Journal of Studies in Learning and Teaching English Vol. 1, No. 4, (2013), 1-21

# Relationship Between Learning Styles Of Advanced Iranian EFL Learners and Their Achievment

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Abstract. This study investigated language learning styles of Iranian EFL learners and their class achievement. To this end, sixty female advanced learners of instruction and different ages (15-30), studying at a language institute in Shiraz were asked to take part in the study. A 30-item language learning styles questionnaire developed by Reid (1987) was employed to elicit information for the study. The data obtained through the questionnaire were subjected to Pearson correlation in order to check the relationship between the learning style and class achievement. Results showed that students use different learning styles in class and indicated that kinesthetic and group learning styles were the most favorable ones among Iranian EFL learners. The aforementioned styles positively correlated with the learners' achievement.

**Keywords:** Learning preferences, class achievement.

# 1. Introduction

Teaching English as a Second or Foreign Language (ESL/EFL) has changed tremendously over the past two decades. Curricula, teaching

Received: October 2013; Accepted: December 2013

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methods, and teaching materials have been developed to meet the changing needs of the ESL/EFL population. Research on learning styles, has provided teachers with a different view of learning and demonstrated how to apply it to classroom teaching. An awareness of individual differences in learning has made ESL/EFL educators and program designers more sensitive to their roles in teaching, learning and learners' success and course achievement.

A learning style is a student's consistent way of responding to and using stimuli in the context of learning. Keefe (1979) defines learning styles as the "composite of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment". (p.15). Stewart and Felicetti (1992) define learning styles as those "educational conditions under which a student is most likely to learn". Thus, learning styles are not really concerned with "what" learners learn, but rather "how" they prefer to learn.

Students preferentially take in and process information in different ways: by seeing and hearing, reflecting and acting, reasoning logically and intuitively, analyzing and visualizing, steadily and in fits and starts. According to Reid (1987), the different ways of how a learner acquires, retains and retrieves information are collectively termed as learning styles or learning preferences. She contends that learning styles are internally based characteristics, often not perceived or consciously used by learners, for the intake and comprehension of new information. In general, students retain these preferred learning styles despite the teaching styles and classroom atmospheres they encounter, although the students may, overtime, acquire additional styles.

A comprehensive definition is given by Keef (1989) who describes learning styles as the cognitive, affective, and physiological factors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment. Included in this comprehensive definition are "cognitive styles" which are intrinsic information-processing patterns that represent a person's typical mode of perceiving, thinking, remembering, and problem-solving.

Celce-Murcia (2001) defines learning styles as the general approaches-

for example, global or analytical, auditory or visual-that students use in acquiring a new language or in learning any other subjects. These styles are the overall patterns that give a general direction to language behavior. Brown (2000) defines learning styles as the manner in which individuals perceive and process information in learning situations. He argues that learning preferences is one aspect of learning style, and refers to the choice of one learning situation or condition over another.

As every teacher discovers, no two students approach learning in exactly the same way. Some get more from visual imagery while others prefer verbal explanations; some tend to try things out and see what happens and others are more inclined to think things through first; some reason in a relatively sequential manner and others have a more holistic orientation; some are most comfortable with concrete ("real-world") information and others are more drawn to abstract theories and symbolism, and so on.

Research on learning styles is based on the assumption that learners receive information through their senses and prefer some senses to others in specific situations (O'Brien 1989, Oxford & Ehrman 1993, Kroonenberg 1995). Usually, students learn more effectively when they learn through their own initiatives. When their learning styles are matched with appropriate approaches in teaching, then their motivation, performances, and achievements will increase and be enhanced (Brown, 1994). Thus, researchers and educators try to establish optimal environmental and psychological climates that foster learning by allowing students to learn in accordance with their own preferred learning styles.

Researchers have tested some hypotheses about L2 learning. One of the most well-researched areas is field-independence (FI)/field dependence (FD). FD/FI refers to how people perceive and memorize information (Chapelle, 1995). The FD individual is a global learner who is socially oriented and extrinsically motivated. Conversely, the FI individual is an analytic learner who tends to work independently (Ramirez & Price-Williams 1974).

Results tend to show that FI correlates positively and significantly with language success in the classroom (Brown, 1994; Chapelle, 1995). Abraham (1985) found that L2 learners with FI styles were more suc-

cessful in deductive lessons, while those with FD styles performed better in inductive lessons. Chapelle and Abraham (1990) also found a correlation between the FI style and language success.

#### 2. Literature Review

#### 2.1. Definitions of learning styles

Learning styles are internally-based characteristics of individuals for the intake or understanding of new information (Reid, 1995). All learners have individual attributes relating to their learning processes. Some people may rely heavily on visual presentation; others may prefer spoken language; still others may respond better to hands-on activities. It is evident that people learn differently and at different paces because of their biological and psychological differences (Reiff, 1992). Naturally, these differences in learning abound in any ESL/EFL setting where students come from different cultural and educational backgrounds.

A learning style is multidimensional (Kinsella, 1996). Its elements can be classified into five stimulus categories: environmental elements (sound, light, temperatures, and design), emotional elements (motivation, persistence, and responsibility), physical elements (perception, intake, time, and mobility), and sociological elements (self, partner, team, mentor, varied), psychological elements (global/analytical, impulsive/reflective) (Reiff, 1992). Clearly, learning styles include not only the cognitive domain, but also the affective and physiological domains (Oxford and Ehrman, 1993).

On the other hand, Reid (1987) believes that learning styles are points along a scale that help us to discover the different forms of mental representations; however, they are not good characterizations of what people are or are not like. We should not divide the population into a set of categories (i.e., visual and auditory learners). What these various instruments attempt to do is to allocate a person on some point on a continuum (similar to measuring height or weight). In other words, do not pigeonhole people as we are all capable of learning under almost any style, no matter what our preference is.

# 2.2. Categorizations of learning styles

#### 2.2.1. Brown's category

Language researchers have categorized the various learning styles in numerous ways. Brown (2000), in discussing language learning style, classifies language learners into several categories. The following table presents these categories.

 Table 1. Browns' categorization of learning styles

Visual learners	Usually enjoy reading and prefer to see the words that they are learning. They also like to learn by looking at pictures and flashcards.			
Auditory learners	Prefer to learn by listening. They enjoy conversations and the chance for interactions with others. They don't need to see words written down.			
Tactile learners	Learn by touching and manipulating objects. This is known as "hands-on" work.			
Kinesthetic learners	Like movement and need frequent breaks in activities.			
Field-independent	(Also called analytic learners) like to concentrate on the details of language, such as grammar rules, and enjoy taking apart words and sentences. They are sometimes unable to see the "big picture" because of their attention to its parts.			
Field-dependent learners	(Also known as global learners) focus on the whole picture and do not care so much about the details. For example they are more interested in conveying an idea than worrying about whether it is grammatically correct.			
Reflective learners	Like to think about language and how to convey their message accurately. They tend not to make so many mistakes because they take time in formulating what they want to say.			
Impulsive learners	Take risks with the language. They are more concerned with speaking fluently than speaking accurately, and so make more mistakes.			

# 2.2.2. Reid's category

Reid (1995) divides learning-style research into three major categories: cognitive learning style, sensory learning style, and personality learning styles.

#### Cognitive learning style

Field-independent/field-dependent learning styles: Field-dependent learners learn more effectively step by step, beginning with analyzing facts and proceeding to ideas. Field dependent learners, in contrast prefer to learn in context and holistically.

Analytic/global learning style: Analytic learners learn individually, and prefer setting goals. Global learners, on the other hand, learn more effectively through concrete experience, and by interaction with other people.

Reflective/impulsive learning style: Reflective learners learn more effectively when they have time to consider options before responding. This is while, impulsive learners are able to respond immediately and take risks.

# Sensory learning style

# Perceptual learning styles

Auditory learner: learns more effectively through the ear (hearing).

Visual learner: learn more effectively through the eyes (seeing).

Tactile learner: learn more effectively through touch (hands on)

Kinesthetic learner: learns more effectively through body experience (whole body movement)

Haptic learner: learns more effectively through touch and whole body involvement.

#### Environment learning style

Physical learner: learns more effectively when such variables as temperature, sound, light, food, mobility, time and classroom/study arrangement are considered.

Sociological learner: learns more effectively when such variables as group, individual, pair, and team work, or level of teacher authority are considered.

# Personality learning styles

**Extroversion vs. introversion:** Extroverted learner: learns more effectively through concrete experience, contacts with the outside world, and relationships with others.

Introverted learners, on the other hand, learn more effectively in individual, independent situations that are more involved with ideas and concepts.

**Sensing vs. perception:** Sensing learner: learns more effectively from reports of observable facts and happenings; prefers physical, sense-based input. Sensing people choose to reply on their five senses. This is while, *Perception learner:* learn more effectively from meaningful experiences and relationship with others.

Thinking vs. feeling: Thinking learner learn more effectively from impersonal circumstances and logical consequences. On the other hand, Feeling learners learn more effectively from personalized circumstances and social values

**Judging vs. perceiving:** *Judging learner* learns more effectively by reflection, analysis, and processes that involve closure. *Perceiving learner*, in contrast, learn more effectively through negotiation, feeling, and inductive processes that postpone closure.

Ambiguity-tolerant learner vs. ambiguity-intolerant learner: ambiguity-tolerant learners learn more effectively when opportunities for experience and risk, as well as interaction, are present. Ambiguity-intolerant learner, however, learns more effectively when in less flexible, less risky, more structured situations.

**Left-brained vs. right-brained:** Left-brain learners tend toward visual, analytic, reflective, self-reliant learning. On the other hand, right-brained learners tend toward auditory, global, impulsive, interactive learning.

# 2.3. Language learning styles preferences research

#### 2.3.1. Learner's learning preferences

Over the years researchers have started to work on the learning preferences. Research that identifies and measures perceptual learning style relies primarily on self-reporting questionnaire by which students select their preferred learning styles. Reid (1987), for example, based on the findings of a survey, distinguished four perceptual learning modalities:

- 1) Visual learning (for example, reading and studying charts)
- 2) Auditory learning (for example, listening to lectures or audiotapes)
- 3) Kinesthetic learning (involving physical responses)
- 4) Tactile learning (hands on learning, as in building models)

By using perceptual learning style preferences questionnaire (PLSPQ) she asked 1388 students to identify their perceptual learning style preferences. Generally speaking, the results of the study showed that ESL students strongly preferred kinesthetic and tactile learning styles. Most groups showed a negative preference for group learning. Graduate students indicated a significantly greater preference for visual and tactile learning than undergraduates. Both graduates and undergraduates strongly preferred to learn kinesthetically and tactilely. With regard to the effect of sex, males preferred visual and tactile learning significantly more than females. With respect to age, the results showed that the older students, the higher the preference means for visual, auditory, kinesthetic, and tactile learning. Regarding language background, Korean students were the most visual in their learning style preferences; they were significantly more visual than U.S and Japanese students. Arabic and Chinese groups were also strong visual learners. Reid came to the conclusion that the learning style preferences of nonnative speakers often differ significantly from those of native speakers; that ESL students from different language backgrounds sometimes differ from one another in their learning style preferences; and that variables such as sex, length of time studying English in the U.S, field of study, level of education, TOEFL score, and age are related to differences in learning style; and that modifications and extensions of ESL student learning style may occur with changes in academic environment and experience. The weak point of her study is that there is no mention of the teacher's attitudes toward the learning preferences of their students.

Hyland replicated the study by Reid (1987) of the learning style preferences of ESL learners in the US. Reid's questionnaire asking students to identify their perceptual learning preferences was administered in either Japanese or English to 440 students at 8 universities in Japan. His study confirmed Reid's findings that Japanese learners appear to have no strong learning style preferences, a fact which might help explain

the language learning difficulties experienced by many Japanese students. Moreover, because the visual modality is a negative style for many Japanese, many students are unable to take full advantage of an education system which emphasized the importance of reading texts, composition and written grammar exercises. On the other hand, students with mixed modality strength are able to process information in a number of ways and often have a better chance of success than do those with single modality strength. The research suggests that while Japanese learners have no major learning style preferences, they appear to favor three modalities and individual learning as minor styles. They expressed preferences for auditory, tactile and kinesthetic.

Wintergerst and DeCapua (1998) attempted to identify the learning styles of ESL students through an analysis and comparison of participants' responses to three elicitation instrument: Reid's (1987) PLSPQ, a background questionnaire, and data from oral interviews. The study participants were undergraduate Russian-speaking students enrolled in credit-bearing intermediate or advanced ESL courses. There were 32 participants at two private institutions of higher learning in metropolitan New York-a major university in New York City and a small college on Long Island. Findings from the data indicated that the preferred major learning style of these Russian-speaking students was kinesthetic, closely followed by auditory. In addition, the results of the data suggested that the learning style preferences of these participants reflected more their personal learning style preferences than the influence of cultural traditions. This finding was an outcome of comparing the participants, PLSPQ responses with those from the oral interviews of a sampling of the population. Descriptions, however, arose in the findings among the three elicitation instruments, raising questions with respect to the reliability and validity of the PLSPQ.

#### 2.3.2. Effect of learning style on course achievement

There have been many attempts made to enhance students' academic achievements. It has always been the main concern of many dedicated teachers and parents that their students and children be as much successful as possible. In relation to this, many teachers are convinced that

students need the positive attitude to succeed academically. Often, one's learning style is identified to determine strengths for academic achievement. Dunn, Beaudry and Klavas (1989) assert that through voluminous studies, it has been indicated that both low and average achievers earn higher scores on standardized achievement and attitude tests when they are taught within the realm of their learning styles.

Chuah Chong-Cheng (1988) discusses the importance of learning styles as being not only necessary, but also important for individuals in academic settings. Most students favor to learn in particular ways with each style of learning contributing to the success in retaining what they have learnt. As such, studies carried out conclude that students retain %10 of what they read, %26 of what they hear, %30 of what they see, %50 of what they see and hear, %70 of what they say, and %90 of what they say as they do something (Chuah Chong-Cheng, 1988). These facts reveal that each learning style has its own strengths and weaknesses. Some students learn in many ways, while others might only favour one or two. Those students with multiple learning styles tend to gain more and obtain higher scores compared to those who rely solely on one style (Dunn, Beaudry & Klavas, 1989). Additionally, the differences in learning styles have also been reported between gifted and the underachievers; between the learning disabled and average achievers; among different types of special education students; and among secondary students in comprehensive schools and their counterparts in vocational education and industrial arts (Dunn & Dunn, 1986). Some special students favor Kinesthetic instruction, such as experiential, active and hands-on, while many others are more auditory and visually oriented (Dunn, 1991). International Journal of Humanities and Social Science Vol. 1, No. 10; August 2011, 145.

Dunn and Dunn (1986) also believe that low achievers tend to have poor auditory memory. Although they often want to do well in school, their inability to remember information through lecture, discussion, or reading causes their low achievement especially in traditional classroom environment where teachers dominate and students mostly listen or read. It is not only the low achievers learn differently from the high achievers, they also vary among themselves. Impulsive students for instance, when compared to reflective ones, show poor academic achievement (Kagan & Kagan, 1970).

Other studies show that Field Independent students achieve more than Field Dependent ones (Chapelle, 1995). Studies also reveal that matching teaching and learning styles can significantly enhance academic achievement at the primary and secondary school levels (Smith & Renzulli, 1984). According to Felder (1995), students learn more when information is obtainable in a variety of approaches than when only a single approach is applied. Much experiential research indicates that learning styles can either hamper or increase academic performance in several aspects even though not much research has been conducted on the relationship between instructional design of learning materials and learning styles (Riding & Cheema, 1991). In general, rich data have been obtained through studies on learning styles; however, the data have rarely been exploited by designers of instructional programs thereby a greater understanding of learners' approaches to learning can be obtained.

Considering the aforementioned literature and the problems depicted above, attempts were made in this study to address the following questions:

- 1. What are the language learning styles of Iranian EFL learners?
- 2. Is there any relationship between individual learning style preferences and student achievement?

#### 3. Objectives of the Study

On the basis of what was said above, the present study aims at determining the learning styles of a group of EFL learners and investigating the relationship between their learning styles and their academic achievement. That is, some learning styles may relate to learner's achievement in English language classes. This study aims to find if individual learning style preferences have any influence on student achievement of course content.

#### 4. Method

#### 4.1. Participants

Participants in this study consisted of 60 female advanced learners studying English at a language institute in Shiraz. They were all native speakers of Persian and ranged from 20 to 35 in age. The students were recruited (based on the convenient sampling) from four classes the researcher had access to.

#### 4.2. Instruments

The instrument used in this study was a 30-item questionnaire developed by Reid (1987). In this questionnaire students were supposed to state how they preferred to learn the language, for example, whether they benefited from working in groups, pairs, or individually. This questionnaire was used to determine the learners' learning styles preferences that can be categorized into six major learning styles: visual, tactile, auditory, group, kinesthetic, and individual learning style. Each item in the questionnaire explores a particular learning style. In this questionnaire students were asked to state whether they are strongly agree, agree, undecided, disagree or strongly disagree with the statements. The maximum score for each item is 25.

#### 4.3. Procedures for data collection

An English language institute was selected for this study. After obtaining the teachers' permission for conducting the research, the Reid's questionnaire was administered some weeks before the students' final exam. The questionnaires were administered after the students' regular class time. The required data were collected in one session. The time for administration was about 20 minutes. Prior to distributing the questionnaire, the researcher explained briefly to each class the purpose of the study and the survey procedures, and then obtained each individual's consent by mentioning that the survey would be anonymous, that their answer will not affect their grades, and the data would be kept confidential. Instruction as how to complete the questionnaire was given in Persian. Students could ask any questions about the content of the questionnaire if they came to any vague point. Most of the data collection

was carried out by the researcher herself, and some with the cooperation of the colleagues. Finally, after their final exam, their scores were gathered by the researcher to determine the student's achievement based on their learning styles.

#### 4.4. Data analysis

To analyze the data, SPSS 16 was used. To analyze the information of learning styles questionnaire, descriptive statistics was used and for finding the relationship between the variables, Pearson Product Moment Correlation Coefficient was used.

#### 5. Results and Discussion

The responses to the research questions are examined in the following section. In order to test the null hypotheses for each research question, paired sample t-tests were performed.

## 5.1. Student's responses

**Table 2.** The mean score and standard deviation of students' learning style descriptive statistics

	N	Mean	Std. Deviation
visual	60	36.2333	5.53683
tactile	60	32.0000	8.28313
auditory	auditory 60 3		5.40046
group	60	38.3667	8.10517
kinesthetic	60	40.5333	7.20515
individual	60	28.3000	9.06343
Valid N (listwise)	60		

As this study has tailored Reid's measuring instrument (1987), the results were compared to Reid's assigned mean score classification of major, minor and negligible learning style categories. The preference mean score for each set of variables was divided into three categories, namely,

major, minor and negligible learning styles. The mean score of 38 and above represented the major learning style while the mean range between 25 and 37 stood for the minor learning style, and finally a mean score of 24 or less showed a negligible learning style. Table 2 displays the mean scores and standard deviation of students' learning style dimensions. The highest mean score of 40.54 belonged to kinesthetic learning style while the lowest mean score of 28.30 was obtained for individual learning style. The high mean score reflects major learning style for auditory, Kinesthetic and group type in descending order of preferences. The result indicated that most students possessed multiple learning styles.

Table 3. The percenta	ge of learni	ng style usag	e

Learning styles	N	%
Visual	5	8.33
Tactile	2	3.33
Auditory	14	23.33
Group	15	25
Kinesthetic	20	33.33
Individual	4	6.67

It can be concluded from the results (Table 2) that learners seem to favor a communicative approach to language learning by showing reluctance to working on their own. As shown, only %6.67 of students expressed their preference for working individually, although it is less stressful than talking in pairs or groups. On the other hand, %25 of the students preferred other ways of learning the language, such as learning in pairs or groups. This study is in line with Witergerst, DeCapua, and Marlyn (2003) whose findings revealed that language learners clearly prefer group activity over individual work, with the Russian EFL and Asian ESL students favoring group work and project work.

Regarding Kinesthetic learning style, students, by %33.33 expressed their interest toward learning English by doing something in class or participating in role-playing. Group learning style also received relatively high percentage from students (%25). It seems they feel more comfortable, productive, and relaxed by working in their ways, e.g. in pairs, or in groups where their voices would be heard, and views listened to and valued. This can be a massage for teachers not to get their students to work alone. Rather it is more faithful to encourage them to have interaction with each other and share ideas. One advantage of this practice may be the fact that such interaction provokes greater involvement and participation than working individually. It fosters learner responsibility and independence, can improve motivation and contribute to a feeling of cooperation and warmth in class. Such findings are in line with Wintergerst, DeCapua, and Marlyn (2003) study which claimed language learners clearly prefer group activity to individual work. However Reid's (1987) study contradicts such findings. The findings of her study revealed that ESL learners gave group work a minor or negative preference mean. Her findings are the opposite of what proved to be true in the present study. As can be seen auditory learning style also received a high percentage (%23.33) after kinesthetic and group learning style. On the other hand visual and tactile learning styles received a low percentage as %8.33 and %3.33 that may be due to the lack of equipment in this area.

# 5.2. The relationship between different learning styles and class achievements

**Table 4.** Correlation between class achievement and students' learning styles

		visual	tactile	auditory	group	kinesthetic	individual
Achievement	Pearson Correlation	096	.085	032	.426**	.290*	493**
	Sig. (2-tailed)	.467	.519	.808	.001	.024	.000
	N	60	60	60	60	60	60

As mentioned earlier, the main objective of the present study was to find out the relationship between different learning styles and students' class achievement. To this end, student's final scores were compared with their learning styles to discover which students are more successful in English classes. That is, whether students who use the group learning styles are more successful or students who use the individual learning style.

Items 6, 10, 12, 24 and 29 asked about visual learning style. Based on Table 4.1, only %8.33 of the learners expressed their willingness towards learning visually. As it is clear from the table above, in the correlations table there is no significant correlation between the visual learning style and learners' achievement.

Items 11, 14, 16, 22, and 25 asked about tactile learning style, these items asked if they prefer to learn things by doing something or making drawings as they study. It is obvious that it is the least favorable learning style among this group as only %3.33 of them used it. And there is no significant relationship between tactile learning style and class achievement.

The next 5 items ask about auditory learning style (1, 7, 9, 17, and 20) that is more popular among this Iranian EFL group but there is no relationship between this style and student's achievement.

In items 3, 4, 5, 21, and 23, students were asked about if they prefer to learn language in groups or working on an assignment with some classmates. Correlational analysis suggests a significant positive correlation between the student's achievement and group learning style. Students by %23.3 were of the opinion that they enjoy working on an assignment with two or three classmates and they prefer to study with others. In other words as the students, use of group learning style increases their class achievement increases too.

Items 2, 8, 15, 19, 1nd 26 were about kinesthetic learning style which received the highest percentage among the other learning styles and showed a positive correlation.

Items 13, 18, 27, 28, and 30 asked about individual learning style. As is apparent from Table 4 there is a significant negative correlation between the individual learning style and the class achievement.

#### 6. Conclusion

Some major points concluded from the study are summarized below:

- 1) Regarding working styles, students do not like working individually.
- 2) Types of learning styles that emphasize productive skills appeal to students more than receptive skills. They do not like to be sitting passively in classroom, but to be engaged in classroom practices,
- 3) Students' most favored learning styles are kinesthetic and group learning styles. And their least favored one is individual learning style.
- 4) There is a positive correlation between kinesthetic and group learning styles and the student's achievement. The more they used these styles the better scores they received.
- 5) There is a negative correlation between individual learning style and class achievement. The more they used this style the lower scores they received.
- 6) There is a strong correlation between kinesthetic, group, tactile and auditory learning styles, that is, as the learners, use of kinesthetic style increase the use of group, tactile and auditory increases.
- 7) There is a negative relationship between kinesthetic, group, auditory and individual learning styles. In other words, as the learners, use of kinesthetic, group and auditory increase the use of individual learning style decreases.

#### 7. Pedagogical Implications

The findings of this study are helpful to students in demonstrating the importance of learning style identification. Students are recommended to identify the best way(s) through which they can learn language more fruitfully. Knowledge of one's learning style may be beneficial in that the learner will now be aware of his or her strength and weaknesses in terms of learning experiences. Therefore, future learning may be enriched if the learners maintain their strength and improve on their weaknesses. Aside from that, this process will improve one's self-esteem because now the students will feel more comfortable and prepared to take on the learning challenge, also give students the confidence needed to achieve their goals.

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