

## The Relationship Between Perceptual Learning Styles and Learner Autonomy: A Case Study of EFL Undergraduates in Saudi Arabia

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**Abstract:** Learner skills and behaviors have motivated research in foreign language learning to investigate the relationship between learners' autonomy (LA) and their learning style preferences. Robotham (1995) and Felder (1996) claim that autonomous learning can be associated with specific perceptual learning styles. The present study attempts to contribute to the understanding of the connection between these two constructs, i.e., learners' autonomy and their perceptual learning style preferences (PLSP). Therefore, the study employs Joshi's (2011) LA assessment tool and Reid's (1987, 1995) PLSP scale on 828 Saudi learners of English in Saudi Arabia. The Pearson product-moment correlation coefficient was computed to assess the relationship between the elements of the two scales. Among others, the study found a strong association between the two investigated constructs, suggesting new ground for the interpretation of learners' autonomy and PLSP. The participants showed a moderate level of LA and preferences for almost all learning styles, with auditory, visual, and kinesthetic being their top three choices. Another interesting finding is that all the investigated learning styles were negatively correlated with the teacher role category on the LA scale.

**Keywords:** Perceptual learning styles; learning autonomy; learners of English, EFL contexts.

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### العلاقة بين أنماط التعلم الإدراكية والتعلم الذاتي: دراسة حالة حول طلاب اللغة الإنجليزية الجامعيين في

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**مستخلص:** تشكل مهارات وسلوكيات المتعلمين دافعا للبحث في مجال تعلم اللغات الأجنبية، وخصوصا في دراسة العلاقة بين ذاتية التعلم وتفضيلات أنماط التعلم الإدراكية أو الحسية. وفقا لما يراه Robotham (1995) و Felder (1996)، فإنه قد يرتبط التعلم الذاتي بأسلوب تعلم إدراكي محدد. لذا تحاول الدراسة الحالية أن تسهم في فهم طبيعة العلاقة بين هذين العنصرين، أي التعلم الذاتي لدى المتعلمين وأنماط تعلمهم الإدراكية المفضلة. ولتحقيق هذا الهدف، وظفت الدراسة أداة Joshi (2011) لقياس التعلم الذاتي إلى جانب مقياس Reid (1987) المستخدم لتحديد تفضيلات أنماط التعلم الإدراكية. شارك في الدراسة 828 من طلاب وطالبات اللغة الإنجليزية بالمستوى الجامعي في المملكة العربية السعودية. تم قياس العلاقة بين عناصر الأدوات عن طريق حساب معامل بيرسون لقياس الارتباط. ومن أهم نتائج الدراسة، وجود ارتباط قوي بين العناصر تحت الدراسة، الأمر الذي يطرح بُعدًا مختلفًا في تفسير الأنماط الإدراكية وذاتية التعلم. أيضا، أظهر المشاركون في الدراسة مستوى تعلم ذاتي متوسط، وتفضيلات لجميع أنماط التعلم تقريبًا، مرتبة حسب التفضيل على النحو الآتي: السمعي، البصري، ثم الحركي. ومن استنتاجات الدراسة المهمة كذلك، وجود علاقة سلبية بين جميع أنماط التعلم وعنصر دور المعلم في مقياس التعلم الذاتي.

**كلمات مفتاحية:** أنماط التعلم الإدراكية، ذاتية التعلم، متعلمو اللغة الإنجليزية، أوساط وسياقات تعلم الإنجليزية كلغة أجنبية.



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## Introduction

A broad contemporary advancement in pedagogy, in general, and language learning, in particular, has been towards learner-centered and self-directed learning, which entails a range of skills and behaviors required by learners. One of the most relevant concepts or behaviors for this global movement is learner autonomy (LA). Learner autonomy in education has indeed made rapid progress since the early 1990s (Little, 1991) and is often chosen by educators as the best approach to be implemented in English as a Foreign Language (EFL) contexts (Sinclair, McGrath, & Lamb, 2000). It denotes a sequence of interrelated aspects relating to realizing oneself and defining and understanding learning responsibilities, or simply “the autonomous learning process,” as Boud (1988) described. Students gradually move across several phases in such a process, from being teacher-dependent to being absolute independent learners. Regardless of the numerous attempts to fully embrace LA in most EFL contexts, research studies and findings are still limited.

Much research on LA has indeed been conducted in EFL contexts. Studies in EFL contexts usually aim at defining learners in that respect and identifying possible factors that may impinge on or enhance the application of such a ‘modern’ mode of instruction. Several researchers (e.g., Pennycook, 1997) have previously pointed out that autonomy is a western concept or value that might be relatively resisted in Asian, Oriental, or EFL contexts, mainly due to cultural disparities. This argument can be more relevant, especially when discussing the rapid global changes influencing the whole world. EFL contexts are not an exception.

With a constant concentration on the learner, research focus should be directed to learners’ “internal” or “intrinsic” factors, agents that come from within the learner, so that we can understand more about the learner’s nature concerning the concept of LA. As White (2008: 8) puts it, focusing on the learner should drive research on how learners “process, store, retrieve, and use” materials. Although there has been a breadth of studies on LA, they mostly approach ‘external’ factors, such as the effect of environment, materials or curriculum, teacher, task (Higgs, 1988), and nowadays technology (Reinders & White, 2016).

That said, LA has been associated with the discussion of LS, and the relationship between the two has been

established by several scholars, such as Robotham (1995) and Felder (1996), who claim that autonomous learners may be associated with specific learning styles and vice versa.

The current study investigates the relationship between LA, including autonomous practices, and perceptual learning styles (PLS). The study will employ the PLSs as defined and identified by Reid (1987) concerning learners’ autonomy according to Joshi’s (2011) model. Though several studies have employed PLSs, very few have correlated them with any tools of LA assessment. This study hypothesizes that due to several factors, the most important being globalization, technology, and digital communications, today’s learners show similar attitudes in terms of LA, regardless of their PLSP.

## Literature Review Learner Autonomy

There seems to be a consensus among researchers interested in LA that the term was coined and developed by the pioneering scholar Holec (1981) who defines LA as the learner’s ability to take charge and take responsibility for learning. According to Gremmo and Riley (1995), the concept evolved initially in response to behaviorism and was concomitant with the learner-centered approach. In other words, LA is meant to assist learners in playing a crucial role in the process of learning; hence, it is concerned with the ‘learner-centered stage’ (Geddes and Strurtridge, 1997). As put by Littlewood (1996: 97), LA means “learners’ ability and willingness to make choices independently.” It is a natural product of self-directed learning practice, in which objectives, progress, and evaluation of learning are all determined by learners themselves (Benson, 2001, p. 8).

All the previous definitions seemingly convey a sense of independence, which per se is indeed treated as a synonym for LA, and both terms connote individualism (Joshi, 2011; Palfreyman, 2003). Individualism, however, seems to encounter Vygotsky’s sociocultural concepts of learning in education, which are also highly advocated in the field of language acquisition and second and foreign language learning. This, according to Palfreyman (ibid.), has led to an emphasis on the term interdependence, which implies the ability of the learner to take shared responsibility for learning and work collaboratively with others. Later, this emphasis

led to a distinction between two types of autonomy, i.e., individual and ‘group,’ or social.

Exploring the layers encompassing the term LA, it becomes apparent how complex and multifaceted it is. Based on their understanding of the former distinctions, Benson and Voller (1997), for example, distinguish between ‘self-directed learning’ and ‘learner autonomy’ and argue that, nowadays, people differentiate between LA and self-instruction, self-education, self-access, and self-study (Benson, 2001). However, all of these terms, or sub-terms, are still associated with a sense of individualism and independence. Nevertheless, looking at Benson’s (1997) perspectives through which LA can be perceived and looked at, social and individual autonomy can be considered interrelated under the “technical perspective” category. This perspective represents and involves skills or strategies for unsupervised learning, including, for example, ‘metacognitive,’ ‘cognitive,’ and ‘social strategies,’ which can reflect both types of autonomy.

Joshi (2011) explains that learners’ autonomy is not linked with the learner’s learning only when away from the classroom, as learners can also show autonomy while in the classroom. All classroom plans, actions, and activities can become autonomous behaviors or behaviors that help promote autonomy. That also includes the management of learning, which can be reflected in cooperative learning and group work.

Presenting these interpretations is not driven by the purpose of adopting a specific term of LA in the current study. Rather, it highlights the bipolarity rendered by the term due to certain interrelated connotations, namely, individual and social concepts. We attempt to elucidate the relevance of PLSP discussion with the social aspects it conveys, namely individual and group LSs.

### **PLSP and its Relationship with LA**

Robotham (1995: 1) indicates that successful self-directed learners are those who have the flexibility and adaptability to choose from several learning styles, either from “a personal style” or “skills portfolio.” Similarly, Felder (1996) elaborates that a single learning task or profession may require more than a single preferred style, e.g., auditory and visual together, or individual and group skills. Therefore, self-directed learners may need a combination of their most and

least preferred learning styles to function effectively. This comes in line with Rossi-Le’s (1989) and Reid’s (1987) conclusions that, in second or foreign language learning, learners may opt for multiple learning styles. Furthermore, Oxford (2001) indicates that PLSs are not dichotomous and generally operate on a continuum.

Other researchers have drawn attention to the relationship between learning styles and self-directed learning, or LA, such as Theil (1984), Kolb (1984), and Long (1990), who were followed by several interested researchers, such as Oladoke (2006), Canipe (2011), and Ng and Confessore (2010).

According to Rossi-Le (1989), the association between learning style and second language acquisition (SLA) has emerged with a focus on learner-centeredness, similar to LA. Keefe (1987:5), cited in Rossi-Le (1989), defines learner styles as “characteristic cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment.” Although much research was conducted in this area, Rossi-Le elaborates that, within the cognitive domain specifically, the preferred perceptual modalities, i.e., auditory, visual, tactile, and kinesthetic, remained neglected until the emergence of the most comprehensive work of Reid (1987). Reid’s work per se also seems to embrace the relationship, which is indicated through Reid’s (1995: xiv) elaboration that understanding learning styles helps to enable students to take control of their learning.

Reid (1987; 1995) categorizes learners according to their preferred learning styles into six main categories: *Group style*: This style represents learners who learn collaboratively and interact with others when working in groups.

*Individual style*: This style describes learners who learn best when alone, i.e., working individually.

*Auditory style*: The preferred style of learners who depend on their ears or oral-aural learning channels to learn, i.e., they prefer listening materials or aids, such as audios, live, or recorded lessons.

*Visual style*: Learners who prefer this style depend on their visual perception for more learning. Thus, they prefer visual tools and aids, such as pictures and videos, as their most preferred learning materials.

*Kinesthetic style*: This style describes learners who learn effectively when using their whole-body movement, i.e., through their body experience.

*Tactile style:* Tactile learners prefer hands-on activities and experiments; they tend to learn through touching materials.

## Research on PLSP

Research has shown that some factors can help establish an understanding or prediction of specific language learners' learning preferences. For example, being a native or non-native speaker, as investigated by Reid (1987), which is mainly linked to the factor of diverse cultures, can be a determining factor in PLSP. For example, as summarized by Eliason (1989) and Foroutan et al. (2013), non-native speakers of English do not usually apply collaborative or group learning. Besides, as Reid (1987) concluded, non-native speakers, such as Chinese, Indonesian, Spanish, Korean, and Thai, use tactile and kinesthetic learning styles more than native speakers. Korean's dominant LS is the visual style. Arabs and Chinese learners are reported to prefer, besides kinesthetic, visual, and auditory LS. Malay English learners displayed a higher preference for the auditory style, unlike Japanese learners, who reported a lower preference for the auditory style.

PLSP has been researched by interested researchers in the context of SA, adopting Reid's work mainly, but most of their studies approached PLSP individually or concerning learning strategies. Alkahtani (2011) examined the PLS of Saudi EFL university students' PLSP, and the mode of instruction, such as online-based and class-based environments, was a variable. His study revealed that the mode of instruction was not a significant factor for students' PLSP; there was no significant correlation between learners' PLS and the instructional mode. In their study, the participants' most preferred PLS were ordered according to preference: tactile, auditory, visual, group, kinesthetic, and individual. Alsafi's (2010) study targeted sophomore medical students, who reported preferring mainly kinesthetic, auditory, and tactile learning styles.

Saadi's (2012) study, of which the Saudi sample constitutes 81.8%, revealed that the aural/auditory style comes at the top of the preferences list, followed by the kinesthetic style, as reported by 56 and 43 participants, respectively. The visual style in this study was less important to Saudi participants than other styles. Al Tale's (2016) study reported the same preferred styles by female EFL undergraduate students, yet visual was

only slightly more dominant than the other two styles. In Al-Hebaishi (2012), Saudi female English-major students chose the visual style as their dominant PLS, but Alkubaidi (2014) reported that they preferred auditory and group. Saud (2018) also investigated undergraduate Saudi female English-major students and found that her participants' social factor preferences (group and individual) were rated higher than their sensory styles, which came ordered as, although there were not many differences in the results, visual, tactile, kinesthetic, and finally, auditory.

A study by Alkahtani (2016) reported that the overall dominant PLSP among Saudi EFL students, based on an investigation of 667 freshmen, 440 male and 227 female, attending an intensive English program, were auditory and group styles. Alnujaidi's (2019) study showed that the most preferred learning styles among 155 EFL college-level students were kinesthetic, auditory, and group, respectively. Khalil and Sabir (2019) investigated the PLS concerning academic majors as a factor. They concluded that the kinesthetic learning style is the most commonly preferred among students of all majors. In addition, Albeshtawi's (2017) study also included college students and investigated the PLS of 108 participants in relation to the academic achievement factor. The author found that visual and kinesthetic styles are the most preferred, and tactile and individual styles are the least preferred. In addition, a significant relationship between learning style and academic achievement was reported.

## Research on the Relationship between LA and PLSP

Apart from the Saudi context, other studies in the EFL context attempted to study the relationship between PLSP and LA. Foroutan et al. (2013), examining the PLSP and LA of 360 Malay students, found that most Malaysian students are auditory learners. LA was significantly and positively correlated to each learning style, except individual and group learning styles. The highest contribution of learning styles to autonomy was made by auditory and visual learning styles, which suggests that being auditory or visual learners does not necessarily limit students' autonomy.

Investigating this relationship, Ng and Confessore (2010) employed the Learner Autonomy Profile they had designed, in which they investigated 249 Malay

university students on components developed by Confessore and Confessore (1994) and the Grasha-Riechmann Student Learning Styles Scales (Reichmann and Grasha, 1974). They found a significant positive relationship between preferred learning styles and learner autonomy profile scores.

Canipe (2001) examined the relationship between learning styles and self-directed learning readiness. His study included a cluster sample of 260 graduate students enrolled in spring classes at Morehead State University in Kentucky. The majority of his sample, 234, was Caucasian; they belonged to the location of the study. The study employed Kolb's (1984) Learning Style Inventory and Guglielmino's (1977) Self-Directed Learning Readiness Scale and found no significant differences between self-directed learning readiness and the four learning styles as defined by Kolb (1984). The results of this study also indicated that there were significant, albeit weak, correlations between self-directed learning readiness and two of the modes of learning: reflective observation and abstract conceptualization.

Banisaeid and Huang (2015) investigated the PLSP concerning self-regulated learning strategies through a sample of 204 Iranian EFL learners to identify the preferred styles of the more and less self-regulated and autonomous learners. Participants reported preferences for auditory, visual, kinesthetic, tactile, and individual LS. The study found visual and auditory learning styles were more related to self-regulated learners, while tactile, group, and individual styles were associated with less self-regulated learners.

In light of previous research findings on foreign language learners' autonomy, a few studies focused on connecting learners' autonomy with their perceptual learning style preferences. Therefore, this research intends to determine the degree of autonomous learning for the Saudi learners of English, their preferred learning perceptual styles, and the relationship between their perceptual learning styles and their autonomous practices and behaviors. The section below presents the research questions and describes the methodology and participants of the study.

## Research Questions

This study addressed the following research questions (RQs):

RQ1: To what extent can EFL Saudi university-level students be considered autonomous?

RQ2: What are the Saudi EFL students' preferences in terms of perceptual language learning styles?

RQ3: What is the relationship between Saudi EFL students' perceptual language learning styles and their autonomous practices?

## Methodology

The current study is quantitative, seeking to present descriptive and correlational data on participants' PLSP and LA through a survey of two questionnaires. It adopts Reid's most widely employed tool (1987, 1995) to analyze Saudi college students' preferred perceptual styles. Reid's tool includes 30 items on a five-point Likert scale, distributed under six main categories (visual, auditory, kinesthetic, tactile, group, and individual learning). The study employed Joshi's (2011) LA tool in order to achieve the second major focus of the current research project, participants' learning autonomy. Joshi's work has been adopted by several researchers interested in the area of LA in EFL contexts, such as Hayta and Yaprak (2013), Mısırlı, Koç, and Koç (2018), Ningsih (2018), Putra and Iswara (2019).

The tool developed by Joshi (2011) was built on the ideas of previous researchers, such as Zhang and Li (2004) and Lamb and Reinders (2008). The tool comprises seven subheadings: learner awareness, self-effort, broader autonomous activities, self-esteem, use of reference materials, motivation, and use of technology in learning. Similar to the tool employed to collect data about participants preferred perceptual styles, the tool used for learners' autonomy also comprises 30 items in which participants have to respond to one of five bands, scaled from A to E, representing never, rarely, sometimes, often, and always, respectively.

Researchers of the upcoming study produced two translation versions into the participants' first language, namely Arabic, for each of the adopted tools, then compared their translated versions to those employed by similar previous studies in the Arab context (e.g., Alkahtani, 2016). The translation was checked by two other researchers who were fluent in Arabic and English to ensure the validity of the questionnaire before collecting the data.

The researchers, after due approval from the research

committee, helped publish the questionnaires by contacting the coordinators and teachers of the target participants to reach the largest sample of participants possible. The survey was posted on Blackboard which is a learning management platform. Thus, data were collected electronically over two weeks, between March 31<sup>st</sup>, 2020 and April 14<sup>th</sup>, 2020. The respondents were briefed about the purpose of the study and were informed that their participation was voluntary. They were also informed that there was no right or wrong answer and that they might respond according to their observations or perceptions. They were also informed that the study results would by no means be related to their course grades. Prior to the analysis, the validity and reliability of the tool were checked. Previous research has indicated that both questionnaires are highly reliable. According to Alnujaidi (2019), the PLSP scale has good internal consistency, with a Cronbach alpha coefficient of .92 reported. In the current study, the Cronbach alpha coefficient was .95. For the LA questionnaire, the current study had an alpha coefficient of .84.

## Participants

A total of 856 students filled out the survey. However, after screening the dataset and checking for instances of outliers to ensure meeting the assumptions underlying the statistical tests, responses from only 828 students were counted in the present study. The sample includes 62.2% (n = 515) female and 37.8% (n = 313) male students, who belong to two main strands of academic majors: medical and health sciences (16.7%, n = 141) and humanities and sciences (n = 690, 83.3%). The majority of the students were either level 1 (n = 276, 33.3%) or level 2 (n = 396, 47.8%) first-year students who studied English through intensive programs offered by the English Language Institute (ELI) at Jazan University. The rest of the sample is distributed over other academic levels, from third to eighth levels, constituting students studying English either as an academic major or as a language for specific purposes (ESP).

## Results of the Study EFL University-level Students' Autonomy

**Table 1**  
**Learners' autonomy levels according to Joshi's (2011) categories.**

Scale	Number of items	Mean	Median	Std. Deviation	N
Learner Awareness	3	3.75	4	0.93	828
Learner Self-efforts	5	3.41	4	1.08	828
Learner Autonomous activities	5	3.38	4	1.10	828
Self-esteem	1	3.79	4	1.08	828
Use of reference	2	3.34	3.5	1.04	828
Self-Motivation	1	3.47	4	1.28	828
Use of technology	1	3.90	4	1.09	828
The role of learner	5	3.79	4	1.02	828
The role of the teacher	7	3.92	2	1.03	828
Total		3.56	4	.96	

Participants' autonomy levels are investigated and analyzed according to Joshi's (2011) main categories of awareness about LA and autonomous learning activities and plans and perceptions about teachers and learners' roles, which include nine subcategories: learner awareness, self-effort, broader autonomous activities, self-esteem, use of reference materials, self-motivation, use of technology in learning, perceptions about the role of the learner, and perceptions about the role of the teacher. Following Özdere (2005) and Mısırlı et al. (2018), regarding the five-point scale, means from one to 2.49 are a reflection of a low level, 2.50 to 3.49 are interpreted as moderate, and 3.50 to 5 are an indication of a high level of autonomy. Based on that, and as shown in Table 1 above, students reflected a high level of autonomy in using technology ( $M = 3.90$ ,  $SD = 1.09$ ), self-esteem and awareness about the learner's role ( $M = 3.79$ ,  $SD = 1.08$ ;  $M = 3.79$ ,  $SD = 1.02$ ), respectively, and awareness about learning autonomy ( $M = 3.75$ ,  $SD = 0.93$ ). Students generally reflected a moderate level of autonomy, ranging from  $M = 3.34$  to  $M = 3.92$ . However, students' perception of the teacher's role is considered a negative indication since the items under this category reflect a heavy reliance on the teacher. Thus, participants, although they can be considered either highly or moderately autonomous, still believe in teachers as an important agent in learning, which contradicts the first item in

the same category. However, to correlate the level of autonomy with the PLSP, the researchers reversed certain items before calculating the total grand mean of the whole questionnaire, which came out as  $M = 3.24$ , to reflect a moderate level of autonomy. However, considering the median analysis, participants can generally be considered highly autonomous, scoring four on a five-point scale, except for their perception of the teachers' roles. The interpretation of the teacher's roles is different by nature than the results of the other categories in the sense that the increase in this scale is considered negative, assuming high reliance on teachers. The result of this particular category before the reversal was high ( $M = 3.92$ ). Following Joshi's (2011) classification of the scale categories, the most reflective category of the LA is the first category, containing most of the sub-concepts that reflect LA. Therefore, to eliminate any possible ambiguity in the data, the researchers calculated the total mean while excluding the last two categories in the scale, i.e., perceptions about learner and teacher roles, and the mean and median results were also high,  $M = 3.56$  and median = 4, asserting a high autonomy level of the participants.

### EFL Students' Preferences in terms of Perceptual Language Learning Styles

**Table 2**  
**Learners' perceptual learning style preferences according to Reid's (1995) model**

Scale	Mean	Std. Deviation	N
Visual	3.87	0.91	828
Auditory	3.99	0.91	828
Kinesthetic	3.81	0.99	828
Tactile	3.69	1.04	828
Individual	3.32	1.18	828
Group	3.82	1.13	828

As shown in Table 2 above, participants generally reported preferences for all sensory and social learning styles as identified by Reid. However, the auditory learning style (M =3.99, SD = 0.92) and the visual learning style (M =3.87, SD = 0.94) were their most preferred learning styles. The tactile learning style (M =3.69, SD = 1.04), and the individual learning style (M =3.32, SD = 1.18), were their least preferred language

learning styles. Between these two highest and lowest sides of preferences, participants almost equally rated the kinesthetic and group learning styles, with M =3.81, SD =.99, and M =3.82, SD = 1.13, respectively.

**Relationship between EFL Students’ Perceptual Language Learning Styles and their Autonomous Practices**

**Table 3**  
**Correlation between Perceptual Learning Style and Autonomous Practices**

Variable	Visual		Auditory		Kinesthetic		Tactile		Individual		Group	
	r	p	r	p	r	p	r	p	r	p	r	p
1. Awareness	.442**	.000	.474**	.000	.431**	.000	.436**	.000	.259**	.000	.300**	.000
2. Self-efforts	.437**	.000	.404**	.000	.396**	.000	.414**	.000	.243**	.000	.338**	.000
3. Autonomous activities	.415**	.000	.419**	.000	.429**	.000	.424**	.000	.258**	.000	.311**	.000
4. Self-esteem	.456**	.000	.387**	.000	.590**	.000	.713**	.000	.222**	.000	.481**	.000
5. Use of reference	.455**	.000	.397**	.000	.433**	.000	.451**	.000	.273**	.000	.369**	.000
6. Self-Motivation	.333**	.000	.320**	.000	.342**	.000	.392**	.000	.172**	.000	.297**	.000
7. Use of technology	.399**	.000	.441**	.000	.390**	.000	.328**	.000	.250**	.000	.257**	.000
8. The role of learner	.447**	.000	.474**	.000	.379**	.000	.372**	.000	.259**	.000	.266**	.000
9. The role of teacher	-.426**	.000	-.457**	.000	-.426**	.000	-.403**	.000	-.142**	.000	-.351**	.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

To answer the third question, the Pearson product-moment correlation coefficient was computed to assess the relationship between participants’ perceptual learning styles and their autonomous practices. The analysis revealed, as shown in Table 3, positive relationships between Saudi students’ visual learning style and their awareness of language learning (r =.442, p =.000), their self-efforts in language learning (r=.473, p=.000), their autonomous activities (r=.415, p=.000), their self-esteem (r=.456, p=.000), their use of reference materials (r=.455, p=.000), their self-motivation (r=.333, p=.000), their use of technology (r=.399, p=.000), and their perception of the role of the learner (r =.447, p =.000). The correlation between students’ visual learning strategies and their perceptions of the role of the teacher was significantly negative (r = -.426, p = .000).

Concerning the Saudi students’ auditory learning style, the correlation analysis also showed significant positive relationships with their awareness of language learning (r =.474, p =.000), their self-efforts in language learning (r =.404, p =.000), their

autonomous activities (r =.419, p =.000), their self-esteem (r =.387, p =.000), their use of reference materials (r =.379, p =.000), their self-motivation (r =.387, p =.000), their use of technology (r =.441, p =.000), and their perception of the role of the learner (r =.474, p =.000). The correlation between students’ auditory learning style and their perceptions of the role of the teacher was significantly negative (r = -.457, p =.000).

The kinesthetic learning style was also found to correlate positively and significantly with students’ awareness in language learning (r =.431, p =.000), their self-efforts in language learning (r =.396, p =.000), their autonomous activities (p =.429, p =.000), their self-esteem (r =.590, p =.000), their use of reference materials (r =.433, p =.000), their self-motivation (r =.342, p =.000), their use of technology (r =.390, p =.000), and their perception of the role of the learner (r =.379, p =.000). The correlation between students’ kinesthetic learning style and their perceptions of the role of the teacher was significantly negative (r =-.426, p =.000).



The analysis also indicated that the tactile learning style correlated significantly and positively with students' awareness of language learning ( $r = .436, p = .000$ ), their self-efforts in language learning ( $r = .414, p = .000$ ), their autonomous activities ( $r = .424, p = .000$ ), their self-esteem ( $r = .713, p = .000$ ), their use of reference materials ( $r = .451, p = .000$ ), their self-motivation ( $r = .392, p = .000$ ), their use of technology ( $r = .328, p = .000$ ), and their perception of the role of the learner ( $r = .372, p = .000$ ). The correlation between students' tactile learning style and their perceptions of the role of the teacher was significantly negative ( $r = -.403, p = .000$ ). Besides, the analysis also indicated that both the individual learning style and the group learning style correlated significantly and positively with students' awareness in language learning ( $r = .259, p = .000$ ; and  $r = .300, p = .000$  respectively), their self-efforts in language learning ( $r = .243, p = .000$ ; and  $r = .338, p = .000$  respectively), their autonomous activities ( $r = .258, p = .000$ ; and  $r = .311, p = .000$

respectively), their self-esteem ( $r = .222, p = .000$ ; and  $r = .481, p = .000$  respectively), their use of reference materials ( $r = .273, p = .000$ ; and  $r = .369, p = .000$  respectively), their self-motivation ( $r = .172, p = .000$ ; and  $r = .297, p = .000$  respectively), their use of technology ( $r = .250, p = .000$ ; and  $r = .257, p = .000$  respectively), and their perception of the role of the learner ( $r = .259, p = .000$ ; and  $r = .266, p = .000$  respectively). The correlation between students' tactile learning style and their perceptions of the role of the teacher was significantly negative ( $r = -.142, p = .007$ , and  $r = -.351, p = .000$ , respectively). Furthermore, the autonomy scale, calculated as a grand mean of  $m = 3.24$   $SD = 0.49$ , is correlated with the PLSP scale. The results show a significant relationship between autonomy and all the LSs, ordered from the highest correlation downward: visual, auditory, tactile, kinesthetic, individual, and group. The difference between group and individual in terms of relationships with LA is not significant.

**Table 4**  
**Correlation between Perceptual Learning Style and Total Autonomous Practices (with items reserved)**

Variable	Total Autonomy Score 30 items (Reversed)	
	r	p
1. Visual	.466**	.000
2. Auditory	.452**	.000
3. Kinesthetic	.447**	.000
4. Tactile	.459**	.000
5. Individual	.318**	.000
6. Group	.317**	.000
**. Correlation is significant at the 0.01 level (2-tailed).		

The same test was repeated, yet excluding the items of the last two categories from the autonomy scale, with a mean of  $m = 3.56$   $SD = .96$ , and the results were similar

to the previous test in terms of the correlation size or quantity order, except with the last two styles, namely, group and individual.

**Table 5**  
**Correlation of Perceptual Learning Style and Total Autonomous Practices (excluding The Role of Learner Perception and Perceptions of Teachers' Roles)**

Variable	Total Autonomy Score except for the 2 scales	
	r	p
1. Visual	.498**	.000
2. Auditory	.495**	.000
3. Kinesthetic	.474**	.000
4. Tactile	.485**	.000
5. Individual	.303**	.000
6. Group	.377**	.000

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## Discussion

In this study, autonomy is treated as an independent factor in PLSP. A comparatively good level of autonomy shown by participants in this study refutes the common assumption argued by some scholars, for example, Pennycook (1997), Palfreyman (2003), and Adamson and Sert (2012), about EFL, Asians, and Arabs' resistance to the 'imported', 'western', concept of LA. Quite a good level of LA displayed by the participants also counters the common belief drawn by several studies in Saudi contexts about Saudi learners' LA levels being low to moderate (e.g., Borg and Alshumaimeri, 2017; Alrabai, 2018). Participants in the current study revealed moderate to high, rather than low to moderate, levels of LA. Regardless of all the positive findings across all of the presented categories, the findings on the teacher's role still represent the stereotype about the Saudi classroom as being teacher-dependent or teacher-led. Usually, classrooms of this type produce passive, non-autonomous learners (Littlewood, 1999), which cannot be entirely applicable to the participants

in the current study, bearing in mind their LA scores in the other categories. Indeed, through several studies, Saudi learners display a solid attachment to teachers as the central learning authority (e.g., Alrabai 2017; Asiri & Shukri, 2018) while expressing other autonomous activities.

The current study corroborate Benson's (2006) and Dam's (1995) claims about traditional classrooms as typical possible contexts for promoting LA. The findings of the present study suggest that Saudi learners are either in the process of or have surpassed LA's development process.

Regarding the participants' PLSP, participants displayed a multimodal orientation of preferences, reflecting all the preferences reported differently and variedly throughout the reviewed studies in the Saudi context. More specifically, based on the order of preferences—auditory, visual, and kinesthetic—participants in this study reflect Reid's (1987) conclusion about Arab learners, except for the group learning style. Participants also resemble Saadi (2012), Alkubaidi (2014), and Alkahtani's (2016) participants

in terms of the most preferred LS, auditory. They are also congruent with the Malay participants in Foroutan et al.'s (2013) study. That said, by listing the auditory style as the dominant LS, findings of the current study are incongruent with those reported by Saud (2018) in the Saudi context, which show showed that the auditory LS is the least preferred among students.

In general, by preferring auditory, visual, kinesthetic, and group, the participants conform with most of their counterparts in Al Tale's (2016), Albeshtawi (2017), Alnujaidi's (2019), Khalil and Sabir's (2019), and Alsafi's (2010). In terms of the least preferred styles, tactile and individual, the current study conforms with Albeshtawi (2017), which shows these two styles as the participants' minor LS. In this particular aspect, the study is, at the same time, in the opposite position with Alkahtani (2011), in which tactile is at the top of the preference list, and with Saud (2018), which reveals a strong preference by Saudi EFL for the individual LS. On the level of EFL contexts in general, Saudi EFL learners in this study reveal similar preferences, namely auditory as a primary LS, to those exhibited in the Malay context in Foroutan et al.'s (2013) study. The current study is congruent with Banisaeid and Huang (2015), who showed that the participants' preferred styles were auditory, visual, and kinesthetic. However, it contradicts the same study in terms of tactile and individual LS.

Generally, the relatively even distributions of preferences across all the LSs assert Reid (1987), Rossi-Le (1989), Robotham (1995), and Felder's (1996) views on the dynamic nature of autonomous learners in general and EFL learners in particular in terms of operating multiple LSs.

Another possible interpretation of this result may also be pertinent to the research sample size which is somehow large and includes participants from a vast range of unanalyzed distinguishing factors. However, it can be concluded that, nowadays, it is difficult and, at the same time, irrational to associate a particular context or learner with a specific learning style. Every context has become a mixture of different types of cultures, races, and genetics. Accordingly, the learning styles, as in the lifestyles, would be varied and mixed, either due to the varied inherited or 'picked-up characteristics.

Through the correlational tests conducted to examine the relationship between the LA and PLSP, the relationship was positively significant across all

the categories of LA behaviors, except between the teachers' role category and all the PLSPs. This latter finding asserts the implausibility of including the views of teachers as facts determining learners' autonomy due to the cultural beliefs in EFL as highlighted in the literature review. Put that aside, participants seem to accommodate at similar levels all the addressed categories of LA behaviors, which correlate with LA at comparatively equal levels.

In other words, participants' homogeneity is indicated by the analyzed overall level of LA and its correlation with the investigated PLSP. That is, LA is not exclusively correlated with a specific type of PLS. Thus, LA degrees are not influenced by a particular PLS, and consequently, learners with different PLSPs can be equally autonomous. This may suggest that learners in the 21st century share several attributes, perhaps on account of numerous factors such as globalization and the indispensable role of technology.

Through the positive relationship indicated between the two investigated constructs, the current study is congruent with all the reviewed studies that found significant relationships between LA, self-directedness, or self-regulation, and PLSP, such as Canipe (2001), Ng and Confessore (2010), Foroutan et al. (2013), and Banisaeid and Huang (2015). It is also similar to Foroutan et al. (2013) and Banisaeid and Huang (2015), particularly in the significant correlations between the auditory and visual LS and LA and the low association of individual and group LSs with the same construct, i.e., LA.

## Conclusion

This study aimed to contribute to the literature on the relationship between EFL Saudis' perceptual styles and their autonomous practices and behaviors. Consistent with previous research, the study has further affirmed a significant positive association between learner autonomy and the six categories of learning styles identified by Reid (1987). At the same time, it asserts that the "social" styles in this model should be treated differently in future research due to their low association, in comparison with the "sensory," with learner autonomy.

The fact that the data shows all the preferred perceptual learning styles in the context of the study do not limit or influence the extent of learners' autonomy asserts

the homogeneity of the participants in terms of learning autonomy. This finding could significantly contribute to the field of LA, suggesting the ubiquity of this construct if interpreted in light of the learner's attributes in the 21st century. It is suggested that EFL teachers be aware of their learners' needs, autonomy, and preferred learning styles to facilitate more effective language learning.

The study also highlights the recurring overlap between learners' awareness of autonomy over various scales and their perceptions of teachers. Delineations about EFL educational settings in general and the Saudi context in particular, which are recurrently referred to in the literature, regarding the cultural perspective of the teacher in such contexts, are still valid. This validity may establish a new ground for definitions and interpretations of autonomy in those contexts, which should reorient teachers' perceptions and learners' dependence upon them while adopting other autonomous practices. Future research can explore this by expanding the scope of the current study and employing multiple measures to capture the issue from different perspectives.

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