EFL Male and Female Learning Styles and Multiple Intelligences; A Case of Iranian EFL University Students

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Abstract

This study was an attempt to investigate a learning style and multiple intelligences survey distributed among two groups of senior-level EFL male and female students to use appropriate techniques and activities for different gender. Two standardized instruments were used during the data collection process. It should be noted that a t-test was conducted to conclude the differences between male and female groups. Since there was the same survey as a data elicitation instrument, it was possible to easily compare the results from the two groups. Furthermore, sufficient considerations of both audiences were taken into account during the design of the survey. The first part of the survey aimed at the students' desired learning styles and the second part focused on multiple intelligences. Data analysis displayed the prevailing learning styles and multiple intelligences in each group. Furthermore, findings revealed that prevailing learning style preferences of the male group were visual, global, closure-oriented, extroverted, and intuitive learning style, respectively, whereas the female group preferred mostly a global, intuitive, closure-oriented, a visual, and finally an extroverted learning style. The findings of the study indicated that knowing the strengths and potentials of the male and female students regarding their multiple intelligences and learning styles would help both language teachers and students in order to make progress, develop language skills, and select appropriate syllabus designs and language learning methods.

Keywords: **Cross-gender studies, Learning styles, Multiple intelligences**

1. Introduction

In the present century; two important theories have been put forward in order to explain the individual differences, and to arrange learning environments according to these individual differences. The first one is The Learning Styles Theory which deals with how the individuals obtain, process, and remember the new and difficult academic information; and the other one is The Multiple Intelligence Theory which explains that individuals have different multiple intelligence domains, and all of the individuals can learn if they are taught by regarding their prevailing intelligence domains. Learning Styles Theory suggests changing the traditional instructional methods to benefit from the individuals' learning styles; and features the process by emphasizing how to perform the instruction, whereas The Multiple Intelligence Theory emphasizes what to be instructed, in other words, the product. Moreover, The Multiple Intelligence Theory provides a new

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approach in education and is the most important theory put forward in personal development area. The essence of the theory contains lifelong development and learning. According to The Multiple Intelligence Theory, every individual can have different level of multiple intelligence domains. The individuals can be highly developed in certain intelligence domains, and less developed in certain other intelligence domains. In education, this means that the individuals who have different intelligence types have different learning styles. Every student can learn when the instructional activities were arranged according to the students' intelligence types (Armstrong, 2008).

Almost 80 years after the first intelligence tests were developed; a Harvard psychologist named Howard Gardner challenged this commonly held belief. Saying that our culture had defined intelligence too narrowly, he proposed in the book Frames of Mind (Gardner, 1993a) the existence of at least seven basic intelligences. More recently, he has added an eighth and discussed the possibility of a ninth (Gardner, 1999). In his theory of multiple intelligences (MI theory), Gardner sought to broaden the scope of human potential beyond the confines of the IQ score. He seriously questioned the validity of determining intelligence through the practice of taking individuals out of their natural learning environment and asking them to do isolated tasks they'd never done before—and probably would never choose to do again. Instead, Gardner suggested that intelligence has more to do with the capacity for (1) solving problems and (2) fashioning products in a naturalistic settings (Armstrong, 2008).

According to Armstrong (2008), once this broader and more pragmatic perspective was taken, the concept of intelligence began to lose its mystique and became a functional concept that could be seen affecting people's lives in a variety of ways. Gardner provided a means of mapping the broad range of abilities that humans possess by grouping their capabilities into the following eight comprehensive categories or "intelligences":

Linguistic: The capacity to use words effectively, whether orally (e.g., as a storyteller, orator, or politician) or in writing (e.g., as a poet, playwright, editor, or journalist). This intelligence includes the ability to manipulate the syntax or structure of language, the phonology or sounds of language, the semantics or meanings of language, and the pragmatic dimensions or practical uses of language. Some of these uses include rhetoric (using language to convince others to take a specific course of action), mnemonics (using language to remember information), explanation (using language to inform), and metalanguage (using language to talk about itself) (Armstrong, 2008).

Logical-mathematical: The capacity to use numbers effectively (e.g., as a mathematician, tax accountant, or statistician) and to reason well (e.g., as a scientist, computer programmer, or logician). This intelligence includes sensitivity to logical patterns and relationships, statements and propositions (if-then, cause-effect), functions, and other related abstractions. The kinds of processes used in the service of logical-mathematical intelligence include categorization, classification, inference, generalization, calculation, and hypothesis testing (Armstrong, 2008).

Spatial: The ability to perceive the visual-spatial world accurately (e.g., as a hunter, scout, or guide) and to perform transformations upon those perceptions (e.g., as an interior decorator, architect, artist, or inventor). This intelligence involves sensitivity to color, line, shape, form, space, and the relationships that exist between these elements. It includes the capacity to visualize, to graphically represent visual or spatial ideas, and to orient oneself appropriately in a spatial matrix (Armstrong, 2008).

Bodily-kinesthetic: Expertise in using

one's whole body to express ideas and feelings (e.g., as an actor, a mime, an athlete, or a dancer) and facility in using one's hands to produce or transform things (e.g., as a craftsperson, sculptor, mechanic, or surgeon). This intelligence includes specific physical skills such as coordination, balance, dexterity, strength, flexibility, and speed, as well as proprioceptive, tactile capacities (Armstrong, 2008).

Musical: The capacity to perceive (e.g., as a music aficionado), discriminate (e.g., as a music critic), transform (e.g., as a composer), and express (e.g., as a performer) musical forms. This intelligence includes sensitivity to the rhythm, pitch or melody, and timbre or tone color of a musical piece. One can have a figural or "top-down" understanding of music (global, intuitive), a formal or "bottom-up" understanding (analytic, technical), or both (Armstrong, 2008). Interpersonal: The ability to perceive and make distinctions in the moods, intentions, motivations, and feelings of other people. This can include sensitivity to facial expressions, voice, and gestures; the capacity for discriminating among many different kinds of interpersonal cues; and the ability to respond effectively to those cues in some pragmatic way (e.g., to infuence a group of people to follow a certain line of action) (Armstrong, 2008).

Intrapersonal: Self-knowledge and the ability to act adaptively on the basis of that knowledge. This intelligence includes having an accurate picture of oneself (one's strengths and limitations); awareness of inner moods, intentions, motivations, temperaments, and desires; and the capacity for self-discipline, self-understanding, and self-esteem (Armstrong, 2008).

Naturalist: Expertise in the recognition and classification of the numerous species—the fora and fauna—of an individual's environment. This also includes sensitivity to other natural phenomena (e.g., cloud formations, mountains, etc.) and, in the case of those growing up in an urban environment, the capacity to discriminate among inanimate objects such as cars, sneakers, and CD covers (Armstrong, 2008).

Snyder (2000) sought to determine the relationship between learning styles and academic achievement of high school students. The results of the study suggested that the majority of high school students benefited from Tactile/ Kinesthetic intelligence and were global learners. The researcher concluded that an awareness of how students learn is in fact indispensable to successful classroom. Keobke (1998) addresses the issues in designing curriculums for multiple language learning styles. He believes that students can learn languages best when programs are geared to their learning styles, which is not always possible in traditional classrooms. He advocates collaborative learning activities—easily provided by the computer—as the best way for learners to improve their language.

Understanding the premise that learners prefer to utilize different learning styles will create a language-learning environment that enhances the chances of satisfying learners' individual needs. Armstrong (2008) stated that students'

learning styles is essential in the learning process and integrating them in instruction has likely to make possible learning for students. Graf, Kinshuk, and Liu (2009) emphasized that considering students' learning styles can help in many ways to teachers in terms of explaining the subjects and preparing the courses. Many researchers suggest that when the learning materials and activities match students' learning preferences learning can occur more easily than learning in mismatched conditions (Pedrosa De Jesus, Almeida, & Dias, 2007). It is not possible, as well as not practical, for an instructor to oblige every lesson to all of the learning styles found within the classroom.

Therefore, instructors can show students how to use their more developed intelligences to aid in the understanding of

a subject which normally employs their weaker intelligences (Lazear, 1999). Both The Multiple Intelligence Theory of Gardner, and The Learning Styles Theory founded by Jung have been focused on by many educators in terms of individualized instruction. In practice, while some of the educators try to use both of them in education by attributing similar functions to both; Gardner regards the multiple intelligence domains as the "productional" skills, and the learning styles are known as bearing "perceptional" features unlikely. At this point, it is important to investigate the correlation between The Multiple Intelligence and The Learning Styles.

In the words of Christison (1998b,34), "the terminology and labels used for identifying learning styles vary greatly" .Based on Reid (1987), Christison (1998b) states that there are three major categories of learning styles: cognitive, sensory and personality. Christison (1998b, 35) describes each type of learning styles in detail in her article and she states that the perceptual learning styles are best known among all the types of learning styles. Terms such as auditory, visual, tactile and kinesthetic are well known by many educators. Christison (1998b, 40) suggests that each lesson should integrate a variety of styles.

Silver et al. (1997) explain that there are two similarities in all the learning style models even though theorists' interpretations differ from one another. The common things are: "a focus on process" and "an emphasis on personality". Their model consists of four styles: 1) the Mastery style; 2) the Understanding style; 3) the Self-Expressive style; and 4) the Interpersonal style. According to Silver et al. (1997), "learning styles are not fixed throughout life, but develop as a person learns and grows" (p.23). This is similar to MI since intelligence is not static and it can be improved throughout the years.

Silver et al. (1997) claim that learning styles and multiple intelligences share some similarities. They claim that learning styles and MI should be applied in combination since they believe that each theory has some limitations. If both theories are integrated, their limitations will be minimized and their strengths will be enhanced. According to Silver et al. (1997), "learning styles emphasize the different ways people think and feel as they solve problems, create products, and interact" (p. 22). On the other hand, MI focuses on the way human potential is shaped by different disciplines and cultures (p.22). "Learning styles are concerned with differences in the process of learning, whereas multiple intelligences center on the content and products of learning", declare Silver et al (1997). They also combine each intelligence with the four styles mentioned above in order to explain how the integration of MI and learning styles provides better results. They suggest: "In conjunction, both multiple intelligences and learning styles can work together to form a powerful and integrated model of human intelligence and learning – a model that respects and celebrates diversity and provides us with the tools to meet high standards "(p.27).

Over the past decade there have been two dozen studies concerned with self-estimates of intelligence. Although various other studies predated it (e.g., Hogan, 1978), it was Beloff's (1992) study on gender differences in estimated IQ that has provoked most papers since (Bennett, 1996, 1997, 2000; Byrd & Stacey, 1993; Furnham, 2000; Furnham & Baguma, 1999; Furnham & Fong, 2000; Furnham Rawles, 1995; Furnham, Clark, & Bailey, 1999a; Furnham, Fong, & Martin, 1999b; Furnham, Hosoe, & Tang, 2001; Petrides & Furnham, 2000). These studies can be categorized in various ways. In many studies, overall selfestimates of overall intelligence were investigated as the sole dependent variable (Beloff, Byrd & Stacey, 1993; Furnham & Gasson, 1998), while more recent studies have examined multiple

intelligences (Bennett, 1996, 1997, 2000; Furnham, Furnham & Baguma, 1999). Some studies have been particularly concerned with the correlation between psychometric intelligence and self-estimated intelligence, which appears to be around r 5 .30 (Furnham & Fong, 2000; Furnham & Rawles, 1999).

The results of these studies show six points (Furnham, 2001): First, when asked to rate overall intelligence, males give themselves significantly higher scores than females. Second, people tend to believe there are generational differences in IQ, with each generation being more intelligent than the last; that is, people think they are less intelligent than their children, but more intelligent than their parents. Third, when asked to rate multiple intelligence, it is primarily mathematical/ logical and spatial intelligence that shows significant gender differences in favor of males. Fourth, people believe mathematical, spatial, and verbal intelligence to be the major predictors of overall intelligence. Fifth, the correlation between self- estimated intelligence and a psychometrically validated test tends to be around r 5.30 with evidence of numerous outliers, particularly males, overestimating their psychometrically measured intelligence. Sixth, there is evidence that participants estimate others' intelligence similarly to their own.

That is, if people give high self-estimates to themselves, they do the same for their relations. For instance, Furnham et al. (2002a) found that, in a sample of Chinese parents in Hong Kong, males tended to rate their own mathematical and spatial intelligence higher than females did. Compared with estimates of the seven intelligences, spatial intelligence was rated highest and musical intelligences were rated lowest by both male and female participants. Assessing self-estimates of multiple intelligences, Chan (2003) reported that Chinese secondary school students rated themselves highest in interpersonal intelligence and lowest in bodily -kinesthetic intelligence. There were significant gender differences in logical-mathematical and interpersonal intelligences. Boys rated themselves higher than girls in logical-mathematical intelligences, while girls rated themselves higher in interpersonal intelligences than boys. This study aimed to investigate following questions: (1) What are the variant learning styles of Iranian Male and Female EFL students? (2) What are the characteristics of the Male and Female students' multiple intelligences?

2. Methodology

In this study two mostly-used standardized survey instruments was used: The first one was used by Oxford (1993) in order to examine learning styles and the second one was used by Christison (1998b) in order to examine multiple intelligences.

It should be noted that a t-test was conducted to conclude the differences between male and female groups. Since there was the same survey as a data elicitation instrument, it was possible to easily compare the results from the two groups. Furthermore, sufficient considerations of both audiences were taken into account during the design of the survey.

2.1 Data Collection

250 participants, studying English as a Foreign Language (EFL) at Isfahan University, were randomly chosen. Then, a t-test was conducted in order to indicate the differences between female group (N= 112) and male group (N= 138). It should be noted that not all participants answered the survey. Thus, N indicates the number of participants who answered the survey. 3% of the male group and of the female group and did not respond the survey.

2.2 Data Analysis

After scoring the items in the groups, for each student the points of learning styles and multiple intelligences were totaled. Then, resultant points were totaled for two groups. Finally, various dimensions of data

were schematized in three tables in which the relationships between prevailing learning styles and multiple intelligences have been represented.

3. Results and Discussion

The learning styles and multiple intelligences in both groups have been provided by the results of this study. Table 1 schematizes the learning styles in terms of rankings, percentages, standard deviations and means in the five part of the survey instrument.

First section of the survey instrument included five parts each relating to a single learning style category. Part 1 ' How we should use our physical potentials to do tasks' was assigned to hands-on, auditory and visual perceptions called 'tactile' senses. As can be seen in Table 1, while visual learning style for male group was significant (M=17.04), both visual and hands-on tactile learning styles of the female group were high, i.e. 18.32 and 17.18, respectively. Thus, the female students enjoyed both visual and hands-on tactile learning styles doing projects, and class participations. Surprisingly, in part2, 'How we should get along with others', both groups showed the same prevailing learning style. In other words, an extroverted learning style was the learning style used by two groups. In part 3,How we should cope with possibilities', the focus was on the distinction between intuitive and analytic learning styles. Whereas the mean score of the male group for an intuitive learning style was M= 16.10, the female group achieved to some extent close mean scores for both intuitive (M= 19.73) and analytic thinking (M= 19.13).

Table 1. *General Learning Styles Profiles for the Male and Female Groups*

	Mean	%(Rank)	SD	Mean	%(Rank)	SD
Part 1						
Visual	17.04	36.13 (1)	4.19	18.32	36.68 (1)	3.27
Auditory	15.18	32.20 (2)	3.65	14.86	29.50 (3)	3.61
Hands-on	14.93	31.67(3)	3.76	17.18	34.11(2)	4.07
Part 2						
Extroverted	17.04	36.13 (1)	4.19	18.32	36.68 (1)	3.27
Introverted	15.18	32.20 (2)	3.65	14.86	29.50 (3)	3.61
Part 3						
Intuitive	16.10	52.87(1)	3.81	19.73	50.78(1)	4.96
Concrete-seq	14.36	47.13(2)	3.73	19.13	49.22(2)	4.45
Part 4						
Closure-orien	16.43	53.90(1)	4.62	19.70	57.90(1)	4.8
Open	14.06	46.10(2)	3.20	14.32	42.10(2)	3.98
Part 5						
Global	16.44	54.06 (1)	3.92	19.77	56.57(1)	3.55
Analytic	13.97	45.94 (2)	3.40	15.18	43.43 (2)	4.10

First section of the survey instrument included five parts each relating to a single learning style category. Part 1 ‘ How we should use our physical potentials to do tasks’ was assigned to hands-on, auditory and visual perceptions called ‘tactile’ senses. As can be seen in Table 1, while visual learning style for male group was significant (M=17.04), both visual and hands-on tactile learning styles of the female group were high, i.e. 18.32 and 17.18, respectively. Thus, the female students enjoyed both visual and hands-on tactile learning styles doing projects, and class participations. Surprisingly, in part2, ‘How we should get along with others’, both groups showed the same prevailing learning style. In other words, an extroverted learning style was the learning style used by two groups. In part 3,How we should cope with possibilities’, the focus was on the distinction between intuitive and analytic learning styles. Whereas the mean score of the male group for an intuitive learning style was M= 16.10, the female group achieved to some extent close mean scores for both intuitive (M=19.73) and analytic thinking (M= 19.13).

Thus, the female group revealed a preference for both of these learning styles which showed that they can simultaneously enjoy these learning styles during the tasks. In part 4, ‘ How we should handle tasks’, regarding close-oriented or open- oriented environment, both groups displayed a preference for close-structured taskenvironment. And finally, in part 5, ‘How we should deal with global or analytic ideas’, there wasnot significant difference between two groups in their preference for a global learning style. In other words, both groups preferred to get the main ideas and try to communicate while they are not totally familiar with words and new concepts.

Prevailing intelligence in both groups have been displayed in Table 2. As can be seen in the table, mean scores of visual and interpersonal intelligences for the male group were high. The female group interpersonal intelligence was the first and visual intelligence was the second prevailing intelligence. According to Campbell, Campbell, & Dickenson (1996), the relationship between intelligence are much more important than their total means. This relationship has been indicated by their relative strength of intelligences. Thus, for example, each groups’ interpersonal intelligence is different: the male group 7.78 and the female group 8.83 points.

Table 2. *Prevailing Intelligences Profiles for the Male and Female Groups*

	Male			**Female**		
	Mean	**%(Rank)**	**SD**	**Mean**	**%(Rank)**	**SD**
Visual	7.80	14.99(1)	2.24	7.83	14.00(2)	2.28
Inter personal	7.78	14.95(2)	2.32	8.83	15.79(1)	2.05
Musical	6.62	12.7(3)	2.70	5.17	9.25(8)	3.21
Linguistic	6.36	12.23(4)	1.71	7.10	12.69(5)	2.10
Logical	6.09	11.71(5)	2.28	7.08	12.66(4)	2.67
Intrapersonal	5.98	11.49(6)	2.03	5.87	10.49(7)	2.21
Kinesthetic	5.68	10.91(7)	2.41	7.44	13.31(3)	2.01
Naturalist	5.73	11.01(8)	2.71	6.60	11.80(6)	2.61

Table 3. *The Relationship between the Prevailing Multiple Intelligences (MIs) and Learning Styles in the Male and Female Group*

Male		Female	
Mis	**Learning styles**	**Mis**	**Learning styles**
Spatial/Visual (1)	Visual (1)	Interpersonal (1)	Extroverted (1)
Interpersonal (2)	Extroverted (1)	Spatial/Visual (2)	Visual (1)
Kinesthetic (3)	Hands-on (2)		

It should not be concluded that the interpersonal intelligence of one group is stronger than the other. That is to say, interpersonal intelligence of the female group is just the strongest compared with other intelligences within the female group. In Table 3, the relationship between the prevailing multiple intelligences and learning styles in two groups has been shown.

As shown in Table 3, for instance, there is a high consistency between visual intelligence and visual learning style. It means that the male group has the same preferences for both visual intelligence and learning style. Regarding interpersonal intelligence, the male group got the highest score rank and highest on extroversion learning style as well. In terms of learning styles, the female group, however, had the highest score for extroversion learning style and the second one was visual perception and the third one belongs to tactile learning style. Furthermore, multiple intelligences for female group were interpersonal, visual and kinesthetic intelligence, respectively.

4. Conclusion

The findings of the study indicated that knowing the strengths and potentials of the male and female students regarding their multiple intelligences and learning styles would help both language teachers and students in order to progress, develop language skills, and select appropriate syllabus designs and language learning methods.

Furthermore, findings revealed that while prevailing learning style preferences of the male group were visual, global, closure-oriented, extroverted, and intuitive learning styles, the female group favored mostly a global, intuitive, closure-oriented, a visual and extroverted learning style. It would also be concluded that the findings of the study displayed that in both the male and female groups there was a high percent of internal consistency between multiple intelligence and learning styles.

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