured interview, thus deepening our understanding and interpretation of the results. Furthermore, the purpose behind adopting triangulation as research methodology is to avoid the

shortcomings of one particular approach to research and to add validity to any outcomes that could be established across all three sets of data.

4.2 Participant

The participant is a male L1 Arabic adult learner of L2 English, aged 21 years, whom I will refer to as S. He had studied English for six years prior to coming to King Abdulaziz University, Jeddah, Saudi Arabia, where he is an undergraduate English major. S was engaged in a first-year program leading to a Bachelor of Arts (B.A.) in English language. It should be noted that S finished the first year and gained all the required credits in the second semester. However, he decided to pursue his undergraduate studies abroad, specifically in the UK. He did not use English communicatively any further until March 2013 when he started English again in the UK. S had never previously resided in a country where English was the first language, except for his university preessional course. He spent a year learning English as a second language in an English language institute. S was enrolled in a full-time language course and placed in an upper-intermediate level class. He explained to me that he encountered some difficulties at the beginning. Such difficulties included the British accent, the load of unknown vocabulary, and L2 instructional methodology. Upon completion of the language course, he passed the English requirement for the undergraduate program and started his undergraduate studies in April 2014.

4.3 Instrumentation

The present study relied on three basic research tools for collecting the target data. In order to measure the participant's learning style preferences, Ehrman and Leaver's (2003) E&L Learning Style Questionnaire was used. This is a self-scoring paper and pencil inventory which consists of 30 statements which require the respondent to mark their preferences on a nine-point Likert-type scale, as shown below:

There are three items targeting each of the ten subordinate style dimensions. Depending on the strength of the respondent's preferences as reflected by their scores, they can show a strong tendency for a particular orientation (i.e. the respondent may be strongly inductive and not at all deductive), a weak tendency, or they may be neutral in their orientation. The resultant scores give the students a comparable reading on their detailed and individualized learning style preferences over time. As mentioned above, the ten dimension styles based on a person's preferences provide information about their general stylistic orientation, which is represented by the superordinate bipolar construct of synopsis-ectasis. Primarily synoptic learners tend to “trust their guts”, while primarily ectenic learners tend not to; instead, ectenic individuals desire and/or need a high degree of

conscious control over their learning situation (Ehrman & Leaver, 2003, p. 395). Ehrman and Leaver (2003) have been able to demonstrate the validity of their LSQ and so, the researcher has a clearer idea of such an instrument's behavior. The researcher should also reiterate here that the E&L LSQ was used in the current study as a response to what Ehrman and Leaver (2003, p. 412) called for: "There is much research to be done on the E&L construct itself, its applications to such areas of interest as very high level language learning, and on its relevance in multiple settings – in classrooms and outside of them".

For the purpose of obtaining data that assess the participant's learning strategy use, the original adult version of Oxford's (1990) SILL questionnaire was employed. The SILL is also a self-scoring paper and pencil questionnaire which comprises 50 items to which the participant responds on a five-point Likert-type scale, ranging from 1 "Never or almost never true of me" to 5 "Always or almost always true of me". The questionnaire items represent six strategy groups: memory, cognitive, compensation, metacognitive, affective, and social strategies. The first three strategy groups involve the L2 directly, while the last three are indirect strategies. The SILL provides information on how to interpret mean scores, which indicate whether use of a certain strategy group can be deemed high, medium, or low. The SILL provided considerable evidence for its reliability coefficients, with Cronbach Alpha usually in the range of .89 to .98 in a large number of studies and a wide range of contexts (Ehrman and Oxford, 1990; Oxford and Burry-Stock, 1995).

The qualitative method employed used a retrospective structured interview, developed by the author. The interview was undertaken to explore in more detail the study participant's responses in the questionnaires. A second purpose was to enhance the degree of validity of the interview, specifically to confirm the participant's understanding of the questionnaire items. The interview included questions related to the participant's previous English learning

experience, learning style preferences, and strategies adopted in learning English. In sum, the interview guide was intended to serve as a further source of information to supplement and triangulate the questionnaire data.

The researcher administered the three sets of instruments at a prearranged time. The study was conducted during the week from 4-12 September 2014. The researcher first briefly explained to the participant the general background and purpose of the study, and provided instructions on how to answer the questionnaires. The participant was reassured that his participation would remain confidential and only used for research purposes. Both the E&L LSQ and the SILL self-reported questionnaires were completed by the participant, which took between 10 and 15 minutes each. The structured in-depth interview took place a week after the questionnaires were completed. Because this was a case study of just one participant, it was feasible to employ the time consuming, but highly informative, measurement method of one-on-one interview. The 40-minute interview was conducted in the university library after a brief exchange of good-natured remarks to put the participant at ease and to make him feel more comfortable with the researcher. The interview was recorded with an MP3 player and transcribed with the consent of the participant.

5 Data Analysis

The analysis of the E&L LSQ (see the scoring sheet in the Appendix) is based on the work of Ehrman and Leaver (2003). In reporting the frequency of use of learning strategies, Oxford's (1990) key was devised to understand the mean scores gained in the SILL, which has a scale ranging from 1-5 as follows:

High Use	3.5 to 4.4 (usually used) and 4.5 to 5.0 (almost always or always used)
Medium Use	2.5 to 3.4 (sometimes used)
Low Use	1.0-1.4 (never or almost never used) and 1.5 to 2.4 (usually not used)

6 Results and Discussion

6.1 Questionnaire Data

	1	2	3	4	5	6	7	8	9	
Synoptic										Ectenic
Field-sensitive				X						Field-insensitive
Field-independent					X					Field-dependent
Levelling						X				Sharpening
Global						X				Particular
Impulsive							X			Reflective
Synthetic						X				Analytic
Analogue				X						Digital
Concrete				X						Abstract
Random					X					Sequential
Inductive						X				deductive
	3-4	5-7	8-10	11-13	14-16	17-19	20-22	23-25	26-27	

Figure 1: E&L scoring and feedback grid for S

S's responses to the E&L Learning Style Questionnaire yielded a lot of interesting results. Basically, S appears to be a mix of both synoptic and ectenic learner. Three of his style dimensions preferences are on the synoptic side, five are on the ectenic side, and two in the neutral zone. His E&L results are displayed in Figure 1.

S scored a mutual preference for field-independence and field-dependence. This needs to be further investigated using the interview guide to triangulate the questionnaire score. However, based on his analogues preference – which means that his thinking is non-linear and he usually prefers to learn materials in context using qualitative and metaphorical approaches – xyz is in direct relation to field-independence. S showed a preference for the field-sensitive dimension, suggesting that he is attentive to changes in his environment. Being a field-sensitive learner also suggests that he can focus on and recognize information while, at the same time, being aware of the background of the activity. Therefore, S is more likely to better interact in complex social settings. S appears to be both a field-independent and a field-sensitive learner. This indicates that he is a type 1 learner on Ehrman's model of field-independent and field-sensitive (Ehrman, 1996, 1997). Therefore, S can learn from both in- and out-of-context materials. It is expected from the combination of these two subscales that S prefers to impose his own thinking on learning, focus on specific aspects of his learning materials, and choose what interests him from the whole.

There is only one other inconclusive result, which is on the random-sequential subscale. As stated above, the interview should interpret this result. However, it is probably true to say that S has a mutual preference in this subscale.

S is proving to be a sharpener learner, this and being analytic learner helps him to notice small differences in the whole and easily break down the rules to understand the underlying structure. S's results on these subscales suggest that he is successful in retrieving grammatical and lexical rules and information because he stores these separately. He also can distinguish speech patterns, grammatical structures, and meaning and apply his understanding to new examples so as to easily understand them.

The results also suggest that he is a particular and an analogical learner. This means that he is more likely to pay attention to discrete items and details using metaphorical links to the meaning of an item. Such a metaphorical preference is often related to intuition and such learners are "prone to make associations almost as a second nature" (Ehrman, 2008, p. 66). One implication of this for teaching is that learners following a metaphorical style should be

offered opportunities to share their experiences through useful tools such as a poem, a picture or a metaphor to approach true learning and improvement. The study participant is also more likely to focus on specific grammatical rules which can help facilitate comprehension of that specific rule. However, this might not come in handy since it also suggests that he would overlook larger concepts and might end up creating an incomplete hypothesis.

S is a reflective learner who prefers to think rather than respond right away. This type of learner tends to benefit from complex thinking and usually work accurately. Highly reflective learners may experience difficulties with real-time skills such as L2 speaking, and with timed tests, although the part of a text they complete tends to be accurate and correct. S's results also suggest that he is a deductive learner, meaning that he prefers studying rules and then apply them to examples, thus testing a generalization against the facts. These subscales show that he is inclined to accurately learn and apply the rules. It also suggests that when S is faced with complex examples he is likely to appreciate the teacher's explanation. However, since he tends to take his time thinking about what he is confronted with, he is in danger of not having enough time and/or ending up with uncompleted work.

S also reported a preference for concrete learning, i.e. for experiential. This suggests that he favors learning through direct experience, putting the language into practice and not just learn about it. It is also argued in the literature that some activities become learning style preferences when they are particularly appropriate for a concrete learner. That is, there are activities, including note taking, performing role plays, reading aloud, talking as much as possible, that are classified as concrete activities which are helpful in developing learning (Ehrman, 1996).

S is really fortunate being a type 1 learner, one who can learn from in- and out-of-context materials. His synoptic includes field-sensitivity preferences, and field-independence, analogue, concrete and perhaps random style dimensions. As a result, S is a learner who prefers to use the whole context, focus on important aspects of the language, priorities and hierarchies information, interpret experiences metaphorically, direct interaction with the world, and follow his own way of processing. On the other hand, S's ectenic preferences are deductive, analytical, sharpening, reflective and perhaps dimensions on a sequential subscale. Therefore, S is more likely a learner who opts to start with rules rather than examples, moves from general to specific, disassembles whole into parts to understand better, draws on differences to learn from them, acts based on

previous thinking, and follows the processing order of teachers and textbooks.

With regard to S's responses on the SILL, the most strategies categories that fell in the highest use range were the compensation and social strategies with average of 4.6 or "always true of me". These strategies might be useful because of S's reflective preferences, particularly to overcome his lack of linguistic knowledge and to cope with communicative challenges. This also indicates that the learner's learning strategies are affected by his concrete learning style preferences (Ehrman *et al.*, 2003). Compared with EFL contexts, ESL academic classes might provide more opportunities to stimulate and demand a higher use of such strategies. They are therefore of benefit when fulfilling the lack of immediacy for the purpose of one's communication.

S reported a medium use of the following strategies: cognitive (mean 3.1), metacognitive (mean 2.8), affective (mean 2.6), and memory (mean 1.3). At first glance, S's relatively low use of memory strategies, i.e. strategies which supposedly lead to more effective memorization of vocabulary, seems to be consistent with his sharpening style preferences. In the memory dimension, S allocated a score of 2 "usually not" to memory related strategies like "I think of relationships between what I already know and new things I learn in English", "I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign". The low score on these sets of strategies suggests that a sharpener and also an analytic learner relies relatively little on memory.

In the cognitive set of strategies, S allocated a score of 5 "always or almost always true of me" to three individual strategies; in the metacognitive group, S gave a score of 5 to two strategies. Most of these very frequently used strategies seem to reflect S's stylistic preferences in a particularly clear manner: "I watch English language TV shows spoken in English or go to movies spoken in English", "I find the meaning of an English word by dividing it into parts so (that) I understand it", "I first skim an English passage (read over the passage quickly) then go back and read carefully", "I try to find as many ways as I can to use my English", and "I notice my English mistakes and use that information to help me do better" are all compatible with the reflective, analytic, concrete style preferences of a person who works diligently and accurately and who prefers to think things through before responding and who opts to break a rule into its component elements. In the affective category, S appeared to exploit strategies on the rating scale ranging from 4 "often" to 5 "always or almost always true of me", including "I talk to someone else about how I feel when I am learning

English", and "I encourage myself to speak English even when I am afraid of making a mistake". This clear tendency and preference for these strategies helps S to adjust emotion, motivation, and attitude such as self-encouragement, and to communicate and interact with others for the purpose of facilitating learning, such as by asking questions. This is probably consistent with S's preference for deductive learning in which he seeks opportunities for interaction, asking for clarification in the classroom environment. Therefore, it seems that the element of training or encouragement, and maybe motivation, could also have an impact on language learning, particularly in ESL settings.

6.2 Interview Data

In the interview, S opened up and revealed some interesting information. S had the advantage of having a previous experience of English learning before he came to the United Kingdom. However, his previous learning was mostly through grammar translation method, he described it as "stuffing" language rather than teaching it, it lacked meaning and communicative competence. When I asked S about what is better for him, S clearly prefers the way he is being taught here in the United Kingdom using the communicative method.

In his words, S explained that he prefers "Introducing the rule, giving examples, and letting the learner come up with differences". This makes it easier to understand the rule and memorize it; this is consistent with his sharpening preference. Therefore, he prefers to look for and find differences and then stores them prominently in his memory.

When the researcher asked S if he thought that he stands out from his classmates in his English class, he answered "yes". When asked why he replied, "I believe because I watch English movies and series a lot", and "I usually memorize complete sentences, analyze their structures, and try to understand the differences". This comes hand in handy, being an analytic learner. In addition, S also mentioned looking for differences, which is again consistent with the characteristics of sharpening.

When S was asked whether he preferred in-context or out-of-context learning, he said, "I find it difficult to focus on everything at once – I usually look for certain things like the type of the language, is it formal or not? Or is it important?" S said he found it difficult to focus on everything, he rather looked for specific information based on importance and type. This coupled with the features of the analytic subscale suggests that S is field-independent. Regarding the other neutral preference that S scored on the random/sequential subscale, the researcher asked S whether he preferred following his own way or those of others. He explained that he prefers both an internal

and an external processing order but he usually follows his own. Therefore, as far as the random/sequential subscale is concerned, S's preference is possibly genuine.

7 Conclusion

It was mentioned above that the individual difference variables of learning style and learning strategies are interrelated. The LSQ and SILL self-reported surveys were useful to have a learner actively diagnose his style and language strategy preferences. The present study demonstrated the interaction between an Arab adult's ESL learning style preferences and learning strategy use. A number of strategies, namely compensation, cognitive, metacognitive, memory, and affective strategies were in harmony with the participant's reflective, sharpening, analytic, concrete and deductive learning style profiles. These results lead the researcher to agree with previous research by Ehrman and Oxford (1989), Ehrman and Oxford (1995), Carson and Longhini (2002), and Littlemore (2001). According to the results of the quantitative phase of the present study, if a learner with certain style preferences succeeds in finding learning strategies that particularly fit him, such as a concrete learner with compensation and social strategies who seeks activities to interact with others and keeps conversation going, this can increase the learner's self-confidence and generate increased motivation in his L2 use.

At the learning style level, it is clear from Figure 1 that S's preferences are a mix of synopsis and ectasis. S's case provided many details from the subscales, which reduced the clarity and specificity of the profile. S is a very educated and intelligent young man which might account for the mix of synopsis and ectasis in his profile. He explained that he always tried to improve his learning "skills and ways" and never felt satisfied. The researcher believes that S's results accurately describe his learning style profile, since he is somehow aware of the skills and strategies he needs in learning. This might be the reason behind his synopsis & ectasis learner mix. Chamot (2004, p. 22) noted that, "Since any type of self-report is subject to the limitations of the individual reporting, it would seem advisable to use two or three different types in any research study so that triangulation can help establish validity and reliability". Hence, the triangulation of the SILL and the retrospective interview proves to be of great importance. It helped to clarify S's natural learning style preferences and provided more precise information and details to better understand his learning strategy uses.

8 Instructional Implications and Roadmap for the Future

The first job of L2 instructors is to know about their students' learning style preferences and their

language learning strategies, and to raise their students' awareness of them. Oxford (2003) argues that, "Without adequate knowledge about their individual students' style preferences, teachers cannot systematically provide the needed instructional variety" (p. 16). Instructors should help their students to explore their learning style preferences and the strategies they favor and convince them of the usefulness of the combination of these two characteristics. The implementation by students of both learning style and learning strategy in practice can be more effective if they are guided by instructors. Students should be encouraged to reflect on their personal practice in language learning. This is said to increase their awareness of what to do in learning the target language, give them the opportunity to assess the effectiveness of their learning efforts and help them discover other strategies suitable to their learning styles. In order to make the teaching of a language course more successful, more productive as well as more enjoyable, instructors might ask students to share with their classmates' information related to learning style preferences and strategy use. Such direct involvement in generating the students' interests and insights helps to achieve a learning goal. It is necessary to guide the students through the process of self-assessment, goal setting, planning, monitoring and evaluating their learning which in the end will help them experience greater autonomy in learning. Thus, students should be provided with the necessary materials such as task-based exercises and situations for practicing strategies such as group and pair work.

Instructors should be familiar with learning strategies and aware of the various types of learning style and learning strategies and their implications in classrooms. Thus, a well-designed program of strategy instruction is worth implementing in the context of the study.

Although this study provided evidence that the participant's learning style influenced his learning strategy profile, further research is needed to consolidate the results of the present study. Although the findings may be taken as a potential basis for further research, the generalizability of these findings must also be considered since it is based on a single case study. The study should be replicated with relevant and necessary amendments in different ESL/EFL contexts and subjects. The findings of such studies would further enhance our understanding of why certain learning styles and learning strategies are not used by L2/FL learners.

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Appendix: E&L Learning Style Questionnaire – Scoring Key

Add totals from questions 1, 11, 21:

Scores of 3-13: field-sensitive

Scores of 14-16: neutral

Scores of 17-27: field-insensitive

Add totals from questions 2, 12, 22:

Scores of 3-13: field-independent

Scores of 14-16: neutral

Scores of 17-27: field-dependent

Add totals from questions 3, 13, 23:

Scores of 3-13: leveling

Scores of 14-16: neutral

Scores of 17-27: sharpening

Add totals from questions 4, 14, 24:

Scores of 3-13: global

Scores of 14-16: neutral

Scores of 17-27: particular

Add totals from questions 5, 15, 25:

Scores of 3-13: impulsive

Scores of 14-16: neutral

Scores of 17-27: reflective

Add totals from questions 6, 16, 26:

Scores of 3-13: synthetic

Scores of 14-16: neutral

Scores of 17-27: analytic

Add totals from questions 7, 17, 27:

Scores of 3-13: analogue

Scores of 14-16: neutral

Scores of 17-27: digital

Add totals from questions 8, 18, 28:

Scores of 3-13: concrete

Scores of 14-16: neutral

Scores of 17-27: abstract

Add totals from questions 9, 19, 29:

Scores of 3-13: random

Scores of 14-16: neutral

Scores of 17-27: sequential

Add totals from questions 10, 20, 30:

Scores of 3-13: inductive

Scores of 14-16: neutral

Scores of 17-27: deductive