THE RELATIONSHIP BETWEEN PROSPECTIVE ENGLISH TEACHERS' MULTIPLE INTELLIGENCES, EMOTIONAL INTELLIGENCE, LEARNING STYLES, AND THEIR ACADEMIC ACHIEVEMENT

İNGİLİZCE ÖĞRETMEN ADAYLARININ ÇOKLU ZEKÂ, DUYGUSAL ZEKÂ, ÖĞRENME STİLLERİ VE AKADEMİK BAŞARILARI ARASINDAKİ İLİŞKİLER

Jafar POURFEIZ

Submitted to the Graduate School of Educational Sciences of Hacettepe University in Partial Fulfillment of the Requirements for the Doctoral Degree in English Language Teaching

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This is to certify that we have read this dissertation, entitled *"The Relationship between Prospective English Teachers' Multiple Intelligences, Emotional Intelligence, Learning Styles and Their Academic Achievement"*, and that in our opinion it is fully adequate, in scope and quality, as a dissertation for the Degree of Doctor of Philosophy in the Program of English Language Teaching.

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THE RELATIONSHIP BETWEEN PROSPECTIVE ENGLISH TEACHERS' MULTIPLE INTELLIGENCES, EMOTIONAL INTELLIGENCE, LEARNING STYLES AND THEIR ACADEMIC ACHIEVEMENT

Jafar POURFEIZ

ABSTRACT

The present research study investigated the relationship between the *Multiple Intelligence* profiles, *Emotional Intelligence*, *Learning Styles* and *Academic Achievement* among prospective English teachers in a Turkish context. A total of 102 prospective English teachers (*Male*: 26, 25.5%; *Female*: 76, 74.5%) participated in the study. The Multiple Intelligences Developmental Assessment Scale (MIDAS) developed by Shearer (2006) was used to assess the participants' *Multiple Intelligences* profiles. Schutte et al.'s (2009) Emotional Intelligence Scale (SEIS) was used to measure *Emotional Intelligence*, and Kolb's (2007) Learning Styles Inventory (KLSI) was used to asses the *Learning Styles* preferences of the participants. The findings of the study revealed that interpersonal, linguistic and intrapersonal intelligences were found to be the most dominant intelligences among the participants. Moreover, eight in ten (80.19%) of the participants had higher levels of emotional intelligence. *Active Experimentation* and *Reflective Observation* were found to be the most preferred learning styles within the experiential learning cycle. Besides, descriptive statistics for learner types indicated that among the four learner types, *accommodators* (44.1%) was the most preferred learning style followed by *convergers* (23.5%).

The findings also indicated a statistically significant relationship among intelligence types, learning styles and academic achievement. Linguistic, Interpersonal, Musical, Mathematical, Kinesthetic, and Intrapersonal intelligences significantly contributed to the prediction of the participants' academic achivement with the linguistic intelligence being the strongest predictor followed by interpersonal intelligence as the second strongest predictor variable. Totally, these variables explained 67% of the variance in the participant's academic achievement. *Perception of emotions (PE)*, *managing one's own emotions* (ME), and *utilization of emotions (UE)* subcomponents of *Emotional Intelligence* (EI) significantly

predicted academic achievement and totally explained for 41.5% of variance observed in academic acievement. The perception of emotions and utilization of emotions were the strongest predictors of academic achievement. As for the learning styles, *active conceptualization* and *active experimentation* styles were the stronger predictors of academic achievement. Surprisingly, the participants preferred active learning styles to reflective and concrete experience as the most effective styles in their academic achievement.

The results of ANOVA also revealed a statistically significant relationship between levels of academic achievement and multiple intelligences and emotional intelligence. Additionally, siginficant differences were found among high, moderate, and low achievers in relation to their *multiple intelligences*, *emotional intelligence*, and *learning styles*. Gender differences were also found to be significant in MI profiles, EI, and learning styles of the participants. The highest mean scores for linguistic, logical/mathematical, kinesthetic, spatial, and naturalist intelligences were found in males group. Males had also higher mean scores in overall EI and preferred *active conceptualization* over *concrete experience* and *active experimentation* over *reflective observation*.

The findings of the study highlighted the impact of individual differences variables on academic achievement of the prospective English teachers. These findings can help teachers, instructors and curriculum developers in teacher education programs so as to assess and recognize the student teachers' abilities and the way they operationalize these abilities, and reorganize the curriculum in ways that address individual differences and contribute to the academic achievement of the prospective teachers.

Keywords: multiple intelligences, emotional intelligence, learning styles, academic achievement, learning cycle, teacher education

Supervisor: Prof. Dr. Mehmet DEMİREZEN, Hacettepe University, Department of Foreign Language Education, Division of English Language Teaching

İNGİLİZCE ÖĞRETMEN ADAYLARININ ÇOKLU ZEKÂ, DUYGUSAL ZEKÂ, ÖĞRENME STİLLERİ VE AKADEMİK BAŞARILARI ARASINDAKİ İLİŞKİLER

Jafar POURFEIZ

ÖZ

Bu çalışma, İngilizce öğretmen adaylarının çoklu zekâ, duygusal zekâ, öğrenme stilleri ve akademik başarıları arasındaki ilişkiyi bir Türk altyapısı içerisinde araştırmayı amaçlamıştır. Çalışmaya toplam 102 İngilizce öğretmen adayı (Erkek: 26, %25,5; Kadın: 76, %74,5) katılımıştır. Araştırmaya katılan İngilizce öğretmen adaylarının çoklu zekâ profillerini ölçmek için Shearer (2006) tarafından geliştirilen Çoklu Zekâ Alanları Gelişimsel Değerlendirme Ölçeği, duygusal zekâlarını ölçmek için Schutte vd'nin (2009) Duygusal Zekâ Ölçeği ve öğrenme stil tercihlerini değerlendirmek için ise Kolb'un (2007) Öğrenme Stil Envanteri kullanılmıştır. Çalışmanın sonuçları, sosyal, dilsel ve içsel zekâ türlerinin katılımcılar arasında en baskın zekâlar olduğunu göstermiştir. Ayrıca, yaklaşık her on katılımcıdan sekizi (%80,19) daha yüksek derecelerde duygusal zekâya sahiptir ve *Aktif Deneyleme ve Yansıtıcı Gözlemleme* en çok tercih edilen öğrenme çeşitleridir. Bunun yanında, öğrenen çeşitleri için betimleyici istatistikler göstermiştir ki, dört öğrenen çeşidi arasında uyumlu (% 44.1) en çok tercih edilen öğrenme çeşidi iken yakınsayan öğrenme de onu takip etmiştir (%23.5).

Ayrıca, sonuçlar zekâ türleri, öğrenme biçimleri ve akademik başarı arasında istatistiksel olarak önemli bir bağlantı olduğunu göstermiştir. Dilsel, sosyal, müziksel, matematiksel, kinestetik ve içsel zekâ tipleri katılımcıların akademik başarısının tahminine önemli derecede katkı sağlamıştır: Dilsel zekâ en güçlü yordayıcı değişken olarak bulunmuş ve bunu ikinci en güçlü yordayıcı değişken olarak sosyal zekâ takip etmiştir. Birlikte ele alındığında, bu değişkenler katılımcıların akademik başarısındaki %67'lik değişkeni açıklamıştır. Duygusal zekânın, duyguların kavranışı, kendi duygularını yönetmek ve duyguları kullanma boyutları da akademik başarının göstergeleri olarak bulunmuştur ve akademik başarıda gözlenen %41,5'lik değişkene karşılık gelmiştir. Akademik başarının en güçlü göstergeleri duyguların kavranışı ve duyguları kullanma olmuştur. Öğrenme çeşitlerine gelince, aktif kavramsallaştırma ve aktif deneyleme çeşitleri akademik

başarının daha güçlü belirtileri olarak bulunmuştur. İlginç bir şekilde, katılımcılar aktif öğrenme çeşitlerini İngilizceyi yabancı dil olarak öğrenmede yansıtıcı ve somut deneyime tercih etmiştir.

Diğer yandan, ANOVA sonuçları akademik başarı düzeyleri ile çoklu zekâ ve duygusal zekâ düzyeleri arasında önemli bir bağlantı olduğunu göstermiştir. Ek olarak, yüksek, orta düzeyde ve düşük düzeyde başarılı katılımcılar arasında, öğrenme çeşitleri ve akademik başarısına bağlı olarak önemli farlılıklar bulunmuştur. Cinsiyet, katılımcıların sadece çoklu zekâ profillerinde önemli olarak fark göstermiştir. Dil, mantıkmatematik, knestetik, yer ve doğal zekâ dürlerinin erkek katılımcı grubunda daha yüksek olduğu saptanmıştır. Erkek katılımcıların genel duygusal zekâ ortalamaları da daha yüksek bulunmuştur. Ayrıca, erkek katılımcılar *aktif öğrenmeyi somut öğrenmeye* ve *yansıtıcı öğrenmeyi* de *somut deneyime* tercih etmişlerdir.

Bu bulgular bireysel farlılık değişkenlerinin İngilizce öğretmen adaylarının akademik başarısına olan etkisini göstermiştir. Bu çalışmanın bulguları; öğretmen adaylarının yeteneklerini değerlendirip tanımak ve bu yetenekleri etkinleştirmek amacıyla öğretmen yetiştirme programlarında görev alan öğretmen, öğretim elemanı ve öğretim programı geliştiren uzmanlara yardımcı olabilir. Ayrıca, bu araştırmanın bulguları, mevcut öğretim programının bireysel farklılıklara hitap edecek şekilde tekrar düzenlenmesine imkân verebilir ve böylece İngilizce öğretmen adaylarının akademik başarılarına katkı sağlayabilir.

Anahtar sözcükler: Çoklu zekâ, duygusal zekâ, öğrenme çeşitleri, akademik başarı, öğrenme döngüsü, öğretmen eğitimi

Danışman: Prof. Dr. Mehmet DEMİREZEN, Hacettepe Üniversitesi, Yabancı Dil Eğitimi Anabilim Dalı, İngiliz Dili Eğitimi Bilim Dalı

DECLARATION OF ETHICAL CONDUCT

I have prepared this dissertation in accordance with the dissertation writing rules and conventions of the Gradue School of Educational Sciences of Hacettepe University, and I hereby declare that:

- All the information and ducements have been obtained on the basis of academic rules,
- All audio-visual and written information and results have been presented according to the rules of scientific standards,
- In case of using other works, related studies have been cited in accordance with the scientific standards,
- All cited studies have been fully referenced,
- I did not do any distortion in the data set,
- And any part of this dissertation has not been presented as any other thesis study at this or any other university.

…….

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LIST OF ABBREVIATIONS

ANOVA:	Analysis of Variance
AC:	Active Conceptualization
AE:	Active Experimentation
CE:	Concrete Experience
EFL:	English as a Foreign language
ESL:	English as a Second Language
GPA:	Grade Point Average
Inter:	Interpersonal Intelligence
Intra:	Intrapersonal Intelligence
KLSI:	Kolb's Learning Styles Inventory
LI:	Linguistic Intelligence
LMI:	Logical Mathematical Intelligence
M:	Mean
ME:	Managing Emotions
MIDAS:	Multiple Intelligence Developmental Assessment Scale
MoE:	Managing Others' Emotions
NI:	Naturalist Intelligence
PE:	Perception of Emotions
RO:	Reflective Observation
SD:	Standard Deviation
SPI:	Spatial Intelligence
SEIS:	Schutte Emotional Intelligence Scale
SLA:	Second Language Acquisition
UE:	Utilizing Emotions

1. INTRODUCTION

This chapter presents the organization of the dissertation. First, it provides a brief account of the reasearch study. Second, it puts forward the problems and purpose of the study. Third, it states the imprtance of the study and explains why the research study is significant. Fourth, it indicates the research questions and limitaitons to the study. Fifth, it explains how the dissertation was organized. Finally, it offeres the definition of key terms used in the research study.

1.1. Introduction

Research into second language acquisition (SLA) (Ellis, 1985, 1994; Maftoon & Najafi, 2012) has shown second language (L2) learners differ greatly in their ultimate attainment and often end up with different results. This may be attributed to a myriad of factors that exert influence on L2 achievement including individual differences such age, gender, affective and cognitive factors, learning styles, attitudinal and motivational factors (Ellis, 1994, Dörnyei, 2005, 2014). Researchers therefrore, often make a distinguish second language learning (ESL) from foreign language learning(EFL). In the former case, language is used as a means of communication and plays an institutional and social role in the society. In the United States of America, England, Australia, (i.e., in the inner circles, to borrow Kachru's terminology), and in outer circles such as Nigeria, Malaysia, and India English is used as a second language.

However, foreign language learning concerns with learning a second language (L2) in settings and environments where the language learnt doesn't have any social or institutional role in the society and is primarily learned in the classroom contexts. In expanding circle, the third classification of World Englishes (WEs) by Kachru(1992), English is widely used not for historical or governmental roles, rather as a foreign language (EFL) or Lingua Franca in countries such as China, Japan, Turkey, Iran, Russia, Korea and most of European countries. Consequently, L2 learning in these two settings may be quite different both in terms of subject matter and methodology. Second language acquisition (SLA) is also different from First Language Acquisition (FLA or L1) on the grounds that L2 learning starts generally when an individual has already developed his/her first language (L1) system.

Another important issue in the field of SLA research is that the type of language produced by L2 learners is not developed yet and is quite different from that of native speakers of the language. This type of developing language is called ‘Interlanguage’ (Selinker, 1972).The term Interlanguage or learner language refers to the series of interlocking systems which characterize acquisition, and is observed at a single stage of development (Ellis, 1994; Selinker, 1972). Indeed, it combines certain feeatures of L1 and L2. This phenomenon can be observed in both ESL and EFL settings. Therefore, in SLA research, it is of significance to have a clear knowledge of the object of the inquiry. In line with the common usage, therefore, the terms second or foreign language learning will be used interchangably to refer to all cases of L2 learning in this research study.

There are various approaches to the understanding of SLA including cognitive/functionalist approach, formal linguistic approach, sociocultural approach, and Universal Grammar (UG) approach, just to name a few. According to Butler and Hakuta (2004), in cognitive/functionalist approach to SLA, language acquisition is viewed as part of general cognition and is mainly concerned with rule-governed structures while formal linguistic approach, which is mainly based on Chomsky’s theories, views language acquisition as innate faculty.

Gass and Selinker (2008, p.161) observe that the theory underlying UG assumes that language consists of a set of abstract principles that characterize core grammars of all natural languages. They further assert that, in addition to principles that are invariably existent in all languages, there are parameters that vary across languages. The major controversial issue concerning the UG and L2 learning is whether adult L2 learners have access to UG as in child’s L1 acquisition or not.

According to Fundamental Difference Hypothesis (FDH) put forward by Bley-Vroman (1989), what happens in child language acquisition is not the same as what happens in adult second language acquisition. Contrary to FDH, White (2003) argues that the innate language facility is alive and well in second language acquisition and, as in the case of child’s L1 acquisition, it constrains the grammars of L2 learners. The basic claim of the Fundamental Difference Hypothesis is that adults do not have access to UG while learning an L2 and their knowledge of language universals is constructed through their L1 (Gass & Selinker, 2008).

However, White (2003) maintains that L2 learners have access to UG and that "UG is constant (that is, unchanged as a result of L1 acquisition); UG is distinct from the learner's L1 grammar; UG constrains the L2 learner's interlanguage grammars". (p. 60).

Human beings are 'prewired' for language learning and thanks to the principles of universal Grammar (UG) learners begin to set parameters in additional language learning. As Demirezen (2011) rightly puts it, UG with its principles and parameters, and Language Acquisition Device (LAD) are responsible for the acquisition of L1 and additional languages. Languages are similar in terms of principles. However, parameters are the major causes of differences and difficulties in additional language learning. Therefore, as we have parameters, we'll certainly have differences in languages. The more are these differences, the more errors learners will make in learning an L2. In second language learning and/or additional language learning, if not controlled, inadequate education will certainly lead to fossilisation and perhaps pidginization. The role of Language Acquisition Device and UG in language learning has been clearly illustrated by Figure 1.

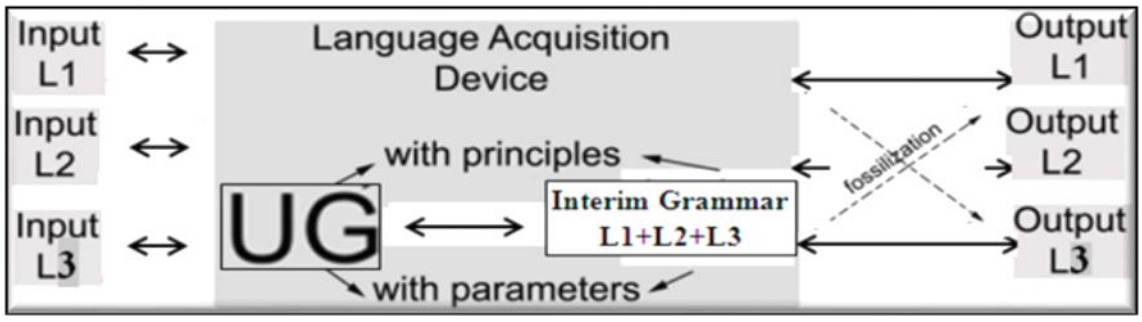

Figure 1.1. UG, L1, L2, and Third language learning (Adapted from Demirezen, 2011)

Regardless of hot debates on the role of UG principles and parameters in L2 learning, it is now agreed that L1 acquisition is quite different from L2 learning, children acquire their L1 effortlessly in normal conditions, and some learners can achieve native like proficiency in second language acquisition (Larsen-Freeman & Long, 1991). However, not all L2 learners can gain ultimate attainment in second language acquisition (Ellis, 2004) as in their L1 and the norm 'near native like' proficiency in L2 is acceptable among L2 researchers (Demirezen, 2011).

As stated earlier, the rate and the results of L2 learning are different from L1 acquisition. In the past, research in SLA put emphasis largely on teachers' role in learning an L2. That is, early research was teacher-centered. However, current research on SLA is quite learner-centered, focusing on affective factors, motivation, anxiety, beliefs, attitudes, intelligences, aptitudes, personality factors, learning styles, self-esteem, self-efficacy, and problem solving skills. This pendulum shift from teacher-centeredness to learner-centeredness curriculum created an explosion of research towards exploring the individual differences (Dörnyei, 2005; Andreou, Andreou, & Vlachos, 2006) and their characteristics in relation to L2 learning. A number of approaches in L2 learning field have acknowledged a significant role for individual differences among L2 learners in recent years and learners are considered as key elements in teaching and learning an L2 (Skehan, 1991; Larsen-Freeman & Long, 1991; Robinson, 2002; Ellis, 2004). This has resulted in the emergence of a plethora of studies aimed at investigating the characteristics of L2 learners, their relationships with the quality and quantity of learning an L2, and ultimate attainment and academic achievement. This being the case, the present research study investigated the probable relationship between prospective English teachers' multiple intelligences profiles, emotional intelligence, and their learning styles in relation to their potential relationship with L2 achievement.

1.2. Background to the Study

It is now an established fact that teachers have always been aware of that students have different strengths and weaknesses. Some of the differences students bring with them to learning contexts in all fields, especially language learning, can be attributed to their different learning styles and their varying profiles of capacity or ability to undertake particular task. Some students, for example, learn better through seeing while others are aural learners. Although some learners can learn better either way, the way they learn and the mode of instruction play vital role in their ultimate attainment. Research into the field of second or foreign language (L2) learning (Larsen-Freeman & Long, 1991; Larsen-Freeman, 2011), have highly emphasized the role of individual differences in L2 learning contexts. There have been many approaches and models (Richards &

Rodgers, 2014) dealing with issues related to L2 learning and how to tackle these problems so as to be able to enhance learning outcomes.

During the past decades, learning styles and multiple intelligences theories addressed individual difference in various areas of education and L2 learning as well. Although learning-style theory comes from “psychoanalytic community” and MI theory is rooted in ‘cognitive science’, both theories, in fact, share insights from various disciplines such as biology, anthropology, psychology, and artistic and cultural studies(Silver et al., 1997). However, learning styles focus on the different ways people employ in solving problems, creating products, and interaction , whereas the MI theory tries to understand how cultures and disciplines influence people’s biopsychological ability (Silver et al., 1997). Gardner’s (1983, 1993a) Multiple Intelligence Theory (MIT) and Kolb’s (1984) Experiential Learning Theory (ELT), are two of the most popular theories that have encouraged researchers to conduct invaluable studies touching on the individuals’ strengths and differences in dealing with learning problems. Our conceptualization of multiple intelligences and learning styles in L2 achievement are based on the principles and provisions set by these two theories.

The scientific concern about the nature and core content of the term ‘intelligence’, in its original sense, date back to the early decades of the 20th century when the implementation of IQ tests were widely used in France to test the intelligence quotient of schoolchildren in Europe and all over the world (Richards & Rodgers, 2001). Although, the perception of intelligence was given high importance a hundred years ago, the conditions have remained unchanged and there have been no substantial developments since then despite grave improvements and innovations in the fields of physics, biology, physiology and other related disciplines(Gardner,2004).This can be attributed to either its true conceptualization in the past or incorrect realization of the construct at present time as in the words of Gardner (2004, p.4) who, while criticizing the situation, states that “This fact could mean that either Binet and Spearman got it right or that their successors have been remarkably myopic”.

Multiple Intelligence (MI) Theory, developed by Gardener (1983), has been highly influential in all disciplines (Özgen et al., 2010; Küçükkaragöz, 2009), particularly in foreign language teaching and learning context (Christison’ 1999; Saeidi, 2009;

Savas, 2012; Spirovska, 2013; Zarei & Mohseni, 2012; Zarei & Taheri, 2013). It has challenged traditionally held ideas about intelligence among school children. Traditionally, intelligence was considered as a single, fixed and inborn capacity which colud be measured through traditional IQ tests. Unfortunately, these IQ tests measure only logic and language, while our brain, as Gardner (1983) rightly puts it, has other equally important types of intelligences which are always ignored in these tests. According to Gardner (1983, 1993a), intelligence refers to an individual's ability to utilize at least eight types of intelligence to solve problems. He further asserts that the term 'intelligence' is pluralistic, that is, any individual has these intelligences.

Meanwhile, Gardner argues that although all human beings have these intelligences, the strengths and combination of intelligences differ from one individual to another. Following Gardner, other types of intelligences have been introduced, such as Emotional Intelligence (Salovey and Mayer 1990; Goleman,1995), Mechanical Intelligence, Practical Intelligence, existential Intelligence and, even recently, Phonetic Intelligence (Demirezen, 2013) which concerns with one's ability to easily capture and identify the sound patterns of a particular language and exhibit an extraordinary capability to learn them. The overall account of multiple intelligences will be given in the following chapter.

Attempts have been made to link MI theory to a framework for school education (Armstrong, 2009), especially to existing language and language learning theories (Christison,1997,1998, 2001, 2006; Larsen-Freeman, 2011; Richards & Rodgers, 2014). In all these MI proposals, language is seen as central to the whole life of foreign language learner and, thus, integrated with other activities such as music, bodily activities, personal and interpersonal relationships. In the same vein, researchers in the field of ESL and EFL have conducted studies to examine the potential association between students' MI profiles, learning styles and success in learning an L2 and academic achievement. Akbari and Tavassoli (2011), for example, investigated the possible relationships between teaching styles and emotional intelligence of the Iranian EFL teachers on the learning outcomes of their students. Their findings indicated significant even though not high correlations among some of the components of emotional intelligence and teaching styles. Similarly, Savas (2012) reported that 97% of the participants

agreed on the effectiveness of multiple intelligences in L2 achievement and that "multiple intelligences and foreign language learning have an ongoing, complex, and interactive relationship" (p.850).

What makes this research different from other studies is the fact that the former research carried out so far has partially dealt with the issue and that the relationship between the MI domains and profiles, emotional intelligences and learning styles have not been covered thoroughly in these studies. Virtually, a large proportion of these studies have approached each construct independently with respect to various areas of language achievement. The present research study, however, aimed at delving into the issue thoroughly to seek out the possible and potential relationships between the variables under investigation. Moreover, it was totally devoted to the relationship among the MI profiles, emotional intelligence (EI) profiles of prospective English teachers and their learning styles in reference to their academic achievement not learning in general, whereas most studies and their findings did not necessarily cover the whole issue as examined here. Therefore, it is assumed that the present study will be able to generate more useful information for our understanding of prospective English teachers' MI profiles, emotional intelligences, skills and abilities, their individual learning styles, and will provide substantial insights which will certainly help us to take necessary and important measures towards the betterment of the quality of teacher education programs.

Much attention has been attached to the field of learning styles in recent years to help teachers address learners' problems timely. Different models have been suggested in order to provide a framework for different learning theories and approaches assessing various dimensions of learning styles. Curry (1987), for instance, suggested the "onion model" which consists of four layers: personality dimensions, information processing dimensions, social interaction dimensions and finally, multidimensional and instructional dimensions. Models such as Myers-Briggs Type Indicator (MBTI) model assess personality aspect of learning style while others such as Kolb's (1984) model emphasize on the intellectual approach to assimilating information through information processing. Despite their different labels and categorization, these models stress that identifying and addressing individual differences can facilitate L2 achievement (Denig, 2004).

Kolb (1984), inspired by the work of John Dewey and constructive ideas of Piaget, proposed his learning style model. His model is deeply rooted in “Experiential Learning Theory (ELT)”. The ELT draws largely upon the work of 20th century’s distinguished figures such as John Dewey and Jean Piaget (Kolb, 2007). It views learning as “the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (Kolb 1984, p. 41).The emphasis on the centrality of experience distinguishes ELT both from cognitive and behavioral learning theories that ignore effectiveness of affect and experience in successful learning (Kolb et al, 1999; Geiger et al., 1992). According to Kolb (2007), the ELT offers two bipolar and related modes for perception of knowledge, i.e., Concrete Experience (CE) and Abstract Conceptualization (AC), and two bipolar related modes for transforming that knowledge or experience, i.e., Reflective Observation (RO) and Active Experimentation (AE). This idealized learning cycle, of course, varies depending on the person’s learning style preferences and learning environment (Schaller et al., 2007).

Considering learning styles, the CE/AC and AE/RO dimensions of the ELT theory are polar opposites and , depending upon the position of learners on these two dimensions, Kolb puts forward four types of learners , namely, “divergers”, “assimilators”, “convergers” and “accommodators” (Kolb,1984,2005). Zanich (1991, p.1) maintains that an effective learner

> *‘‘must be able to involve himself fully, openly, and without bias in new experiences (CE), he must be able to reflect on and observe these experiences from many perspectives (RO), he must be able to create concepts that integrate his observations into logically sound theories (AC), and he must be able to use these theories to make decisions and solve problems (AE).*

As stated above, MI theory and Learning Styles have been given much attention during the last few decades. The goal was to recognize and understand the nature of learners’ intelligences and learning styles in different fields. There are substantial studies showing that learners’ multiple intelligences, their skill domains and capabilities, their emotions as well as their personality factors and learning styles largely affect learning process, decision makings and curriculum planning in various educational fields. For instance, Mettetal, Jordan, and Harper (1997) examined the effect of an MI-based curriculum in an elementary school. Their

findings demonstrated positive effects of MI construct on students, teachers, and parents, positive attitudes toward the school-wide implementation of the theory, and uneven classroom implementation of MI concept across classrooms. The researchers concluded that the MI-based instruction contributed a lot to change the attitudes of both teachers and students toward curriculum.

1.3. Statement of the Problem

The present research study investigated the relationship between Multiple Intelligences, emotional intelligence profiles, and learning styles of prospective English teachers in relation to their academic performance. Individual potentials and personal learning styles used to materialize these capabilities in actual L2 learning process are very important factors for language and academic achievement. The way we learn and attack problems encountered during learning process are highly linked to personality and cognition or earning styles. It was believed, in the past, that all students have a 'general' style and intelligence for learning. Therefore, teachers often adopted the 'one size fits all' approach in their practical teaching. Today, however, teachers acknowledge that students bring with them different types of intelligences into the classroom and have different ways of attacking learning problems which are not taken into account in traditional way of foreign language teaching.

Apart from the learning process itself which differes from one person to another, human beings' uniqueness and individuality are key factors along with general laws of behavior that must be taken into consideration in L2 learning contexts. However, given the complexity of learning styles, they cannot be categorized into simple types and/or categories. Hence, research on recognizing diversity and complexity of cognitive styles and processes as well as learning styles will certainly contribute to the betterment of language achievement among prospective English teachers. Considering the fact that 'one size does not fit all', the current study mainly explored three of the most influential individual differences of prospective English teachers with respect to their academic achievement. Recognizing prospective English teachers' multiple intelligences profiles, personalities, and learning styles would help them to be more competent language teachers.

The main objective of this dissertation was to uncover the relationship between multiple intelligence profiles, emotional intelligence and learning styles of prospective English teachers and their effect on academic achievement in a Turkish context. It was assumed that investigation of the strengths and weaknesses of prospective English teachers, their learning styles, their perceptions of their own personal differences and preferences, and the possible relationships between these factors would certainly possess the potential to inform us about their academic achievement and English language proficiency with respect to their professional career in future.

1.4. Purpose of the Study

The general purpose of this research study was to determine if there is any relationship among Multiple Intelligences (MI), emotional intelligence (EI), and learning styles in reference to academic achievement among prospective English teachers in a Turkish EFL context. Corollary to this general goal, the study examined how well they predict their foreign language achivement. The purpose was to explore and discover the unknown association between factors referred to above and shed more light on the impact of these factors on academic achievement of the prospective English teachers.

Additionally, the present research approached, measured and evaluated the issue from different perspectives. The correlation and possible relationship between multiple intelligences and learning styles of the prospective English teachers were also assessed to find out the correlation, similarities and differences between the constructs. Additionally, the present research study explored the relationship and differences between learner types in relation to academic achievement. Moreover, the study aimed at gathering socio-demographic information of the participants including age, gender and academic level in pursuit of unfolding potential relationships among these variables and academic achievement. Finally, the aim was to provide answers to the research questions put forward in section 1.6. in this chapter with the purpose of shedding more light on factors influencing successful foreign language learning and academic achievement among prospective English teachers in teacher education programs and similar contexts as well, hoping to provide more insights into the implementation of more individualized L2 instruction.

1.5. Significance of the Study

It was hoped that the present research study will greatly contribute to the understanding of the nature of prospective English teachers' foreign language learning intelligences as well as the learning styles and strategies that they employ during learning an L2. It was also hoped that the present research study could help us identify students' dominant intelligences and learning styles, develop learning activities addressing different intelligences and learning styles and reconsider the role learning styles can play in academic achievement, and employ strategies that allow effective classroom management in a MI-based curriculum that encourages the use of both learning styles and multiple intelligences. Indeed, raising awareness of intelligences and learning preferences among foreign language learners and encouraging them to employ a combination of learning styles including their secondary or tertiary learning styles, not just their dominant ones, can help them to integrate their dominant intelligences with their dominant learning styles. By so doing, students are encouraged to improve their strengths and to overcome L2 learning barriers. This will, in turn, lead to meaningful L2 learning and a viable avenue to academic success.

The results of this study can also make a contribution to the understanding of how prospective English teachers with different MI profiles utilize different learning styles to successfully complete educational courses at ELT departments. Educators can use the results of this study to assist their students in determining the most effective learning strategies (Oxford,1990) and to promote students' performance and their academic achievement. This is important since the mismatch between learning styles and the teaching styles of the teachers might discourage the student teachers about the program, curriculum and themselves and, consequently, they may do poorly in performing language learning tasks (Felder and Henriques, 1995). A significant body of literature in the field of SLA (Armstrong, 2009; Berman, 1998; Campbell, Campbell and Dickinson, 1996, 1999; Savas, 2012; Christison, 1996; Christison, 1998; Gibson and Govendo, 1999; Haley, 2001; Oliver 1997; Shore, 2004) has shown that activities and tasks addressing the students' intelligence profiles lead to bring effective L2 achievement.

Even though the process of learning an L2 and academic achievement abounds with emotions, they have not been adequately studied in the field of SLA and teacher education programs. The main stream research in the field of English language teaching has mainly focused on cognitive factors. Research on emoitions has focused on language anxiety and overlooked the role of emotions as the potential determinants of success or failure in performing L2 learning tasks and academic achievement. Recet research into the effect of emotional intelligence on L2 learning (Dewaele, 2013; Koçoğlu, 2011; López, 2011; Mohammadi, 2012; Petrides & Furnham, 2003; Petrides, Fredrickson & Furnham, 2004) has shown that in addition to cognitive abilities, affective and emotional variables are also equally effective in determining L2 achievement. Therefore, recognizing students' cognitive, affective, and behavioral potentials enables teachers to address each student's abilities and styles accordingly and enhance their strengths and promote academic achievement.

It is assumed that the findings of the current study would provide more insights on how individual learning style relates to academic achievement in foreign language learning. Recent research (Ehrman, Leaver & Oxford, 2003; Felder & Spurlin, 2005; Felder & Henriques,1995; Mollaei & Rahnama,2012; Spark; 2006a, 2006b) has suggested that individual learning style may have a profound effect on the ability to meet the course outcomes. This may be due to the possibility that certain learning styles, e.g. field dependent (FD) and field independent (FID), introversion and extroversion styles (Brown, 2007; Ellis, 2008) are more adaptable to nature of education, more specifically second language learning. Moreover, understaning and recognizing potential similarities and differences between MI and learning styles could serve as an efficient factor to design programs and courses accordingly. As such, the present study aimed at exploring MI and EI profiles, and learning styles as they apply to the materials learned and this will, in turn, help both teachers and students more likely to have successful outcomes.

1.6. Research Questions

The present research study aimed to measure a) the multiple intelligences of prospective English teachers based on Gardner's multiple intelligence theory (MIT), Goleman's Emotional Intelligence (EI), exploring the variability in these basic components and subcomponents of learners' skill domains in relation to

academic achievement, b) the learning styles of the students in four original styles and the composite styles of learning cycle (Kolb, 2005) with reference to the participants' L2 achievement, and c) the socio-demographic factors such as age and gender in relation to the participants' MI profiles, EI, and learning styles preferences. Of course, intelligence types which do not meet the criteria for an ability to be called 'intelligence' (see chapter 2) such as 'existential intelligence' were not included in this research study deliberately. With this in mind, the following research questions were raised:

Question 1. What are the Multiple Intelligences profiles, Emotional intelligence profiles, and Learning Styles preferences of prospective English teachers?

Question 2. Is there any relationship among Multiple Intelligences and Emotional Intelligence profiles of the prospective English teachers and their Learning Styles?

Question 3. How well do Multiple Intelligences, emotional intelligence, and Learning Styles of the prospective English teachers predict their academic achievement?

Question 4. Do high, moderate and low language achievers differ in their multiple intelligences profiles, emotional intelligence, and learning styles preferences?

Question 5. Do demographic factors such as age and gender play any role in prospective English teachers' perceptions of MI profiles, emotional intelligence, and learning styles?

Question 6. How do the participants feel about their multiple intelligences profiles, emotional intelligence, and learning styles?

1.8. Definitions of the Terms

A glossary of the key terms that appear in the dissertation are given below. These terms belong to Multiple Intelligences theory, its domains and subcomponents, Experiential Learning Theory, learning styles and categories of learning styles in EFL settings.

Abstract Conceptualization: It refers to a situation where thinking, theorizing , and analyzing problems influence learning rate (Kolb, 1985, 2005).

Accommodator: It refers to a person who is interested in problem solving through planning and carrying out experiments (Kolb et al., 1979; Kolb, 1985; Henke, 2001).

Active Experimentation: It presents a situation where learning by doing and hands-on activities affects learning (Kolb, 1985).

Assimilators: Assimilator is someone who can solve problems through inductive reasoning and theorizing (Kolb et al., 1979; Henke, 2001).

Bodily/Kinaesthetic intelligence: It refers to controlling body movement, manual handiness, and balancing body movements. Moreover, it includes eye and body movement, using whole body and facial expressions to express one' opinions, especially using hands and paralinguistic features to convey or transform information (Gardner, 1993a; Armstrong, 2009).

Concrete Experience: It refers to learning from feelings or rresponses to experience (Kolb, 1995).

Converger: It refers to a person who learns beter by problem solving and relying on hypothetical-deductive reasoning (Kolb et al., 1979).

Diverger: It refers to someone who is involved in solveing problems by brainstorming, posing new ideas, and anaizing situations from many perspectives (Kolb et al., 1979).

Emotional intelligence: It refers to knowing one's own emotions and understanding other peoples' emotions and using emotions to influence and guide others.

Experiential Learning Theory: Experiential Learning Theory (ELT) emphasizes the centrality of experience in the learning process. It views learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (Kolb 1984, p.41).

Intelligence: Intelligence is defined as "the ability to solve problems, or to create products, that are valued with one or more cultural settings" Gardner (1983, p. 81).

Interpersonal intelligence: It refers to the perception of other people's feelings, ability to establish relations with others and engage in communications (Armstrong, 2009).

Intrapersonal intelligence: It refers to self-awareness and personal cognisance, and the ability to adapt one's actions drawing upon one's self- knowledge, self-discipline, and self-esteem.

Learning styles: Learning styles represent one's general approach and preferences for one mode of ustilizing one's abilities to solve a problem over the others.

Linguistic intelligence: It refers to the capacity to use effectively words and language, either written or spoken. It also concerns with the ability to Express one's ideas and information via language, and one's ability to manipulate language structures and systems, i.e., syntax, phonology, semantics, and pragmatics in various contexts.

Logical /mathematical intelligence: It refers to logical and abstract thinking, working with patterns and relationships, and deductive reasononing. Furthermore, it refers to the ability to use numbers effectively and perform mathematical calculations, and understand relationship between logical patterns, statements and propositions.

Multiple Intelligence: A multiple intelligence refers to a multiple capacity or multi-modal capability to solve problems.

Musical intelligence: It refers to musical ability, sound awareness, and ability to recognize and use sounds. It also concerns with an individual's capacity to learn through "rhythm, melody, singing", and listening to music and melodies, and also the ability to produce music and appreciate the relationship between sound and feeling (Shearer, 2006b; Gardner, 1993a; Armstrong, 2009).

Naturalistic intelligence: It refers to ability for recognizing and and classifiying plants, minerals, and all varities of flora and fauna (Armstrong, 2009).

Reflective Observation: It refers to a situation in which learning is influenced and shaped by watching and listening (Kolb, 1985).

Spatial intelligence: It concerns with visual and spatial ability to perceive, interpret and create visual images, and express feelings through pictures, colors, visualizating and drawing.

1.9. Organization of the Study

The present study comprises five chapters. The first chapter covers the overall dissertation, referring mainly to the background information of the study, statement of the problem, purpose and objectives of the study. It also introduces the significance of the study, its limitations, research questions, and definition of basic terms used in the study. Chapter two highlights the review of related literature, theoretical background to the variables to be measured, the descriptive and empirical investigations of Multiple Intelligences, emotional intelligence, and learning Styles as well as learner types in relation to language and academic achievement. Chapter three illustrates the methodology of the research, research design and instrumentation, population and sampling, procedures of data collection and data analysis. Chapter four offers the results and discussion of the findings in the order of the research questions raised in the current chapter of the dissertation. Finally, chapter five provides a brief summary of the research, i.e., research findings, pedagogical implications of the study along with suggestions and recommendations for the curriculum development' teacher education programs, and further research.

2. LITERATURE REVIEW

2.1. Introduction

This chapter provides background information on multiple intelligences viewed as an array of abilities and skills students of SLA potentially possess and utilize in solving language related problems on one hand, and learning styles whose core contents represent one's preferences for specific mode of learning over the others with respect to academic achievement in EFL settings on the other. The review of the related literature is given in 3 main parts. The first part presents theoretical and conceptual development of multiple intelligences, the controversy over the definition and perception of the concept of intelligence as well as multiple intelligences, different approaches to understanding intelligence, criteria for a capacity or skill to be considered as intelligence, different types of intelligence, studies carried out to investigated the role of MI in various fields including education (Özgen et al., 2010) with greater emphasis on second language (L2) learning (Christison, 1996, 2006; Seifoori & Zarei, 2011; Torresan, 2010), critiques of MI theory and the role of emotional intelligence, developed by Goleman (1995) in L2 research. The second part presents the theoretical and conceptual development of the concept of Learning Styles or 'cognitive styles', complexity of the construct and its overall nature, and various types of leaning styles and their corollary leaner types, models of learning styles, focusing on those styles and models related to SLA.

It is hoped that the study will be able to shed more light, as far as possible, on the understanding of these phenomena by special reference to the various distinguished figures and scholars in the field. Finally, the following section covers some main empirical studies carried out on the relationship between multiple intelligences and other concepts such as 'emotional intelligence', 'learning styles' and 'personality types' whose effects on successful learning have now been confirmed by substantial research in various fields, especially in foreign and second language learning (Tao, 2011,Vaseghi et al., 2012; Kara,2009; Sadeghi et al.,2012; Riazi and Riasati,2008; Razawi et al,2011; Felder and Henriques,1995;

Reid, 1987; Brown, 2007; Ehrman et al.,2003;Tekiner,2005) and their effects on learning outcomes and academic achievement in English language teaching.

2.2. Conceptual and Historical Background of Intelligence

A unitary general ability ('g' factor) view of intelligence is now commonly acknowledged by many researchers. Yet, there are others who do not seem to agree that there is a general capability that encompasses all that human beings potentially are able to do. According to Maftoon and Najafi (2012, p.1234), the concept 'intelligence' refers to "a very general mental capability that, among other things, involves the ability to reason, plan, solve problems, comprehend complex ideas, learn quickly and learn from experience".

Brown (2001) argues that the term intelligence was once considered as the capacity to cope with linguistic and logical-mathematical problem solving. Proponents of Intelligence Quotient (IQ) tests viewed intelligence as a single, unchanged capacity. However, this tradition of intelligence testing was severely criticized for failing to account for the potential capabilities of humans by the scholars who believed that intelligences are subject to change through education and practice.The existing of empirical evidence in SLA now supports the idea of the 'Learnablity' of intelligences.

Since the earliest conceptualization of the term 'intelligence' approximately a century ago, there have been various approaches, e.g. psychometric approach, information processing approach, Multiple Intelligences approach, to the nature and the core characteristics of intelligence both in SLA and other educational centers. A clear understanding of these approaches in L2 learning is required of anyone who attempts to create more effective learning environments for the learners since each approach views the construct from different perspective. Therefore, teachers and educators should have a comprehensive knowledge of these approaches so that they can better appreciate the concept and, consequently, opt for and incorporate it into their teaching practice. There are some major approaches to intelligence to which I now devote my attention.

2.2.1. The Psychometric Approach

The major concern of psychometric approach is to assess intelligence using IQ tests and has a single, unitary, quantitative concept of intelligence. Embretson and

McCollam (2000) distinguish between traditional and contemporary psychometric approaches. The traditional approach, also known as factor-analytic approach, was applied to discover the number and nature of the factors that underlie performance on cognitive tasks. Factor analysis approach was a prevailing approach until 1970s and served as basis for most of testing methods ever since(Carroll, 1993). The contemporary psychometric approach, however, uses confirmatory Item-Response Theory (IRT) models to compare, understand and measure individual differences. It differs from traditional approach in three major perspectives(Embretson and McCollam, 2000, p.1):

1. Confirmatory approaches predominate over exploratory approaches.
2. Structural analysis of items predominates over structural analysis of variables.
3. Item response theory (IRT) models predominate over factor analytic models.

Undoubtedly, most of the tests and scales developed within psychometric approach aimed at measuring individuals' logical-mathematical and linguistic capacities of humans because of the relative ease with which they are measured by psychometric measures.The psychometric approach emphasizes on the differences between people in terms of their genius, eminence, and other notable forms of accomplishment, and their abilities to solve problems through inductive reasoning (Lohman, 2005; Tekiner, 2005; Gardner, 2011). The term intelligence intelligence (in its generic sense) is looked upon as a fixed unitary factor which reflects an individul's general cognitive capacity to solve complex problems.

The chief figures in this area were Spearman, Alfred Binet and his colleague Simon. Spearman proposed a two factor theory of intelligence in 1904. According to this theory, an individual's performance was determined by two factors: (a) general factor (g), which is a universal factor related to a person's general intelligence to measure his/her all forms tests and tasks, and (b) a specific (s) factor which is individual specific due to a unique ability or activity related to a particular test. Spearman (1904) posited that "all branches of intellectual activity have in common one fundamental function (or group of functions), whereas the remaining or specific elements seem in every case to be wholly different from that in all the others" (p.284). Therefore, tests directed to assess intellectual activities,

or intelligences, were governed by the degree to which they measure an individual's 'g' or 's' (Sternberg, 2004; Embretson and McCollam, 2000).

Until recently, the large proportion of research carried out in SLA has used psychometric approach to measure foreign language learners' proficiency in learning an L2. Researchers have developed and employed psychometrically based questionnaires and scales for this purpose. Deeply rooted in cognitive psychology, psychometric approach seeks to measure the quantitative differences in cognitive abilities of the learners. Intelligence testing like language testing has its own history in terms of supporting theories and approaches as well as unsupportive ones. As intelligences also appeal to our cognitive abilities, intelligence testing in SLA, like language testing, has been influenced by various theories from psychology and educational psychology. Therefore, in testing L2 learners' cognitive and intellectual abilities which contribute to an individual's professional accomplishment, scales developed based on the principles of modern psychometric approach, e.g. Multiple Intelligence Developmental Assesment Scale (Shearer 1996), would yield more useful and reliable insights. Instruments targeting learner intelligences often use psychometric measures evaluated by employing statistical analyses such as exploratory and confirmatory factor analyses can provide a more psychometrically sound measure of the role of intelligence in learning an L2 than traditional scales.

2.2.2. Developmental Progression Approach

The developmental progression, also known as 'cognitive-processing' approach (Sternberg, Lautrey, and Lubart, 2003), focuses on the developmental nature of intelligences in human beings. Chief figures in this area are Bruner, Piaget, and Vygotsky. As stated earlier, IQ tests primarily measured verbal and logical-mathematical dimensions of human intellect because they are readily measured by psychometric measures. They rarely assess skill in assimilating new information or in solving new problems. Moreover, they provide little about a person's potential for further growth. To put it differently, using Vygotskian terminology, intelligence tests fail to provide evidence for individual's "zone of proximal development."

Dissatisfied with traditional IQ tests, Piaget (1972) developed a radically different and extremely powerful view of human cognition. He believed that the individual is

continually constructing hypotheses to figure out the nature of material objects in the world, the interaction with one another, as well as the nature of persons in the world, their motivations, and their behavior. In other words, the individual tries to adapt himself to his environment through a dynamic reorganization of schemata. This provides a rich source for the development of intelligence.

Unlike Piaget who emphasized the developmental stages for human cognition and intelligence, Vygotsky (1978) posited that intelligence is a social construct and develops through social action and scaffolding and functions within the zone of proximal development (ZPD). Therefore, social interaction is vital factor in the development of intelligence. He also believed in the internalized aspect of intelligence. However, he argued that it is the individual's external experience that becomes a part of an individual over time as a result of internalization.

The Developmental Progression Approach (DPA) contributed a lot to understanding intelligence, its role in L2 learning and development of approaches, theories and methods in second language acquisition. For example, 'sociocultural theory', 'constructivism', and Communicative Language Teaching (CLT) were originated and supported by developmental progression approach. Constructivism integrated the linguistic, psychological, and sociological paradigms, emphasising on social interaction, discovery learning, and construction of meaning in language learning (Brown,2007). Themes such as sociocultural variables, cooperative learning, discovery learning and construction of meaning, interactive discourse, conversational discourse, and interlanguage variability were introduced to SLA by constructivism. The MI theory, especially with its personal intelligences, i.e., interpersonal and intrapersonal intelligences which are closely related to spoken language, is linked to this line of research in SLA through highlighting the role of social interaction and sociocultural factors in L2 learning and an individual's capability to communicate and construct meaning .

2.2.3. Information-Processing Approach

The information processing approach is rooted in information processing Psychology, or cognitive science. There exists a close relationship between information processing Psychology and experimental psychology because information-processing psychologists often use the methods devised by experimental psychologists to investigate tasks employed by cognitive theorists.

Researchers in this field, according to Gardner (2011), often try to provide a second by-second “microgenetic” picture of the mental process involved in solving a problem in a way that an individual’s performance during problem solving can be simulated on a computer. The information processing approach is “concerned with constructing macro theories of intelligent human or nonhuman-systems at a very detailed level, that is, at a level where theories can be implemented and run on computers” (Sternberg,1990, p. 130).

As second language learning is an intellectual activity, individuals use different processes in performing different language tasks, and the speed and accuracy of these processes vary from one person to another. Therefore, the intelligence testing must make use of information-processing model to identify appropriate measures of the processes used in performing the language learning tasks not just factors.

Thanks to the substantial information provided by information-processing intelligence theory on the details of processing and the illumination of the microstructure of a task, we now have much more dynamic view of what is going on in the course of problem solving. Moreover, information-processing approach also concerns with details of the mental phenomena including cognition and metacognition, the two terms which cognitive psychologists mainly are interested in (see Necka & Orzechowski, 2005; Tekiner, 2005). Cognitive psychological approach, however, is unable to clearly differenciate cognition from intelligence since the approach “lacks an articulated theory within which different forms of cognition can be convincingly related to (or distinguished from) one another ”(Gardner, 2011, p.24).

2.2.4. Psycho-Biological Approach

Inspired by brain-based research, psycho-biological approach tries to define and explain intelligence by using the information from brain-based studies and also from studies which try to find out how central nervous system functions.There exists substantial evidence in the literature (Newman & Just, 2005; Sternberg, 1990; Eysenck, 1988; Ceci, 1990) that this approach, in order to find out what sort of psycho-biological factors involve in the development of intelligence, makes use of recent developments in neurophysiology (see Cole et al., 2012). Ceci’s (1990)

bio-ecological theory of intelligence rejects the concept of ‘single intelligence’ and supports multiple cognitive potentials including environmental, biological, metacognitive and motivational variables. He believes in the biologically based and multi-cognitive view of intelligence which is complete in terms of context and knowledge (Selçuk et. al., 2002; Göğebakan, 2003).

Salovey and Mayer (1990) and Goleman (1995) argue that emotions play a significant part in successful learning. They tried to find out if there is a dynamic and continuous relationship and interaction between emotional and cognitive centers of the brain. They maintained that perception and controlling emotions may enhance learning and, conversely, emotional centers of the brain could constrain the proper functioning of emotions in learning. Their views provide a rich resource for Emotional Intelligence theory. Newman and Just (2005) argue that it is unrealistic to think of a particular region for intelligence in the brain since it is “a function of a more distributed, dynamically configured set of areas” and ‘g’ “may be the product of an adaptive, flexible neural system” (Newman and Just, 2005, p. 100).

2.2.5. Sound Symbols Approach

As seen in the previous sections, the IQ, the Piagetian, and the information-processing approaches all focus on a certain kind of logical or linguistic problem solving and ignore the crucial role of biology and avoid enaging in combat for higher levels of creativity. Human symbolic capacities, which are delineated and supported by the Semiotic Approach to second language learning, are the neglected areas in studies of human intellect and intelligences. As a matter of fact, what distinguishes human beings from other organisms is the human capacity to use symbolic systems to put forward their ideas and convey meanings. Using symbols has played a crucial role in the evolution of human nature, giving rise to myth, language, art, and science. It has kept its right place in the highest creative accomplishments needing symbolic faculty.

The question is, according to Gardner (2011), whether operation of a single symbol system such as language involves the same abilities and processes as such cognate systems as music, gesture, mathematics, or pictures. In other

words, is the information transmitted in one medium is the “same” information when transmitted by another medium? Taken the proverb “Don’t throw out the baby with the bathwater” into account, the sound symbols approach to human cognition and intelligence focuses on various symbol systems including the ones related to human beings musical, bodily, spatial, and even personal symbol systems (Lessem & Baruch, 1999) while using the linguistic, logical and numerical symbols of classical approaches such as developmental progression approach. Indeed, cultural and symbolic aspects of intelligence have been clearly expressed in Gardner’s (1983) original definition of the construct when he defines intelligence as “the capacity to solve problems or to fashion products that are valued in one or more cultural setting” (Gardner,1983, p.x).

2.2.6. Multiple Intelligences Approach

Ever since Alfred Binet developed the first successful intelligence test in 1905, the dominant theory in the scientific and research literature has been that intelligence is a unitary fixed trait that can be assessed by administering a single IQ test. Teele (2000) argues that current trend in educational research tends to apply psychometric measures in order to compare and contrast students and schools. However, recent developments in neuroscience and cross-cultural understanding, many researchers and critics have challenged the adequacy of the IQ test to account for an individual’s intellectual capacity, or intelligence (Gardner, 1993a, 2011; Sternberg, 1985, 1990; Pretz & Sternberg, 2005). Teele (2000) contends that, “substantial research supports the fact that individuals process in multiple, interactive and complex ways” (p. 12-13). She warns that measurement of this type involves only one or two methods which learners are familiar with. Thus, it cannot be considered as the only best means of measuring academic achievement.

As a reaction to this dominant view of intelligence, many scholars (Carroll, 1993; Guilford, 1967; Horn, 1982; Thurstone, 1938) tried to articulate alternative models of intelligence, but none have been welcomed by educational and scientific communities. Among the proposed alternative models of intelligence that have influenced research in educational and scientific circles are multiple intelligences (MI) theory put forward by Gardner (1983), sternbergs’ (1985) successful

intelligence or “Triarchic Intelligences”, and Goleman’s (1995) “emotional intelligence” theory.

Contrary to the traditional and dominant view of intelligence as a single, measurable entity, Gardner (1983) asserts that human beings possess a number of relatively autonomous cognitive abilities which he calls them multiple intelligences (MI). As Barrington (2004) simply puts it, the core proposition of MI is that “There are not just two ways to be intelligent, but many ways” (p.422). This simple and straightforward proposition challenged the practice of measuring intellectual ability by means of traditional intelligence (IQ) tests which express a person’s “intelligence” in terms of verbal and non-verbal (logical-mathematical) IQ scores (van Niekerk, 2009). MI theory accepts and respects human differences and at the same time supports and elevates the notion of human dignity and uniqueness. The (MI) theory has given rise to various reform initiatives in educational centers that support inclusive teaching philosophies, techniques and assessment strategies found to be effective for learners with and without barriers to learning (Armstrong, 2000, p.21; Campbell, 1992, p.199).

The MI theory asserts that intelligences proposed by it are of dynamic nature and can be subdivided or rearranged. That is, they may be divided into subintelligences. Gardner (1983, 2011) contends that intelligences are independent to a significant extent, since evidence from neuroscience indicate that some of the abilities can be lost while others remain unchanged. Gardner (1993a), however, asserts that despite being independent, intelligences always work in tandem, and performing any problem solving task involves a combination of these intelligences. Armstrong (1999) asserts that “There is virtually no activity in life that can be undertaken with only one intelligence” (p.63).

As for the assessment of the intelligence, Gardner (TIP database 2003c) suggests that a full range of individual’s intelligences should be measured not just linguistic and logical-mathematical intelligences as in the case of traditional IQ tests. As human beings are culturally conditioned, cultural contexts of intelligences should be also taken care of in measuring them. Some cultures may represent high abilities or intelligences, say spatial intelligence, depending on their cultural norms and geographical conditions.

2.2.7. Integrated Approach

There have been numerous definitions of intelligence ever since it was originated in the late 1900s. The controversies and inconsistencies in the definitions of intelligence are clearly rooted in the approaches and theories articulated and adopted with respect to the nature of the term intelligence and views of those who proposed and advocated them. Gardner (1999) clearly defines intelligence as "a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that of value in a culture"(p.34). He maintains that any intelligence must pass certain empirical tests. Sternberg (1996, 1997, 1999b, 1999c, and 2002) introduced "successful intelligence" which views intelligence as

> *the ability to succeed in life according to one's own definition of success, within one's sociocultural context, by capitalizing on one's strengths and correcting or compensating for one's weaknesses; in order to adapt to, shape, and select environments; through a combination of analytical, creative, and practical abilities (Sternberg & Grigorenko, 2002, p.265).*

Shearer (2006b) proposed Integrated Model of Multiple Intelligences (IMMI). He compared and contrasted Gardner's model of Multiple Intelligences (MI) and Sternberg's "Triarchic Theories" on one hand and conducting the same sequence of activities to integrate "emotional intelligence" (EQ) with MI theory. Indeed, the (IMMI) integrates 'originality', 'common sense' and 'logical-mathematical' aspects of MI with the 'creative', 'practical' and 'analytical' aspects of Sternberg's Triarchic or Successful intelligence respectively.

Shearer (2006b) argues that both theories consider "creative thinking" as a significant aspect of the human intellectual profile. Gardner (1993b, p.88) uses the term "originality" to describe "the skill of fashioning an unfamiliar and yet worthy product within a particular realm, be it an innovative story or dance, the solution of a personal conflict or a mathematical paradox" and Sternberg (1996, p.189) refers to creatively gifted people as being able to discover, create and invent especially in the realm of creating ideas that are both novel and valuable (Shearer, 2006b, p.15).

The (IMMI) also integrates cognitive abilities neglected by IQ in problem solving. Sternberg (1996) refers to this ability as "practical intelligence" which involves 'using, utilizing, and applying knowledge' and Gardner calls it "common sense'

which involves a “higher level cognitive operation” and, “the ability to deal with problems in an intuitive, rapid, and perhaps unexpectedly accurate manner (Gardner, 1993, p.287).” Both Gardner and Sternberg maintain that practical thinking is “problem-solving that takes place in daily life without regard to formal ideas, systems or theories” (Shearer, 2006b, p.22).

2.3. Conceptual Development of Multiple Intelligences

Multiple Intelligences concept was coined and introduced by Gardner (1983), an American developmental psychologist, in his influential book entitled Frames of mind as a reaction to traditionally held views on human intelligences. It quickly became established as a classic model in education, science and industry, used for understanding and teaching human intelligence, learning preferences and styles, personality types and behavior. Although Gardner’s initial impetus for developing the theory of multiple intelligences to contribute to the field of psychology, his theory was welcomed by educators, teachers, and experts in educational and training circles.

Dissatisfied with traditionally held beliefs on human intelligence as being a single immutable capacity that an individual is born with, Gardner argued that high scores in standardized Intelligence Quotient (IQ) and aptitude tests like Binet’s (1904), which are largely based on mathematics, computational skills, and language tests including verbal fluency and wide vocabulary cannot alone serve as a proof of human intelligence. Therefore, intelligence should be viewed as something beyond the scores made in standard paper-and-pencil tests which are often used to estimate success at schools (Özgen et al., 2011). Gardner challenged the prevailing model of a single, unitary intelligence and maintained that intelligence is pluralistic, multidimensional or multifaceted with various abilities that cannot be explained by a single general factor (Gardner, 2004). He views intelligence as one’s ability to solve problems and create fashion products valued within one’s own culture (Gardner, 1983) and unfold new and complex problems demanding solutions (Saban, 2004). Consequently, intelligence cannot be based upon a single structure. Later, Gardner (1999) revised his definition of intelligence and defined it as “a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture” (p. 34).The new definition of intelligence basically broadened the

“scope of mental and behavioral performances” that constitute our intellectual repertoire (Shearer, 2006b).

The MI theory draws greatly on the biological developments and neurosciences existing developmental and experimental psychology, psychometrics, and cultural studies. The major sources of MI theory, then, come from Gardner and his colleagues’ research at Project Zero through the work on the development of various cognitive skills in normal children and collapse of these abilities in patients suffering from stroke and other “brain-damaged” patients (Tekiner, 2005; Armstrong, 2009). Additionally, evidence from experimental psychology, psychometric psychology cognitive psychology, developmental psychology, differential psychology, neuropsychology, evolutionary biology, genetics and anthropology (Gardner & Moran, 2006; Kornhaber, 2004) provided a rich source for supporting MI theory (Temiz, 2010).

Gardner’s MI theory is now being incorporated in many school curricula to re-evaluate and redesign the educational system and educate students around the world based on MI driven principles. Although the MI theory was not welcomed so warmly by psychological centers, it attracted the attention of many educators and numerous journal articles (Baleghizadeh & Shayeghi, 2014; Campbell, 1997; Daniel, 1997; Mills, 2001; Eisner, 2004; Maftoon and Najafi, 2012; Posner, 2004; Seifoori & Zarei, 2011) and books (Armstrong, 1994, 2000, 2009; Campbell, Campbell & Dickinson, 1996,1999; Gardner, 1983, 1993a, 1993b, 2011; Lazear, 1992; McKenzie, 2005; Saban, 2005, 2010).

Gardner and Moran (2006) argue that MI approach attempts to change the minds of researchers and educators and attract them to an “alternative approach which requires an interdisciplinary perspective, cultural sensitivity, and an interactionist-dynamic research methodology” (p.228). They also argue that MI has many advantages over other approaches since it:

1. better explains the wide variety of “intelligent” performances among children and adults depending on level of training, context, culture, and innate predisposition,
2. better addresses the incongruities and imbalances of intelligent behavior both between individuals and within individuals,

3. does not overprivilege the “average” person; rather, it makes room in the scholarly debate for experts whose intelligence profiles fit perfectly with a cultural domain; creators whose intelligence profiles are incongruous with a cultural domain in a fruitful, surprising way; and savants and brain-damaged patients who exhibit a striking disparity among abilities (Gardner and Moran, 2006, p.228).

2.3.1. Principles of Multiple Intelligence Theory

Theoretically, the multiple intelligences theory defines and accounts for human nature from a cognitive perspective, the way we perceive and are aware of things and objects in the world. Gardner contends that there are certain principles related to his multiple intelligence theory. This means that, in addition to the descriptions and theoretical underpinnings of intelligences, MI theory has some principles (Armstrong, 2009; Gardner, 1993b; Kelly & Tangney, 2003, 2004a, 2004b; Maftoon & Najafi, 2012; Rogers, 2011) as follow:

1. Intelligence is not singular: intelligences are multiple.
2. Every person is a unique blend of dynamic intelligences.
3. Intelligences vary in development, both within and among individuals.
4. All intelligences are dynamic.
5. Multiple intelligences can be identified and described.
6. Each and every person deserves opportunities to recognize and develop the multiplicity of intelligences.
7. The use of one of the intelligences can be used to enhance another intelligence.
8. Personal background density and dispersion are critical to knowledge, beliefs, and skills in all intelligences.
9. All intelligences provide alternate resources and potential capacities to become more human, regardless of age or circumstance.
10. A pure intelligence is rarely seen.
11. Developmental theory applies to the theory of multiple intelligences.
12. Any list of intelligences is subject to change as we learn more about multiple intelligences.(Rogers, 2011).

2.3.2. Criteria for Intelligences

As stated earlier, the reason why other intelligences cannot be so readily added to the original model is the fact that both Gardner and his followers couldn't expand the original intelligences because, as Gardner rightly puts it in several books and articles, to be called an 'intelligence' it must meet some criteria. Therefore, Gardner employs eight criteria to substantiate and identify the eight intelligences. A frequently asked question about Gardner's classification of intelligences into eight types and exclusion of other human attitudes, talents, skills and abilities from the MI theory is that why Gardner calls them 'intelligences' rather than talents and aptitudes or skills. In order to answer this question, Gardner (1993b, p. 35) writes:

> *There is nothing magical about the word "intelligence". I have purposely chosen it to join issue with those psychologists who consider logical reasoning or linguistic competence to be on a different plane than musical problem-solving or bodily kinesthetic aptitude…To call some "talent" and "intelligence" displays this bias. Call them all "talents" if you wish; or call them "intelligence".*

Moreover, in order to show the difference between intelligence and an aptitude or talent, Gardner (1983, 1993a, 1993b,1999, and 2011) asserts that there are some basic "signs" or criteria that an intelligence must exhibit in order to be considered as intelligence. Armstrong (2009) put these "signs" or criteria into eight categories. The followings are criteria compiled and summarized by Christison (1996, p.9-10) and Armstrong (2009, p.8-15) based on Gardner's contentions:

1. They must be susceptible to isolation by brain damage.
2. The existence of savants, prodigies, and other exceptional individuals.
3. There should be a distinctive developmental history and a definable set of expert "end-state" performances.
4. The intelligence must be rooted in evolutionary history and evolutionary plausibility.
5. The existence of an intelligence may be supported by psychometric findings.
6. The intelligence must be supported by experimental psychological tasks.
7. An intelligence must have an identifiable core operation or a set of operations.

8. An intelligence must be susceptible to be encoded in a symbol system (Armstrong, 2009, p.8-15).

Gardner's first widely accepted conceptualization of multiple intelligences model included seven designated intelligences. He identified these intelligences by studying the development of cognitive skills in normal children and the collapse of these abilities in various cases of stroke and brain-damaged patients among others(Krechevsky & Kornhaber, 2003; Tekiner, 2005). The core content of Gardner's MI theory (Gardner,1983, 1993a, 2011), as one of the intelligence theories based on multiple perspective, highlights the possibility and feasibility of defining human cognitive competence in terms of talents, abilities, and mental skills called intelligences. These multiple will be discussed in details in the forthcoming sections of this chapter.

However, Gardner emphasized from the beginning that there could be other additional intelligences worthy of inclusion in the multiple intelligences model. For example, Gardner discussed the possibility of Naturalist Intelligence (an individual's perception of and relationship with the natural environment); Spiritual or Existential Intelligence (one's relationship with the universe or God); and Moral Intelligence (one's capacity to perceive ethics, humanity, value of life, and relationship with other living things and their well-being). Later, Gardner (1993a) added the eighth intelligence, namely the Naturalist Intelligence, to human beings intelligence repertoire claiming that all human beings potentially possess these eight intelligences and that the only difference is the matter of degree.

The original eight intelligences and the naturalist intelligence are relatively 'cut and dried'. In other words, they are measurable, understandable, meaningful to us, and we can easily evidence or illustrate them. However, regarded as the ninth intelligence type, the "existential intelligence" does not yet qualify Gardner's eight criteria of intelligence. Gardner is 'quipped' that he has $8^{1/2}$ intelligences because he has considered to include spiritual intelligence into MI theory (Armstrong, 2009). Its inclusion into the MI theory as an independent and 'cut and dried' intelligence is still under discussion and investigation (Saban, 2004; Checkley, 1997; Gardner, 2004). Research in SLA (Arnold and Fonseca Mora,2004) has shown that nearly all the intelligences within MI theory are related to L2 learning with varying degrees depending on the linguistic variables under investigation. In

the following sections, the eight intelligences which qualify inclusion into MI theory and their relationship to SLA will be dealt with in details.

2.3.3. Verbal- Linguistic Intelligence

Linguistic intelligence is defined as the ability to learn languages and use language to express what is in one's mind and to understand people. Those who have high linguistic intelligence are well-developed in verbal skills and have sensitivity to sounds, meanings, and rhythms of words (Hampton, 2008, Mohammadi & Mousalou 2012). In the same vein, Lazear (1991, 1994) views linguistic intelligence as the capacity to use language (words), one's native language, and perhaps other languages, effectively, either orally or in writing, to express what is on one's mind and to understand people (Tek and Peng, 2006). A well-developed verbal-linguistic intelligence, as put rightly by Tek and Peng (2006), is well depicted through professional use of words, syntax and style. It has been hypothesized that poets and playwrights are truly specialised in linguistic intelligence.

Similarly, Samples (1987), Gardner (1999), Armstrong (1994, 2009) observe that linguistic intelligence concerns with the abilities in the complex acquisition, formation and processing of language. It is worth noting that Samples(1987) classifies verbal-linguistic and logical-mathematical intelligences in one category as Abstract-Symbolic intelligences (Wilson,1997). Wilson (1997) states that reading, writing, the development of symbolic writing and language skills-anagrams, metaphors, similes, puns, and analogies come under this heading. She further argues that children who start to talk early, those who enjoy making sounds and rhyming patterns; children who are prolific readers and have good memories for poetry, lyrics, tongue twisters, and verse may have a propensity in verbal linguistic intelligence. These individuals exhibit greater natural tendency to love words, both spoken and written, often think in words, learn by listening, reading and verbalization, by saying, seeing and hearing words (Wilson, 1997).

Individuals with verbal-linguistic intelligence prefer to think in words and to use language to express and understand complex meanings. They are often sensitive to the meaning of words and the order among words, sounds, rhythms, and inflections. They tend to reflect on the use of language in everyday life (Shearer,

2006a). Learners with verbal-linguistic intelligence learn better throughlistening and hearing, which is closely related to listening comprehension skill in language learning, and seeing words, speaking, reading, writing, discussing and debating. Therefore, students should be involved in classroom activities such as presenting materials, reading content and preparing a presentation for his/her classmates and debating over an issue (Bellamy & Baker, 2005; Giles et al., 2003).Campbell et al., (1996:4) have identified and put forth the characteristics of person with a well-developed verbal-linguistic intelligence most of which are related to pronunciation and foreign language learning. It is suggested that verbal-linguistic intelligence construct has a multidimensional nature and includes various components.

Gardner (2011, p.81) argues that a sensitivity to the meaning of words, whereby an individual appreciates the subtle shades of difference between spilling ink “intentionally,” “deliberately,” or “on purpose.”, a sensitivity to the order among words, that is, the capacity to follow rules of grammar, and, on carefully selected occasions, to violate them, a sensitivity to the sounds, rhythms, inflections, and meters of words at a somewhat more sensory level that can make even poetry in a foreign tongue beautiful to hear, and a sensitivity to the different functions of language, i.e., its potential to excite, convince, stimulate, convey information, or simply to please are among the core operations of language and linguistic intelligence, especially in poets and poetry . Similarly, linguistic intelligence concerns with the “ sensitivity to different spoken and written languages, to shades of meanings, and to interactions among linguistics connotations” (Granott and Gardner, 1994, p. 174).

Language is considered as a preeminent instance of human intelligence and it is also the most thoroughly studied intelligence. From L2 learning perspective, linguistic intelligence can help people understand and effectively convey the linguistic messages. Linguistic intelligence with its crucial component semantics, along with phonology, syntax and pragmatics has great potential to help learners to cope with the challenges during second language learning. Moreover, the predominant linguistic intelligence empowers language learners to “easily express themselves in a spoken or written manner, can easily match synonyms, comprehend a reading text or write a paragraph (Spirovska, 2013, p.3)”.

2.3.4. Musical Intelligence

Musical intelligence is regarded as a talent derived from natural ability, or a gift that only certain people possess (Gardner, 1993a). It is also defined as the ability to discern meaning and importance in sets of pitches rhythmically arranged and also the capacity to produce such metrically arranged pitch sequences as a means of communicating with other individuals. Gardner (2011, p.105) asserts that “of all the gifts with which individuals may be endowed, none emerges earlier than musical talent”. He further argues that “though speculation on this matter has been rife, it remains uncertain just why musical talent emerges so early, and what the nature of this gift might be”.

Music undoubtedly contains certain components. Gardner (2011, p.111) argues that, of the principal constituent elements of music, pitch (melody) and rhythm defined as the “sounds emitted at certain auditory frequencies and grouped according to a prescribed system” are most central to the musical intelligence construct. He further explains that how pitch is more central in certain cultures, e.g., the “Oriental societies that make use of tiny quarter-tone intervals; while rhythm is correlatively emphasized in sub-Saharan Africa, where the rhythmic ratios can reach a dizzying metrical complexity”. Gardner also speaks of the horizontal and vertical organization of music. By ‘horizontal’ he means the “relationship of pitches as they unfold over time” and by ‘vertical’ he means the “effect of two or more sounds emitted at the same time, giving rise to a harmonic or a dissonant sound.” Gardner also maintains that timbre, the characteristic qualities of a tone, is the only important element next to pitch and rhythm. He calls these central elements the ‘cores of music’.

However, intelligence associated with musical understanding does not always relate to superior levels of achievement in other academic areas. Gardner (1993a, p.334) argues that musical intelligence (like all intelligences) has two significant functions in educational context. It can serve both as form or means of learning, which is also referred to as entry point, and as a message or content learned. According to Gardner (1983), the term entry point refers to employing a student’s strength, one of the eight intelligences, to learn and understand academic content. Although the importance of music as form or means has been emphasized by many scholars (Armstrong, 1994; Campbell, Campbell and Dickinson, 1999; Emig,

1997; Lazear, 1991, 1994, 1995; Zybert, & Stępień, 2009), a few researchers have examined musical intelligence thoroughly so far and they have mainly focused on the music as the message or content learned while music as a form or means has often been neglected (Mills, 2001).

Brandt et al., (2012, p.1) argue that music recognized as a human universal is often treated as a subsidiary ability – one dependent on or derivative of language. They asserted that music is more productive from a developmental perspective to describe spoken language as a special type of music and that musical hearing and ability is essential to language acquisition. They challenged the prevailing view that music cognition matures more slowly than language (Wilson, 2012) and is more difficult.They stated that music learning matches the speed and effort of language acquisition and merits a central place in our understanding of human development.

In the same way, Wilson (1994, 1997) states that musical intelligence or auditory intelligence (Samples, 1987) obviously concerns with the ability to create or interpret music. Children with musical intelligence may need music while they study, and they are continually humming, singing, tapping out tunes rhythmically, or whistling. They are sensitive to rhythm, melody, and sound and can study with music in the background, play an instrument, notice non-verbal sounds in the environment, learn more easily if sung or tapped out. They have keen ears for distinguishing sounds and subtle nuances in music and in the sounds in their environments. They can also be excellent mimics and can easily discern differences in speech patterns or accents. In classroom contexts, these children learn best through rhythm, singing, melody, listening to music and melodies. They are actively involved in various classroom activities such as creating songs or melody with the contentment embedded for memory and are eager to use well-known songs by popular singers to memorize formulas, skills, or test contents (see Campbell et al., 1996:135).

As for the neurological basis of musical intelligence in humans, Gardner (1993a) argues that some parts of the brain located in the right hemisphere do have a vital role in the development of musical intelligence. However, unlike language, the clear localization of the musical skill is not readily established in a specifiable area

in the brain. Recent developments in neurolinguistics and technology support the neurological basis of music in the brain (see Cole et al., 2012; Popp, 2004).

Fonseca Mora et al., (2011) argue that the musical intelligence has to do with the ability to perceive and appreciate rhythm, pitch and melody, elements also crucial in the second language learning process, especially in learning pronunciation and intonation. Considered in this way, musical intelligence is central to learning intonation and its constituting elements, i.e. stress, pitch and juncture (Demirezen,2009) and the suprasegmental features of speech, namely rhythm, tempo and melody which are referred to as 'prosody'. The ingredients of intonation and prosody are diagrammatically illustrated in figure 2.1.below.

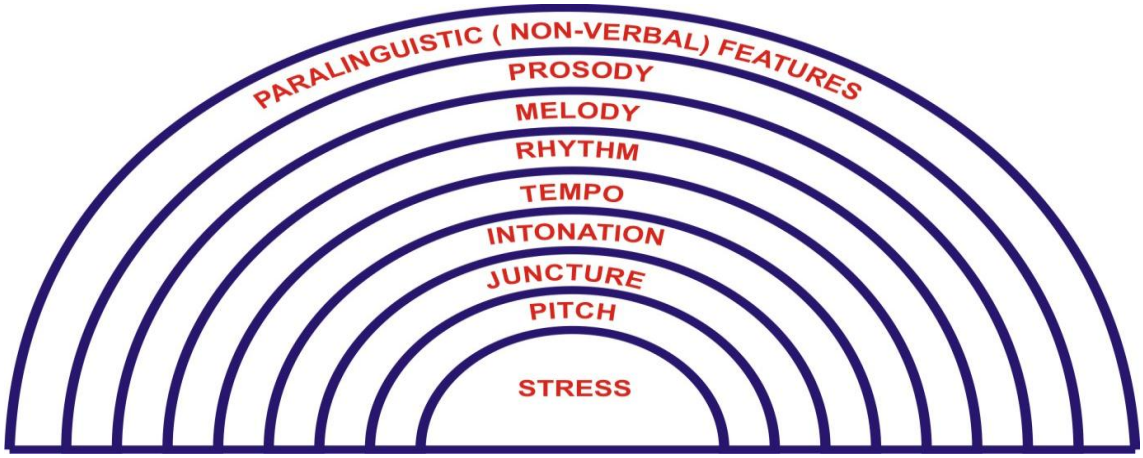

Figure 2.1. The ingredients of intonation and prosody (Adapted from Demirezen, 2009).

According to Demirezen (2009, p.120) intonation is, "the combination of pitch, stress and juncture with which an utterance is spoken". He further states that "Apparently, it is this togetherness of the trio, namely, pitch, stress, and juncture, which makes the learning of intonation the most difficult topic in foreign language education" (Demirezen, 2009, p.1). Given the teachablity and learnablity of the English sound patterns, more specifically the segmental and suprasegmental features of human speech, it can be concluded that people endowed with high musical intelligence possess the potential to learn English pronunciation better than those who are not.

2.3.4. Bodily-Kinesthetic Intelligence

Bodily/Kinesthetic intelligence refers to body movement control, manual dexterity, physical agility and balance(Shearer,2006a). Gardner (1983, p.207) views bodily–kinesthetic intelligence as a form of thinking, an ability to solve problems through "control of one's bodily motions". Gardner (1993a, p.206) maintains that some people, e.g. a mime, have the capacity to create a number of illusions simultaneously in order to convey an idea or to depict an object. This denotes that the person's actions and capacities to perform amazing illusions are closely associated with a highly evolved bodily-kinesthetic intelligence.

Bodily/kinesthetic intelligence is also characterized as the "ability to use one's body in highly differentiated and skilled ways, for expressive as well as goal-oriented purposes" and also as "the capacity to work skilfully with objects, both those that involve the fine motor movements of one's fingers and hands and those that exploit gross motor movements of the body" (Gardner, 2011, p.218). Gardner considers these two capacities, i.e., an individual's ability to control his/her motions and handle objects skilfully, as the cores of bodily-kinesthetic intelligence and contends that, like other intelligences, these two core elements of bodily-kinesthetic intelligence may exist separately, as in the case of dancers and swimmers, and that they may exist and go hand in hand coupled with the skill to manipulate objects as in the case of artisans, ballplayers and instrumentalists who are of the capacity to manipulate objects skilfully.

Hanna (2008, p.495) argues that 'some youngsters may be engaged to learn through bodily–kinesthetic approaches; yet all youngsters may benefit from the creative processes of dance making and dance-viewing and learn to "write" and read the nonverbal, which is critical to human survival". Diaz and Heining-Boynton (1995, p.610) state that bodily-kinesthetic intelligence is closely related to a variety of physical skills and capacities used for expressing feelings and ideas through dramatization and body movements. They maintain that "people exhibit bodily-kinesthetic intelligence by expressing ideas or feelings with their bodies, or by transforming or producing things."

Shearer (2006a) views bodily/kinesthetic intelligence as the ability to think in movements and to use the body in skilled and complicated ways for expressive and goal directed activities. He further states that those with this type of

intelligence possess a sense of timing, coordination for whole body movement and the use of hands for manipulating objects. He also classifies bodily/kinesthetic intelligence into two subscales, i.e., Athletics and Dexterity. The athletics concerns with the ability to move the whole body for physical activities such as balancing, coordination and sports whereas the dexterity deals with an individual's ability to use the hands with dexterity and skill for detailed activities and expressive moment.

People with bodily/kinesthetic intelligence are, therefore, more interested in movement, and are naturally endowed with good motor skills and often are aware of their physical and bodily strengths. They largely tend to learn through movement and active experimentation. To put it another way, they best learn by 'doing' and prefer to touch rather than just look at things, have strong tendency to figure out how things work. Armstrong (1999, p.10) refers to bodily /kinesthetic intelligence as the intelligence of the 'physical self'. This implies that, people who are dominant at bodily/kinesthetic intelligence are able to successfully control their body movements.

Drawing upon neuropsychological studies on the role of brain in carrying out motor activities, Gardner (1993a) argues that most segments of the body including our nervous system are involved in the execution of motor actions and that our kinesthetic sense, whose function is to monitor these segments of the body, helps us to judge the timing, force and the extent of our movements and make adjustments based on the information provided in this way and harmonize our complex movement system. He further speaks of similarities between the operation of motor systems of humans and other species and maintains that at least one dimension of these motor systems, i.e., capacity for dominance, is human specific claiming that the tendency for left hemisphere dominance is the proclivity of human beings. Indeed, he emphasizes and justifies the phenomenon referred to as lateralization process and the localization of the bodily movements by motor cortex.

Review of literature shows a strong body of evidence that bodily/kinesthetic intelligence is related to language learning and that some approaches to teaching foreign or second languages such as Asher's Total Physical Response method advocate the use of motor movements and body movements in the classrooms.

Shore (2001), for instance, studied both the university EFL teachers' and students' multiple intelligence strengths and self-efficacy, the correlation between the use of intelligences in lessons, student strengths in the corresponding intelligence and self-efficacy in reading, writing or speaking ,and the relationship between student culture and intelligences in English as a Second or Foreign Language programs in the United States. The findings indicated that 90% of the teachers who participated in the study tend to include logical/mathematical, linguistic and interpersonal intelligences in their lessons while students reported the greatest strengths in and preferences for mathematical-logical, visual-spatial, intrapersonal and interpersonal intelligences. The results also revealed that there were strong positive correlations between writing self-efficacy and interpersonal, intrapersonal, bodily-kinesthetic and linguistic intelligences.

It is often the case that students sit passively in rows for hours listening to teachers who provide them with verbal input. By so doing, the students' natural need for movement is taken into granted and neglected by the teachers, resulting in low levels of energy and creativity on the part of students. However, using activities that directly appeal to students' bodily-kinaesthetic intelligence, e.g. role-plays, language games, drama, and problem solving tasks, in the foreign language classroom can help create high levels of energy and creativity among students. This helps to greatly increase and maintain their attention. Non-verbal or paralinguistic features of communication have also proved to be more important in language teaching. Gestures as culture-bound features of communication are crucial in second language teaching. Kellerman (1992) proposes the use of video-recorded interactions to observe kinesic behaviour of the people who speak the language students are learning. This helps them to improve listening comprehension skills.

2.3.6. Logical/Mathematical Intelligence

Logical-mathematical intelligence is described as an individual's ability to think of causeand effect connections and to understand relationships among actions, objects or ideas (Sherer, 2006a). Additionally, it reveals a person's capabilities to calculate, to quantify or consider propositions and perform complex mathematical or logical operations. It also involves inductive and deductive reasoning skills as

well as critical and creative problem-solving (Shearer, 1996, 2006a). According to Gardner (1995), logical/mathematical intelligence concerns with the ability to solve problems, to carry out mathematical operations logically and analytically, and to conduct scientific investigations. He further contends that mathematicians, logicians, and scientists have a propensity for this area and would possess high levels of this hypothesized intelligence. Armstrong (1999 posits that logical-mathematical intelligence encompasses one's " ability to reason, sequence, think in terms of cause-and-effect, create hypotheses, look for conceptual regularities or numerical patterns, and have a rational outlook on life" (p. 10). Scientists, accountants, philosophers and computer programmers are deemed to have high logical-mathematical intelligence.

Gardner (1993b, p.20) underscores the nonverbal nature of this intelligence and maintains that "a solution to a problem can be constructed before it is articulated". This means that the process of problem solving may be totally invisible, even for the problem solver himself. Therefore, abstract reasoning, concrete experience, and solving problems are considered as the core operations of logical-mathematical intelligence. As mentioned before, linguistic and logical-mathematical intelligences are given more importance by researchers in most societies. For this reason, along with language skill, this intelligence provides the principal basis for IQ tests and has been heavily investigated by traditional psychologists from psychometric approach tradition since it is considered as the archetype of "raw intelligence" or the problem-solving ability that ostensibly cuts across domains (Gardner, 1993b, p.20).

The empirical data supports logical-mathematical intelligence. Studies on brain functioning have proved localization of some parts of the brain for mathematical calculation. For instance, the ability to read and produce the signs of mathematics is more often a left hemisphere function whereas the understanding of numerical relations and concepts seems to be right hemisphere function .There is also a 'fragile consensus that a certain area of the brain—the left parietal lobes, and the temporal and occipital association areas contiguous to them—may assume a particular importance in matters of logic and math (Gardner, 2011, p.167)'.

Gardner (2011) maintains that language and calculation , or linguistic and logical mathematical intelligences at even the most elementary level have proved to be

quite separate since, considering the organization of numerical abilities in the brain, there are clearly individuals who lose the ability to calculate while remaining linguistically intact, as well as a far larger set of cases of individuals who are aphasic but can still make change, play games requiring calculation, and manage their financial affairs. Moreover, there are 'idiot savants'- individuals with meager or even retarded abilities in most areas- and child prodigies who are able to calculate rapidly and accurately while suffering from deficiency in other areas.

In educational contexts and school environments, learners with logical-mathematical intelligence learn best through working with relationships and patterns, classifying, categorizing and working with the abstract. They are able to categorize information in logical sequences for organization, create graphs or charts to explain written information and participate in Web Quests associated with the content (Bellamy & Baker, 2005; Giles et al., 2003).

As stated earlier, in most societies linguistic and logical-mathematical intelligence are considered superior to other intelligences. In American society, for instance, this claim is supported by the weight SAT scores are given for college admission. Gardner (1993b, p.8) posits that the intelligences "have equal claim to priority". Although SAT scores may get one into a prestigious college, Gardner (1993b) believes that success after one leaves the college depends on one's ability to use the other intelligences properly as well. This implies that intelligences are interdependent and may sometimes overlap within the domains they function. Other internationally administered tests such as GRE also lend support to the priority of these intelligences for test providers.

Campbell et al., (1996, p.35) maintain that logical-mathematical intelligence encapsulates mathematical calculations, logical thinking, problem-solving, deductive and inductive reasoning, and the discernment of patterns and relationships. So, these features of logical/ mathematical intelligence, especially the reasoning strategies, are of high importance in second language learning. In teaching the grammatical structure of the language, some teachers prefer to teach inductively, while others tend to use deductive method of teaching. Therefore, students endowed with logical / mathematical intelligence may greatly benefit from this intelligence in up-taking grammar of the target language. Problem-solving

tasks also require high levels of logical/mathematical intelligence and students with this intelligence may outperform in problem solving tasks than the others.

In learning an L2, logical/mathematical intelligence contributes a lot for successful learning in all skills. For example, it helps learners in jigsaw reading, discovering error in logic, conceptual mapping, writing a missing part of story, writing pros and cons of a specific topic, solving riddles and puzzles which often involve logic. In teaching and learning phonetics, it address the capacity to use heuristic pathways for drawing phonological rules, e.g. the pronunciation of inflectional suffix ‘s’ at the end of nouns as a plural indicator or third person index in English verbs.Language is a rule governed system and its patterns can be discerned and introduced through using mathematical formulas. For example, the general sentence pattern in English, i.e. subject-verb-object (S+V+O), can be better presented using logical/mathematical premises. Other languages may use different patterns, e.g. S+O+V pattern as in Persian. Apparently, students with logical/mathematical intelligence may find it easier to discern language patterns and relationships between constituent elements of sentences such as nouns and verbs as well as noun and verb phrases. Therefore, strategies and activities used for problem solving tasks that address foreign language learners’ logical/mathematical intelligence may yield more useful insights in second language teaching and learning since “through constant rereading of the text to solve the problem, they acquire a familiarity with the vocabulary and structures used” (Morgan and Fonseca Moran, 2004, p.127).

Second or foreign language learners with logical/ mathematical intelligence can sequence described events in chronological order, classify language items easily, or successfully manage to work on problem-solving activities. In teaching reading, for instance, authentic texts developed on a special event, say, a biographical sketch of a famous person can be used for this purpose. The reading comprehension questions can also be designed in a way that students need to fill the information gap activity by following the events introduced in the text in chronological order.

2.3.7. Spatial –Visual Intelligence

According to Gardner (1993b, p.9), spatial intelligence referes to the "ability to form a mental model of a spatial world and the ability to operate using that model". For Gardner, engineers, surgeons, sculptors, painters, and those sailors in the South Seas who navigate without instruments show highly developed spatial intelligence. Zhu (2011,p.408) defines spatial-visual intelligence as "the ability to sense form, space, color, line, and shape including the ability to graphically represent visual or spatial ideas. People with this intelligence like to design, invent, imagine and create". It also concerns with the ability to present spatial world internally in human mind, and

> *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, 2009, p.7).*

Gardner (2011) in the introduction to the second edition of his groundbreaking book entitled Frames of Mind maintains that intelligences cannot be addressed and tested in isolation; rather they are always expressed in the context of specific tasks, domains, and disciplines. Therefore, the intelligences are not pure and 'there is no "pure" spatial intelligence' as well. He further asserts that spatial intelligence can be expressed and observed in "a child's puzzle solutions, route finding, block building, or basketball passing. By the same token, adults do not exhibit their spatial intelligence directly but are more or less proficient chess players or artists or geometricians"(p.xxxiv).

Gardner (2011, p.183) argues that, like other intelligences such as linguistic intelligence, logical–mathematical intelligence, there exist various abilities or capacities within spatial intelligence, and that "central to spatial intelligence are the capacities to perceive the visual world accurately, to perform transformations and modifications upon one's initial perceptions, and to be able to re-create aspects of one's visual experience, even in the absence of relevant physical stimuli". He further argues that these abilities are clearly not identical for all individuals and they may vary from one person to another. He concludes that spatial intelligence "emerges as an amalgam of abilities" and that the different intelligences are

interrelated. Therefore, practice in one of the areas of intelligences stimulates development of skills in related ones.

According to Ahmadian and Jalilian (2012, p.202) spatial intelligence “enables individuals to perceive the visual world, to reconstruct and modify their original observations, and to re-create and restructure different aspects of an early visual experience”. They further state that “sense of sight is known to be the main sensory aspect of spatial intelligence since it provides individuals with the ability to form mental images and pictures in their mind for retaining information”. A word of warning is deemed necessary here. Although it is often hypothesized that spatial intelligence is closely related to and grows most directly out of human beings’ observation of visual world, this doesn’t mean that only people with visual ability possess spatial intelligence and others, e.g. blind people, lack this ability.

It is argued (Laughlin, 1999, Campbell et al., 1996) that early men drew pictures of animals and representations of their experience on their walls before language, as used today, was developed. This concrete example indicates that vision developed before speech. Campbell, et al., (1996, p.97) maintain that spatial-visual intelligence underlies all human activity and that its characteristics cannot be summarized and classified into a list of skills one potentially possesses.

In second language learning, students with spatial intelligence have the potential to decode graphs and learn with graphic representation or through visual media. In teaching speech sounds and pronunciation, graphic representations or phonetic symbols are largely used to represent the abstract speech sounds. It is beyond dispute that most language learners have difficulty in learning, controlling and retention of speech sounds. Put differently, second language learners differ in their perceptions of transcription of words in phonetic classes and often complain that it is a difficult job to handle phonetic transcriptions (Demirezen, 2013).This can be attributed to their low spatial intelligence in dealing with sound-symbol relationships in phonetics and work with graphic representation, indicating that the ability to handle transcription of the phonetic sounds does have a greater role in improving one’s phonetic intelligence (Demirezen, 2013) . In fact, this intelligence has also to do with sign awareness among language learners. They can differentiate and read the words if they have a good knowledge of signs and symbols in the second language. That is, they can convert transcriptions into

words and vice versa. More specifically, in sign language all the communication is carried out through using signs.

Additionally, based on schema theory, it can be said that mental images are also useful for providing comprehensible and meaningful input for second language learners. In processing knowledge, L2 learners use both verbal and non-verbal systems for language items and images' respectively. Thus, a deep and meaningful comprehension is greatly contingent on our imagery system. It has been found that interest in reading and meaningful input is associated with our imagery (Long, Winograd & Bridge, 1989) since our mental images help us to access non-verbal knowledge of the world.

2.3.8. Interpersonal Intelligence

Interpersonal intelligence, also known as social intelligence (Huitt and Dawson, 2011), is defined as the ability to understand and engage in communication with others, and facilitate relationships and group processes (Wilson, 1997). It deals with the perception of other people's feelings, ability to relate to others; interpretation of behaviour and communications, and the ability to perceive and make distinctions in the moods, intentions, motivations, and feelings of other people (Armstrong, 2009). Huitt and Dawson (2011) believe that in all definitions of interpersonal intelligence, even in Gardner's own definitions,

> "*cognitive/thinking, affective/ emotional, and conative/volitional components are considered important because they provide the foundation for the establishment and maintenance of interpersonal relationships. Therefore, any attempt to develop social capacity (i.e., intelligence) into social competence will need to consider these other domains as well" (p.2).*

Gardner (1983, 1993b) argues that interpersonal intelligence, or social intelligence, refers to an individual's outward relations with other individuals. He defines interpersonal intelligence as "the ability to notice and make distinctions among other individuals [italics in origin] and, in particular, among their moods, temperaments, motivations, and intentions" (Gardner, 2011, p.253). He characterizes this ability as the core capacity of the interpersonal intelligence. To provide a clear-cut picture of this capacity, he maintains that

> *Examined in its most elementary form, interpersonal intelligence entails the capacity of the young child to discriminate among the individuals around him and to detect their various moods. In an advanced form, interpersonal knowledge permits a skilled adult to read the intentions and desires—even when these have*

been hidden—of many other individuals and, potentially, to act upon this knowledge—for example, by influencing a group of disparate individuals to behave along desired lines (Gardner, 2011, p.253).

He further argues that highly developed forms of interpersonal intelligence can be seen in political and religious leaders such as Mahatma Gandhi or Lyndon Johnson, in skilled parents and teachers, and also in individuals enrolled in the helping professions, be they therapists, counselors, or shamans.

In light of these, Gardner (2011, p.254) views both interpersonal and intrapersonal intelligences as two distinctive varieties of 'personal intelligence' and states that as different cultures have different symbolic systems and have their own means of interpreting experiences, the raw materials of conceptualizing personal intelligence are largely determined by meaning systems of these cultures that may be quite different from one another. He further argues that, unlike other intelligences such as spatial and bodily/kinesthetic intelligences that can be readily identified and compared across different cultures, various forms of personal intelligence are "much more distinctive, less comparable, perhaps even unknowable to someone from alien society" (Gardner, 2011, p.254).

Sternberg (1990) maintains that interpersonal intelligence concerns with an individual's talent in understanding and working with others and their ability to respond to feelings as well as intentions of others. The reason why Gardner emphasizes the role of interpersonal or social intelligence is the fact that it is this intelligence that provides us the opportunity to form relationships, allows us to get along with others, and helps to notice and understand different moods, temperaments, motivations, and skills in our social interactions. He speaks of teacher Anne Sullivan's relationship with her student Helen Keller who ends up with high developed skills in using language at the end of training. He asserts that, "The key to the miracle of language was Anne Sullivan's insight into the person of Helen Keller" (Gardner, 1993b, p.23). In other words, the key to Sullivan's success was her interpersonal intelligence not the language itself. This implies that interpersonal intelligence is not contingent only upon language.

It is argued that language learning is a social process (Hymes, 1972) and the main objective of learning an L2 is to develop communicative competence in language learners since linguistic competence is not enough to establish relationships with others to understand their perspectives and opinions in order to achieve personal

objectives. Sociocultural theory or social constructivism stresses the importance of interaction of the participants in language learning contexts. That is, social interaction is related to spoken language and is considered central to language learning (Vygotsky, 1978; Dörnyei & Murphy, 2003).

Interpersonal intelligence can be taught and developed by Cooperative language learning. It can greatly contribute to fostering other language skills. For example, using their interpersonal intelligence, learners can investigate into the characters' and authors' motivation in reading a text, role playing, global simulations and rewriting a text from a new point of view, cooperative learning and construction of lexical fields in learning vocabulary, discovering and mapping intonations with certain cultural behaviors in learning phonetics are all directly related to one's interpersonal intelligence. As for speaking skill, learners with interpersonal intelligence are prominent in analyzing characters, retelling stories from a different points of view or discussing different opinions. Through interaction and cooperation learners try to carry out different tasks and these activities lead to the development of verbal negotiation strategies, establish and maintain social relationships, contributing to the understanding of own and others' view points as well.

2.3.9. Intrapersonal Intelligence

Intrapersonal intelligence, the second variety of personal intelligences proposed by Gardner, concerns with self-awareness and personal cognisance, and the ability to act adaptively on the basis of that self-knowledge. Intrapersonal intelligence also "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, 2009, p.7). In other words, intrapersonal intelligence concerns with one's capacity to understand "inner self", or better to say, an individual's "sense of self". Rosnow et al., (1994, p. 94) view intrapersonal intelligence as "cognate faculties" that are called upon when we pay much attention to better understand our inner self.

Gardner(1993b,p.24) views intrapersonal intelligence as "knowledge of the internal aspects of a person: access to one's own feeling life, one's range of emotions, the

capacity to effect discriminations among these emotions and eventually to label them and to draw upon them as a means of understanding and guiding one's own behavior". According to Gardner (2011), the core capacity of intrapersonal intelligence is "access to one's own feeling life—one's range of affects or emotions: the capacity instantly to effect discriminations among these feelings and, eventually, to label them, to enmesh them in symbolic codes, to draw upon them as a means of understanding and guiding one's behavior" (p.253). Therefore, intrapersonal intelligence helps people to show a successful model of themselves. Additionally, some evidence from language, music, or other forms of expressive intelligence is required of anyone who attempts to find out how it works because, as stated earlier, this intelligence is the manifestation of one's inner self and, thus, is considered as the most private of the intelligences in MI theory.

In the same vein, Laughlin (1999) argues that our intrapersonal intelligence helps to understand ourselves and other people and solve our problems. By so doing, we indeed try to identify and examine our inner resources, i.e., our motivation, determination, ethics, integrity, empathy, thoughts, and feelings. She further asserts that Intrapersonal and interpersonal intelligence-the two dimensions of Gardner's personal intelligence- are interdependent since both share common biological and social characteristics and are formed by heredity, environment, and experience, particularly experiences with care givers and, later, teachers.

Shearer (1996) provides the most comprehensive and viable picture of the characteristics of intrapersonal intelligence and describes it as the ability to think about and understand one's self, to raise awareness of one's strengths and weaknesses, and to plan effectively to live up to one's personal goals. It also concerns with an individual's capacity to reflect on and monitor one's thoughts and feelings and regulate them effectively. Intrapersonal intelligence, according to Shearer (2006a), includes the ability to keep an eye on one's self in interpersonal relationships so as to act with personal efficacy.

The same evolutionary and developmental history of interpersonal intelligence has proved to be involved in intrapersonal intelligence. That's why Gardner views these intelligences as the two variations of personal intelligence. The only difference is the fact that interpersonal intelligence helps to understand and work

with others whereas intrapersonal intelligence contributes to an individual's understanding of his inner self.

Second or foreign language (L2) learners can use their intrapersonal intelligence to couple words or phrases in a foreign language with situations, objects, people, and places significant to them. They can also edit and reproduce the text using their own words, involve in writing activities that lead to the production of intrapersonal dialogs in the TL such as silent singing. While reading a text, those with intrapersonal intelligence can relate their own previous knowledge to the text, ask personal, hypothetical and alternative questions about the text. Questions like 'How would you react if you were in such a position?" activate intrapersonal intelligence. However, independent work and doing language tasks alone does not necessarily develop the intra-personal intelligence; rather interest in independent work is simply a method that appeals to introverted language learners. Therefore, learning styles and multiple intelligences should be approached with much caution in L2 learning. Moreover, foreign language learners with predominant intrapersonal experience excel in activities which require self analysis. For instance, writing reflections or journal keeping can effectively cater for this type of intelligence (Spirovska, 2013).

2.3.10. Naturalist Intelligence

Armstrong (2009, p.7) suggested that naturalist intelligence reveals expertise in the recognition and classification of numerous species such as flora and fauna existing in one's environment including sensitivity to other natural phenomena such as cloud formations, mountains, etc., and the capacity to discriminate among inanimate objects such as cars, sneakers, and CD covers. It is also defined as the ability to interact effectively with living creatures andrecognize patterns of life and natural forces (Shearer, 2006a).

In his introduction to the second edition of his book entitled frames of mind Gardner (2011, p.xiv) contends that there is ample evidence for a naturalist intelligence which he defines it as 'the ability to make consequential distinctions among organisms and entities in the natural world' and suggestive evidence as well for a possible existential intelligence which he labels as "the intelligence of big questions'. From these additional intelligences, only naturalistic intelligence meets

the eight criteria for intelligences. Gardner (1999) argues that most people use their naturalist intelligence in different ways through interests and hobbies depending on the norms and values of their own culture. This implies that every culture possesses and values such an ability and that the conceptualization of the construct may nevertheless be different from one culture to another. Some individuals with end state of naturalistic intelligence include “Charles Darwin, Louis Agassiz, and Rachel Carson” (Tekiner, 2005, p.37).

Brain-based studies and developments in neurological science have proved that there is also a neurological basis for the development of naturalist intelligence in humans. In order to buttress neurological evidence, Gardner (1993b) maintains that some gifted people are able to recognize naturalistic patterns iirespective of brain damages in certain regions, while there are still others who are unable to act effectively in similar situations. Given the fact that there is a relation between intelligences which Gardner construes as ‘biopsychological potentials’, naturalist intelligence is also related to other intelligences, especially linguistic intelligence. This implies that as naturalist intelligence has also a symbolic system, it is largely dependent on linguistic and taxonomic systems for classifying of plants and animals.

2.4. Multiple Intelligences and Second Language Acquisition

As mentioned earlier, traditional definition of intelligence gave no credence to individual differences, different abilities and capacities in handling tasks. In IQ tradition, intelligence equals IQ and, therefore, it has nothing to do with one’s L2 success and acievement. Proponents of IQ approach claimed that individuals with a high developed IQs make successful L2 learners. The tale of describing the advent of the IQ test, and the various criticisms levelled against it by many researchers has been retold so many times, even in this research study, that I am relieved of the necessity to start it here once again. What is emphasized here is the fact that most of the approaches within IQ framework focused on the development of logical-mathematical intelligence and linguistic intelligence. Even Piagetian and information processing approaches along with the IQ approach focus on a certain kind of logical or linguistic problem solving. They ignore biology, all fail to account for the higher levels of creativity and are insensitive to the range of roles highlighted in human society (Gardner 2011).

Gardner's (1983) introduction of multiple intelligences theory not only changed the prevailing approaches towards education in all areas, but also contributed a lot to the development of approaches and theories that proved to be crucial to L2 success. Basing his controversial, and yet influential, theory on the views of instructional philosophies of early decades of twentieth century which focused on the individual differences among learners, Gardner revolutionized the very practice of teaching and learning in all fields including second language learning. He argued that not all students have capacity to excel at linguistic and logical-mathematical intelligence. He suggested that by a broader vision of education, we can better serve our kids, and teachers can opt for various methodologies, teaching materials and activities which address all students with different potential background.

It is worth mentioning that Gardner, in proposing his MI theory, did not primarily intend to introduce a new approach to teaching. However, his theory seemed so appealing that it rapidly became one of the most widely used approaches in educational centers. Although many psychologists like Klein (1997), and Scarr (1985) did not readily accept MI model, many educationalists are now supporting the practical value of MI theory. The MI theory was embraced enthusiastically by teachers because it provides education with rationale for doing our best to try to teach our kids in a best possible way. Kagan and Kagan (1998, p.xxi) write " the more diverse learning experiences we provide our students, the more robust their education will be, the more they will learn each topic, hence the more they are prepared to succeed in a world marked by increasing diversity and accelerating change rate".

The MI theory proposed that human beings potentially posses several somewhat independent mental capacities, or 'human intelligences' in Gardner's terms, which often work in concert in handling complex tasks. Therefore, MI is a learner-based approach which is mainly based on Gardner's research on brain-based studies, developmental, cognitive and neural psychology as well as Vygotskian sociocultural theory. However, the application of the theory of multiple intelligences in education, especially foreign language learning, varies widely throughout the world. As Maftoon and Najafi (2012) rightly observe, the MI theory "runs the gamut from a teacher who, when confronted with a student having difficulties, uses a

different approach to teach the material, to an entire school using MI as a framework" (p.1238).

As a learner-based approach, MI has been greatly influenced by humanistic approach to learning an L2 and, in fact, it was the humanistic approach, as far as the researcher believes, that presumably gave Gardner the necessary impetus to introduce his theory of multiple intelligences since these two approaches have many things in common. With the advent of humanism in 1960s and its overwhelming effect on education, the conventional and authoritative teacher-centered instruction gave way to the learner-centered mode of instruction, and individual differences and affective factors such as feelings, emotions, anxiety, frustration, motivation, and confidence (Maftoon & Najafi, 2012) which were denied by the dominant approach at the time-the behavioral approach- on the process of learning were again given much weight in learning process (Lin, 2000; Maftoon & Najafi, 2012).

The scrutiny of methods and technics developed within humanistic approach to second language learning as well as other approaches during 1970s up to the end of 20th century indicates that they can be linked to Gardner's MI theory. For example, the Silent Way is linked with intrapersonal intelligence since both emphasize the development of students' inner thinking while James Asher's Total Physical Response method correlates with Gardner's bodily/kinesthetic intelligence as both of them emphasize language learning through physical action. Lozanov's Suggestopedia is closely linked to musical intelligence since music, especially the Baroque music, facilitates learning, unlocks learners' inner thinking, and enhances one's understanding of inner self. The Communicative Approach, Cooperative Learning and Community Language Learning highlight the significance of spoken language and establishing interpersonal relationship in L2 achievement. In the same vein, the cultivation of linguistic intelligence is largely emphasized by Whole Language learning and Lexical Approach (Lewis, 1993). Most of the methods and approaches developed in the past 30 years, e.g., Task-based Language Learning, are also linked to MI theory inasmuch as they require different set of skills and intelligences to accomplish L2 learning tasks and overall success in language and academic achievement.

2.5. Multiple Intelligences Research in SLA

Gardner (1993a) argues that intelligences cannot be fully assessed by employing psychometric measures used by proponents of IQ tests. He suggested that intelligences should be measured with the intelligence specific materials.To date, most of the research conducted to assess multiple intelligences are mostly self-report instruments (see Armstrong, 2009; Silver, Strong and Perini, 2000; Shearer,1996, 2006a; Teele, 2000).

Gardner has always warned against the application of MI theory in teaching and he has never proposed an MI model of second or foreign language teaching. However, researchers in the field of SLA, e.g. Christison and Kennedy (1999), administered MI theory to L2 teaching and learning programs with more promising results. Kornhaber (2004) also stuied the application of MI theory in L2 pedagogy and reported improvement in curriculum, assessment, school structure, and pedagogy. Haley (2004) conducted a quasi-experimental research to investigate the relationship between MI and instructional strategies, curriculum development, and assessment of K_12 students (N=650), and ESL and EFL teachers in six different countries. The results revealed that experimental groups outperformed control groups while developing a high degree of satisfaction and positive attitude toward the content.

Loori (2005) examined the multiple intelligences profiles of ESL students (*N*=90) in the United States. The results revealed there were significant differences between male and female students in relation to their MI profiles. The highest scores for logical-mathematical intelligence were observed in males whereas the females had higher scores in intrapersonal intelligence. Moreover, interpersonal, logical-mathematical, and linguistic intelligences were found to the dominant intelligences were found to be. Further studies conducted to investigate the role of MI theory in second language learning, teacher education and academic achievement will be introduced in chapter4.

2.6. Critiques of Multiple Intelligences Theory

There has been a growing body of criticism levelled against the MI theory since its advent by Gardner in 1983. The theory was questioned not only by psychologists and psychometricians, but also by some educationalists who applied the theory in

their teaching. Perhaps one of the critics who severely attacked the MI theory was Klein (1997). He mainly questioned the criteria proposed by Gardner for a capacity or an ability to be considered intelligence and criticized his intelligences for being too broad and undifferentiated a concept without taking subintelligences into account. Gardner (1993a) puts forth that an intelligence must be supported by psychometric research. Klein (1997) argued that MI theory is not supported by psychometric findings; rather, they support the existence of a general or 'g' factor (Tekiner, 2005).

Klein (1997) also questioned the core operations of intelligences and MI claim that intelligences work together saying that the intelligences cannot be both independent and interactive in many human activities. Gardner (1993a) posits that complex tasks such as dancing need a number of skills or intelligences. Klein (1997) argues that MI theory is circular because being "a good dancer" subsumes "high bodily kinesthetic intelligence." Thus, MI theory has been criticized for being fundamentally ambiguous because of the paradoxical assertions in it.

Klein (1998) argues that ambiguous provisions of MI theory makes it difficult, perhaps impossible, to either prove or deny the theory. He asserts that the MI theory, in Popperian terms, is unfalsifiable. Gardner (1998), in reply to Klein's (1997) criticisms, argues that like many critics, Klein fails to distinguish between intelligences and domains. Being a biopsychological potential of human beings, intelligence is subserved by specific neurological structures. An intelligence, thus, will not develop unless there is a proper stimulation from the cultural context. However, the notion of "domain" is a cultural concept. There exist many disciplines and activities in every culture in which at least some members attain expertise. Consequently, Gardner (1998, p.2) concludes that "any intelligence (like spatial intelligence) can be drawn on in many domains (ranging from chess to sailing to sculpture); and, in turn, any domain can involve one or more intelligences (for example, chess presumably draws on spatial, logical, personal, and perhaps other intelligences as well)". Moreover, he asserts that MI never claims that intelligences are completely independent. Rather, they are relatively independent from one another, and strength in one intelligence does not predict strength or weakness in other intelligences (Gardner,1998, p.2).

Similar to Klein, Scarr (1985) criticized MI claim that the intelligences are autonomous and work in isolation while research has proved positive correlation among intelligences. Gardner (2003) asserts that as intelligences have biopsychological and neurological basis, “only careful clinical or experimental investigation can help to specify which intelligences are in fact being used by a particular individual in a particular situation” (p. 48).

Sternberg (1985) argues that MI model is better to be called a theory of talents not intelligences, and that Gardner does not explain the definition of the word “intelligence”; rather, he denies the existence of intelligence as traditionally understood, the ‘g’ factor, and instead uses the word “intelligence” to refer to traditionally used words like “ability” (Brody, 2010). Sternberg (2004) pointed out that the MI theory needs to be empirically supported and that Gardner’s literature review needs to be reorganized since it is selective and does not support his theory. He also suggested that it is better to label some of the intelligences talents rather than intelligences, and that psychometrically strong assessments of intelligences are needed to validate the MI theory. Other researchers also chriticized MI theory for not explicating the heuristics that people use in real life (Raab & Gigenrenzer, 2005), disregarding the discourse function of language (Kincheloe, 2004; Nolan, 2004) and the emphasis on the existence of prodigies and savants as a support for inclusion of an intelligence into MI theory (Nettebeck & Young,1996).

It is worth mentioning here that although Gardner is not ‘champion’ of psychometric research and standardized tests, he grants the use of these tests emphasizing that they must be employed in contextualized form since decontextualized tests are not intelligence fair. MI theory agrees that the ‘g’ factor exists, but disputes that ‘g’ is superior to other forms of human cognition. Indeed, in MI theory, ‘g’ has its place (primarily in logical-mathematical intelligence) as an equal alongside of the other seven intelligences (Armstrong, 2009).

The MI theory has also been criticized for not being ‘research based’. That is, MI empirically lacks practical applications in schools. For example, Collins (1998, p.95) argues that “evidence for the specifics of Gardner’s theory is weak, and there is no firm research showing that its practical applications have been effective”. In replying to this criticism, Armstrong (2009) observes that the

American Educational Research Association has organized a special interest group (MI-SIG) dedicated to multiple intelligences research since 1999. It has an online data base which hosts an online database of over 200 doctoral dissertation abstracts concerned with multiple intelligences available at:http://209.216.233 .245/aerami/dissertation.php (Armstrong, 2009). Some critics of MI theory (Willingham, 2004; Collins; 1998) argue that MI "dumbs down the curriculum to make all students mistakenly believe they are smart" (Armstrong, 2009, p.195). They accuse some MI practitioners of using superficial applications of MI theory and employ strategies which even Gardner himself would not approve.

To sum up, it should be noted here that multiple intelligence theory was not originally designed by Howard Gardner as an educational model to be applied in the classroom. Rather, he initially wanted to convince academic psychometricians that there was an alternative and broader way of conceiving intelligence. Unfortunately, it seems that he was not successful in this mission. Conversely, MI theory attracted many teachers who responded enthusiastically to this model because it met their needs which were not filled by an educational establishment too concerned with standardized measures (Armstrong, 2009).

Despite many criticisms levelled against the conceptual and empirical bases of MI theory, Gardner (1998) asserts that multiple intelligences theory is "a far richer, more flexible, and more useful set of ideas than" ideas proposed by its critics. Gardner (2004) notes that nothing substantial has emerged in the past 25 years to seriously challenge MI theory. Gardner maintains that

> *On the conceptual level, MI theory insists not on domination by a single middle-level construct, but rather on a place for that construct in between the overarching notion of a general intelligence and an endless list of specific skills and subskills. On the empirical level, it provides a far better explanation for many groups and behaviours than does either the general or the local perspective. Finally, despite inevitable caricatures, the theory lays the groundwork for an education that can reach more students and do so in a way that deepens their understanding (Gardner,1998, p.8).*

2.7. Emotional Intelligence

The introduction of Multiple Intelligence Theory (MIT) by Gardner (1983) and the concepts of intrapersonal and interpersonal intelligences which encompass one's perception of his/her own emotions and understanding other peoples' emotions respectively, gave rise to the emergence of emotional intelligence later on. Salovey and Mayer introduced the emotional intelligence(EI) theory in1990. They

defined EI as ‘‘the subset of social intelligence that involves the ability to monitor one’s own and others’ feelings, to discriminate among them, and to use this information to guide one’s thinking and action” (p.189). Salovey and Mayer (2005,p.282) argue that emotional intelligence lies at the intersection of emotions and intelligence. Therefore, the EI theory is in part based on Gardener’s personal intelligences (intrapersonal and interpersonal). However, it primarily focuses on the affective aspects of these two intelligences.

A few years later, they revised the definition of emotional intelligence and classified it into four proposed abilities, also characterized as the four branches or dimensions of emotional intelligence, that are distinct yet related. They include “perceiving”, “using”, “understanding”, and “managing emotions” (Mayer & Salovey, 1997). The first dimension of emotional intelligence, the perceiving emotions (PE), deals with the ability to identify and recognize emotions in faces, pictures, voices, and cultural artefacts. It also refers to the ability to identify one’s own emotions (Salovey and Mayer,2005). According to Salovey and Grewal (2005, p.281), the second dimension of emotional intelligence, using emotions (UE), concerns with “ the ability to harness emotions to facilitate various cognitive activities, such as thinking and problem solving”. They believe that an individual’s varying moods of behavior may affect his/her way of thinking and conduct.

The third dimension of emotional intelligence, i.e., understanding emotions, concerns one’s ability to “comprehend emotion language and to appreciate complicated relationships among emotions” (Salovey & Grewal, 2005). They argue that emotionally intelligent people with ‘understanding emotions’ ability are sensitive to slight variations between emotions, such as the difference between happy and ecstatic and possess the ability to recognize and describe how emotions evolve over time, such as how shock can turn into grief. The fourth dimension of emotional intelligence, managing emotions, concerns with the ability to monitor, adjust, and control emotions in both ourselves and in others (Akbari and Tavassoli, 2011). Everyone has the experience of losing control of their emotions temporarily, and sometimes embarrassingly. Managing emotions also deals with the ability to manage the emotions of others. Most emotionally intelligent politicians often use this ability to deliver a powerful speech in order to arouse people’s feelings.

Drawing upon the first conceptualization of emotional intelligence construct by Salovey and Mayer (1990), Schutte et al. (1998) defined emotional intelligence as a construct that considers the experience and expression of emotions as a manifestation of intelligence. They also proposed a four dimensional model of emotional intelligence which was more or less akin to the model proposed by Salovey and Mayer (1990). Their model comprises four subcomponents which include perception of emotions, managing one's own emotions, managing others' emotions and utilization of emotions.

Goleman (1995) proposed a rather influential model of Emotional Intelligence (EI). The new EI model viewed intelligence as both cognitive and emotional. The EI model was also multifaceted with several subcomponents which include "self-awareness", "self-regulation", "motivation", "empathy" and "social skills". The core of EI model is that the response to any stimulus is primarily determined by the emotional mind (Selçuk et al., 2002). Goleman (1995) posits that emotional intelligence comprises various abilities including "getting along with others, self-motivation, persistence, controlling impulses, empathizing, and regulating one's moods" (p.49).

A more influential model of emotional intelligence was put forward by Bar-On (1997a, 1997b, 2000). Bar-On (2006, p.14) argues that "emotional-social intelligence is a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands". This model provides theoretical bases of Emotional Quotient inventory (EQ-i) used for measuring the EI construct and its conceptualization. Bar-On's model comprises five subcomponents of "Intrapersonal", "Interpersonal", "Adaptability", "Stress Management", and "General Mood" (Bar-on, 2006).

A distinction is often made between trait EI or 'emotional self-efficacy' and ability EI or 'cognitive-emotional ability' (Petrides and Furnham, 2000a, 2000b, 2001). Petrides (2004, p.278) argues that trait EI is concerns with a "constellation of behavioral dispositions and self-perceptions concerning one's ability to recognize, process, and utilize emotion-laden information". It comprises various temperaments such as personality domain, e.g. empathy, impulsivity, and assertiveness as well as elements of social and personal intelligences. However,

the ability EI is concerned with an individual's "actual ability to recognize, process, and utilize emotion-laden information" (Petrides, 2004, p.278).

Papadogiannis et al. (2009, p.43), suggested two main theoretical approaches to assessing emotional intelligence. First, *the mixed model approach*which generally comprises self-report instruments that measure a combination of cognitive, personality and affective attributes. Examples of instruments are used in this framework include the Emotional Quotient Inventory (EQ-i; Bar-On, 1997), the Schutte et al.'s Self-Report Emotional Intelligence Test (Schutte et al., 1998, otherwise known as Schutte et al.'s Emotional Intelligence Scale (SEIS), and the Emotional Competence Inventory (ECI: Sala, 2002). The ability model approach,pertains primarily to the realm of cognitiveability, views EI as a traditional intelligence and comprises a set of skills (Roberts et al., 2001) that combines emotions with cognition (Mayer, Salovey, & Caruso, 2008).The Mayer, Salovey, and Caruso (2002) Emotional Intelligence Test (MSCEIT) is the pre-eminent ability measure of emotional intelligence.

Emotional intelligence, as a developing concept, is considered crucial in the field of education particularly language learning since it helps teachers to establish emotional relationships with their students. This might serve as an essential factor to reduce affective barriers or filters (Krashen, 1981) that may moderate on foreign language learning since foreignlanguage teaching is largely contingent on not only knowledge and skills but also on the emotional practices of the teachers. Hargreaves (2001, p.1057) argues that, "Teachers can enthuse their students or bore them, be approachable or standoffish with parents, trust their colleagues or be suspicious of them. All teaching is, therefore, inextricably emotional – by designor default'. Basically, emotional intelligence is closely linked with job satisfaction. In fact, teachers' positive emotions such as love and affection, joy, satisfaction and pleasure can greatly contribute to their self-efficacy in their teaching career, while their negative emotions such as frustration, anxiety, helplessness might lead to depersonalisation, failure in personal accomplishment, emotional exhaustion and perhaps job burnout (Khezerlou, 2012; Maslach and Jackson, 1981; Maslach et al., 1996; Maslach and Leiter, 1997; Maslach et al. 2001) characterized as, "a work-related syndrome that stems from an individual's

perception of a significant discrepancy between effort (input) and reward (output)" (Farber, 1991, p. 24).

Koçoğlu (2011,p.473) observes that "teachers' emotions not only affect their teaching, but also influence the way they think and develop efficacy beliefs about teaching" and "The way in which emotionsare understood, reflected, and managed may hold promise in effective teaching". She further states that teachers with high emotional competencies are more likely to develop a positive rapport with their students, improving their learning and achievement. According to Rode et al.,(2007), students' academic achievement is influenced by emotional intelligence since academic achievement is "self-directed" and requires much more self-awareness and self-management. Therefore, it can be concluded that the higher the Emotional intelligence, the more the academic achievement.

Recent research into SLA (Petrides et al., 2004; Rastegar & Karami, 2013) has shown the role of emotional intelligence in academic achievement. Petrides et al., (2004) examined the relationship between trait emotional intelligence, academic performance and cognitive ability. The findings showed that emotional intelligence influenced the relationship between academic performance and cognitive ability. Additionally, Parker et al (2004) showed that emotional intelligence has the potential to predict academic success. They also found that high achievers had higher scores than the less successful group in emotional intelligence, indicating that successful learning correlates with higher levels of emotional intelligence.

It is also argued that there is a linkage between emotional intelligence and teachers' teaching style (Akbari &Tavassoli, 2011), and their sense of efficacy or self-efficacy beliefs (Bandura, 1997; Chan 2004, 2008; Moafian and Ghanizadeh, 2009; Penrose, Perry, & Ball, 2007; Tschannen-Moran &Hoy 2001; Vesely, Saklofske, & Leschied, 2013). Bandura (1997) asserts that emotional intelligence and teachers' self-efficacy beliefs exert great influence on their teaching competence and effectiveness. Koçoğlu (2011) investigated the possible relationship between Turkish EFL pre-service teachers' (N=90) sense of efficacy and their emotional intelligence capacity. The results revealed that there was a significant positive relationship between EQ and Turkish EFL pre-service teachers' efficacy beliefs, indicating that pre-service teacher emotional intelligence andefficacy are critical in the process of teaching. The results also revealed that

pre-service teachers with high efficacy beliefs and high EQ capacities are more likely to engage in a wide range of moreproductive teaching strategies than those with low efficacy and lowEQ. Therefore, teachers' awareness of their emotional intelligence and their sense of efficacy may serve as potential for teachers to opt for strategies and teaching styles that "motivate students, support them, and engage them in learning activities with a positive relationship in a constructive learning environment" (Koçoğlu, 2011, p.481).

Research into SLA (Abdolmanafi Rokni, Hamidi & Gorgani,2014; Dewaele, Petrides, &Furnham, 2008; Ghannadi &Ketabi, 2014; Imai, 2010; Koçoğlu, 2011; López, 2011; Moafian and Ghanizadeh,2009; Mohammadi,2012; Mohammadi& Mousalou,2012; Motallebzadeh,2009; Petrides et al., 2004; Pishghadam,2009; Pishghadam &Tabataba'ian, 2011; Pishghadam, Adamson, & Shayesteh, 2013; Sucaromana, 2012; Tabatabaei & Jamshidifar, 2013) has also confirmed the relationship between emotional intelligence and teaching and learning an L2. Alavinia, Bonyadi and Razavi (2012), for instance, investigated the possible correlation between teachers' emotional intelligence and EFL learners' motivation among Iranian EFL learners (*N*= 240) and teachers (*N*=26). The findings revealed that the EFL teachers' emotional intelligence and its components significantly correlated with EFL learners' motivation and the proficiency level of teachers was found to contribute a lot regarding the relationship between the teachers' emotional intelligence and learners' motivation.

In the same vein, Alavinia and Ahmadzadeh (2012) explored the possible relationship between EI and burnout among EFL teachers (*N*=75) in an Iranian context. Their findings reported a positive correlation between age and teaching experience and EI, and a negative correlation with teacher burnout. This indicates that teachers' burnout levels are likely to decrease over time and that " more experienced teachers were less vulnerable to burnout than less experienced ones" (Alavinia, Bonyadi & Razavi, 2012, p.44). Moreover, the gender factor was found to significantly moderate the burnout levels among teachers', but no significant differences were found between gender and EI levels.

Ahangari and Taghizadeh (2012) conducted a study to assess the relationships between Iranian EFL learners' (*N*=152) EI skills and their anxiety level. The quantitative findings reported a significant correlation between foreign language

learning anxiety and overall emotional intelligence. Furthermore, the results showed significant negative correlations among all sub skills of EI, except between interpersonal relationships and anxiety. Gender differences were found to be significant only in subscales of “stress-management”, “self-actualization” and “stress – tolerance”.

These findings suggest that higher levels of these abilities help a person to understand and regulate his emotions in decision making and learning a L2 which eventually influence his/her academic achievement. As emotional intelligence or Emotional Quotient (EQ) is linked with personality and social psychology (Aki, 2006), it may serve as an influential factor in improving language learners’ problem solving skills, self-awareness, self-esteem, self-actualization, self-regulation, and self-confidence. In this way, emotional intelligence can promote motivation toward learning an L2 and enhance academic achievement. This is due to the fact that intelligences can be enhanced through education and experience, and that the enhanced emotional intelligence will have positive impact on academic performance.

2.8. Learning Styles

Review of the literature reflects that researchers in the field of SLA have drawn up on many resources to cope with individual differences among L2 learners. Among these sources, Jungian personality and learning styles, and Howard Gardener’s theory of multiple intelligences and emotional intelligence have been the most influential models. The multiple intelligence theory, it’s description of human intelligences and it’s relation to education and second language learning as well as emotional intelligence was discussed in details in the preceding section. The following part deals thoroughly with the role of learning styles in differentiating individual differences and consequently its contributions to human learning, especially second language learning

2.8.1. Conceptual Development of Learning Styles

The conceptual development of learning style construct originated from individual differences (ID) in processing and has been addressed and defined in a variety of ways in the literature. However, no one definition fully captures the core of the concept. According yo Dunn and Dunn (1993), learning style refers to “the way in

which each person begins to concentrate on, process, internalize, and remember new and difficult academic content" (Denig, 2004, p.101). Their model consists of 21 unique elements, but in practice, most students are actually influenced by 6 to 14 elements (Denig, 2004).They classified those elements into five categories: environmental, emotional, sociological, physiological, and psychological variables which serve as five stimuli for the proposed 21 elements or subcomponents. Dunn and Dunn (1993) asserted that people are not necessarily considered as intelligent due to their potential, talent, or innate ability. Conversely, they can show their intelligence, they assert, by the way through which they perceive, appreciate, and "adapt to new situations, learn from experience, seize the essential factors of a complex matter, demonstrate mastery over complexity, solve problems, critically analyze, and make productive decisions" (Denig, 2004, p.101).

Leaning style also refers to "a preferred way of thinking, processing, and understanding information. It refers to a person's characteristic style of acquiring and using information in learning and solving problems" (Akkoyunlu & Soylu, 2008, p.184). Dunn (1999) argues that learning style is largely biological and that only a small part of it is developmental. Felder and Spurlin (1995) define learning styles as "characteristic strengths and preferences in the ways they take in and process information" (p.1). According to Felder et al. (2002), different academic strengths, weaknesses, skills, and interests are reflected by learning styles. They observe that "Understanding learning style differences is thus an important step in designing balanced instruction that is effective for all students" (Felder et al. , 2002, p.3).

According to Keefe (1979, p.4; 1982), learning styles are "cognitive, affective, and psychological traits that are relatively stable indicators of how learners perceive, interact with, and respond to the learning environment". Learning style is also defined as "a general predisposition, voluntary or not, towards processing information in a particular way" (Skehan, 1991, p. 288). Liu and Ginther (1999) describe learning styles as "the individual's consistent and characteristic predispositions of perceiving, remembering, organizing, processing, thinking and problem solving" (p.2). Sternberg (1994) rejects the idea of style as an ability or talent and maintains that a style shouldn't be viewed as a kind of abilitysince it mainly denotes a way of using one's ability or set of abilities to perform tasks.

Reid (1995, p. Viii) considered styles as a natural and habitual tendency to grasp and process information and defined learning style as “an individual’s natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills”. Similarly, Sadler-Smith and Smith (2004) argue that cognitive styles reflect an individual learner’s habitual information processing modes. These modes indicate the way an individual thinks about the information he/she receives (Lewis, 2008).

Sadler-Smith (2001, p.610) distinguished between cognitive styles and learning styles. She maintains that “there is a need to delineate cognitive styles and learning styles as separate constructs” because “cognitive style and learning style are independent” (Sadler-Smith, 2001, p. 615). She suggests that future research should treat learning styles and cognitive styles as separate constructs. However, the current research still tends to use the learning styles and cognitive styles interchangeably because “technically, learning style is an umbrella term encompassing three distinct styles or substyles: cognitive, affective and physiological” (Irvine and York, 1995,p. 484).

Saracho (2000) argues that learning styles are inherently entwined with personality. Extraversion and its counterpart introversion, sensing and intuition, thinking and feeling, and judging and perceiving are personality based learning styles (Brown, 1994, 2007). However, the existence of empirical evidence and conceptualization of the term led Zhang and Sternberg (2005) to contend that most styles are value-laden (or at least value-differentiated) rather than value-free; that they have both trait-like and state-like aspects, but for the most part are modifiable and hence more state-like; and that they overlap highly across theories (Zhang et al., 2012, p.13).

Sternberg and Grigorenko (1997, 2001) categorize styles into three approaches, namely “cognition-centered styles”, “personality centered styles”, and “activity centered styles”. “The cognition-centered approach views learning styles as resembling abilities, the personality-centered approach views styles as resembling personality traits or types, and the activity-centered approach treats styles as “mediators of activities that arise from cognition and personality”, and is thus more closely associated with learning strategies (Chan, 2012,p.377).

Styles in the cognition-centered framework function at the intersection of cognition and personality. They most closely resemble abilities and are measured by tests of maximal performance with “right” and “wrong” answers. Witkin’s (1962) field-dependent/independent style and Kagan’s (1966) reflectivity/ impulsivity style fall within this tradition. The personality-centered approach places emphasis on conceptualization and measurement of personality and views styles as resembling personality traits. Similar to personality traits, i.e.Jung’s (1923, 1927) personality styles, styles in this approach are measured by tests of typical (e.g., Mayer-Briggs Type Indicator model), not maximal performance.

The activity-centered tradition considers styles as mediators of activities that arise from both cognition and personality (Zhang et al., 2012, p.12). It focuses mainly on learning and teaching styles such as Kolb’s and Dunn and Dunn’s learning styles. Zhang et al., (2012), Zhang and Sternberg (2006) assert that styles are not dichotomous and that all of us possess each style. The difference is only the matter of degree. They believe that styles are neither abilities nor personality although some styles are more related to abilities and others more to personality.

It is argued that learning styles mediate between emotion and cognition. That is, styles reflect an individual’s personality or mood. Reflective style, for example, invariably grows out of a reflective personality or a reflective mood while impulsive style usually arises out of an impulsive emotional state (Brown, 2007). Therefore, the way people internalize their total environment plays a crucial role in determining their learning styles. Brown (2007, p.120) argues that as the “internalization process is not strictly cognitive, we find that physical, affective, and cognitive domains merge in learning styles”. Styles are also flexible traits and may change depending on the differing contexts they function. Therefore, it is possible for an individual to use a different style in a new context contrary to his/her dominant style.

2.8.2. Theoretical Development of Learning Styles

According to Silver et al., (1997, p.1) the development of learning style theory dates back to the psychological theories of Carl Jung (1927), who pointed out that there are major differences in the way people perceived (sensation versus intuition), the way they made decisions (logical thinking versus imaginative

feelings), and how active or reflective they were while interacting (extroversion versus introversion). A few decades later, inspired by Jungian paradigm, Isabel Myers and Katherine Briggs (1977) created the Myers-Briggs Type Indicator (MBTI) and applied Jung's work in dealing with individual differences in learning processes. Their model influenced researchers who tried to find out specific human learning differences in the years followed.

To shed more light on the concept of learning styles, researchers have tried tocharacterize and deal with learning styles and measure it from different perspectives. In a review of learning styles, Denig (2004, p.100) reports that Keefe measures learning styles in terms of cognitive skills and instructional preferences; Pintrich Smith and others emphasize the role of value components, expectancy components, affective components, cognitive strategies, and resource management in forming the construct of learning style; Schmeck and others measure learning styles in terms of academic self-concept, reflective processing, agentic processing, and methodical study while Weinstein and colleagues focus on different dimensions and combine 10 dimensions to measure earning styles: anxiety, attitude, concentration, information processing, scheduling, selective main ideas, self-testing, study aids, and test strategies (see also Snow, Corno, & Jackson, 1994).

There have been many learning styles identified by the educators and psychologists since the early research by David Ausubel on general learning. Researchers from second language acquisition field (Cohen, 1998; Ehrman, 1996; Oxford & Anderson, 1995; Reid, 1995; Ehrman & Leaver, 2003) have also tried to identify and differentiate those styles that are related to ESL/EFL learning contexts. Traditionally, most of these styles have been introduced in dichotomous manner. However, recent researchers (Zhang & Sternberg, 2006; Zhang et al., 2012) reject the dichotomous nature of learning styles. Brown (2007) listed some of the learning styles which are closely related to second language acquisition:

1. Field independence-dependence
2. Random (non-linear) vs. sequential (linear)
3. Global vs. particular
4. Inductive vs. deductive
5. Synthetic vs. analytic

6. Analogue vs. digital
7. Concrete vs. abstract
8. Leveling vs. Sharpening
9. Impulsive vs. Reflective
10. Left- and right-brain
11. Ambiguity tolerance
12. Visual /auditory/ kinesthetic (see Brown, 2007, p. 120-121).

Additionally, Gezmiş and Sariçoban (2006) speak of at least 22 different learning styles that could be useful for second or foreign language teaching. This highlights the dicrepancy exisiting among researchers regarding the conceptualization of the term 'learning style'.

2.8.3. Models of Learning Styles

Identifying and understanding the learning styles of learners is extremely difficult job to handle. There are various models available to cope with the individual learning differences and learning styles concept. According to Felder & Silverman (1988), "A learning style model classifies students according to where they fit on a number of scales pertaining to the ways they receive and process information" (p. 3). Careful scrutiny of the of the prevailing models developed on learning styles, despite differences in their theoretical background, indicates that most learners often prefer to learn in two distinct categories of learning styles: *perception* and *process* each of which represents two different types of learners. According to Funderstanding (cited in Gilbert and Swanier, 2008), these learner types include

1. *Concrete and abstract perceivers—Concrete perceivers absorb information through direct experience, by doing, acting, sensing, and feeling. Abstract perceivers, however, take in information through analysis, observation, and thinking.*
2. *Active and reflective processors—Active processors make sense of an experience by immediately using the new information. Reflective processors make sense of an experience by reflecting on and thinking about it. (Gilbert and Swanier, 2008, p.31)*

2.8.3.1. Myers-Briggs Type Indicator Model

Denig (2004) pointed out that the Myers-Briggs Type Indicator model is a personality assessment model designed to identify certain psychological

differences according to the typological theories of Carl Jung in education, counseling, and business. According to Melear (1989, p.32), the core of Jungian theory is that “there is consistency and order in seemingly random variations in behavior when one considers the different ways in which people prefer to take in information (perception) and the ways in which they choose to make decisions (judging function)”. Jung (1923,1927) states that people can perceive the world in two distinct ways (sensing or intuition) and that people use two distinct and contrasting ways to reach conclusions (thinking or feeling). Jung also describes that through judging or perceiving people can interact with the world and spell out their attitudes and direct their energy as either being inward (introversion) or outward (extraversion).

Myers and Briggs developed an instrument which measures a person’s learning preferences within Jungian theory. Their model consists of four dimensions: Extraversion vs. Introversion (E-I), sensing vs. Intuition (S-N), Thinking vs. Feeling, (T-F) and Judging vs. perceiving (J-P) (Melear,1989, p.32). These four dimensions combine and create a total of 16 possible learning preferences or personality types.

2.8.3.2. Honey and Mumford Learning Style Model

Peter Honey and Alan Mumford adapted Kolb’s (1984) learning style model and produced their own model, Learning Styles Questionnaire (LSQ), in 1992 for use with a population of middle/senior managers in business. They renamed the stages in the learning cycle to accord with managerial experiences of decision making/problem solving. Their model contains four stages:

1. Having an experience
2. Reviewing the experience
3. Concluding from the experience
4. Planning the next steps

Unlike Kolb’s model in which styles result from the combination of two stages, Honey and Munford directly aligned the styles to the four stages in the cycle and named them Activist, Reflector, Theorist and Pragmatist . They argued that these styles are not fixed personality; rather, they are assumed to be acquired

preferences that are flexible and adaptable according to varying contexts and circumstances. According to this model, people prefer to use different methods of learning in different contexts based on their experience level. Therefore, according to Hamada et al.,(2011, p.50), rather than being locked into one mode of learning, learners move around the learning cycle through each of these four stages as many times as needed until the learning has been successfully accomplished. During the learning process, learners will presumably use one stage more than the other.

2.8.3.3. Visual, Auditory and Kinesthetic (VAK) Learning Style Model

Fleming's (2001) Visual- Auditory -Kinesthetic (VAK) model which is also known as Visual- Auditory –Kinesthetic/Tactile (VAKT) model and Visual- Auditory Read/write & Kinesthetic (VARK) is one of the learning style models that is widely used in the literature. The VAK model places emphasis not on mathematical content, but on the sensory receivers that are used to process new information. For Fleming (2001) learning style is "an individual's characteristics and preferred ways of gathering, organizing, and thinking about information. VARK is in the category of instructional preferences because it deals with perceptual modes" (p.1). The central theme of VAK model is that most people possess a dominant or preferred learning style. That is, they tend to use only one of these three styles and there are no two ways to it. However, as human beings we all know now that some people have a mixed and evenly balanced blend of the styles proposed by this model.

2.8.3.4. Curry's Learning Style Model

Curry (1983, 1987) reviewed the prevailing models used to measure learning styles. Using onion metaphor, she organized nine models of learning styles into strata resembling layers of an onion in order to depict the "inner and outer layers" of the learning style concept. She maintained that by her onion model and the new organization "learning behaviour is fundamentally controlled by the central personality dimensions, translated through middle strata information processing dimensions and given a final twist by interaction with environmental factors encountered in the outer strata. This three step connection between the personality strata and observed behaviour is analogous to the trait-state concepts in personality theory (Curry, 1983, p.7)". Curry (2000) made a point that her model

of learning styles “separates instructional format preference, learning style, and personality variables” (p. 240).

She puts Dunn and Dunn’s (1984) learning styles inventory in the first group, namely the Instructional Preference, and Kolb’s(1984, 2005) model in the Information Processing group, i.e. the second line of learning style tradition (Sim & Sims,1995). The innermost layer , the Cognitive Personality Style, Witkin’s field dependent/independent styles, Myer-Briggs Type Indicator model (Myers, 1980), and Kagan’s impulsivity/reflectivity model fall within cognitive personality tradition (curry, 2000). Later, she added the social interaction layer to the model. The core content of this style is the individual’s interaction during learning process. Despite the existing differences in these models and their conceptualization of the construct, all these models are certainly important in promoting learning styles repertoire of learners and “effective learning can take place when all of the different aspects of the learning experience are brought together to form the various layers effecting learning outcomes (Lewis, 2008, p.25)”.

2.8.3.5. Dunn and Dunn’s Learning Style Model

As mentioned earlier, Dunn and Dunn (1993, p.2) describe learning styles as “the way in which an individual begins to concentrate on, process, internalize, and remember new and difficult academic information or skills” (p. 2). The Dunn and Dunn learning styles model (1974) which is widely used in the U.S and abroad (Duncan,2012), is largely based on cognitive style theory and brain lateralization theory (Dunn, 1984; Dunn & Griggs, 2007; Dunn & Honigsfeld, 2009) and has been evaluated and refined extensively by the authors themselves and other researchers in the field (Lovelace, 2005) ever since it was introduced by Dunn and Dunn in 1974.

Dunn and Griggs (2007) argue that “learning style is comprised of environmental, emotional, sociological, physiological, and psychological elements that enable individuals to receive, store, and then use the knowledge or skills to which they have been exposed” (p. viii). Similarly, Dunn and Honigsfeld (2009) consider learning style as “biologically and developmentally determined set of unique characteristics that make the identical instruction effective for some students and ineffective for others” (p. 139). Dunn and Dunn (2008) maintain that “if students do not learn the way we teach them, we must teach them the way they learn” (p. 98).

2.9. Kolb's Learning Style Model

Kolb introduced his learning styles model in 1976. Later, in 1984, he revised and refined it and in 2005 published the technical specifications of his model which is now widely known as Kolb's Learning Styles Inventory (KLSI). The avoid confusion and observe the rules of brevity and clarity, throughout this research study the KLSI will be used as an umbrella term denoting both Kolb's learning styles model and the instrument he used to measure learning styles preferences.

Kolb's learning styles model is a two dimensional model: *perceiving* and *processing*. The perceiving dimension concerns with the way people perceive new information. It indicates their preference of concreteness over abstractness. The processing dimension, on the other hand, deals with the way people process what they perceive indicating their preference of action over reflection. Drawing upon the basic conceptualization of this model, Kolb introduced four original types of learning styles: *diverging style, converging style, assimilating style* and *accommodating style.*

Kolb (1984) argued that learning is a dynamic and continuous process that "occurs through the active extension and grounding of ideas and experiences in the external world and through internal reflection about the attributes of these experiences and ideas" (p. 52). Kolb and Kolb (2005) asserted that "learning is the major determinant of human development and that how individuals learn shapes the course of their personal development" (p. 4).

According to Sharma and Kolb (2011, p.3), Kolb's Learning Styles model is based on a theory of learning from experience, i.e. Experiential Learning Theory (ELT), that builds on the work of prominent 20th century scholars who believed that experience is central to their development. From the ELT perspective, learners construct knowledge by experiencing, reflecting, thinking and acting. The ELT offers a dynamic view of learning based on a cycle of learning with four learning modes. As a holistic theory, ELT views learning as the major process of human adaptation which involves the whole person. As seen, KLS and ELT are deeply rooted in the major dominant theories of learning during the 20th century, i.e., humanistic approach, constructivism (both cognitive and social), and Freirean critical pedagogy. The KLSI, according to Kolb (2005), can help us understand the

experience that we often take for granted. It does this by helping us to interpret the different kinds of experience we encounter and the different ways in which we respond to them and learn from them.

The experiential learning theory considers experience as the source of learning and development, and shares six propositions with the twentieth century prominent scholars such as John Dewey, Jean Piaget, and Carl Rogers, Carl Jung, and three major traditions of experiential learning (see Kolb, 2005, p.2).

2.9.1. Learning Cycle

The KLSI indicates a person's learning styles drawing upon his/her responses and illustrating to what extent a person depends on each of the four different learning stages, or cycles envisaged by the Experiential Learning Theory (ELT). These four original styles and the two composite learning styles are dealt with in details in the following sections.

2.9.1.1. Concrete Experience (CE)

Learning by experiencing involves learning from specific experiences, relating to people and being sensitive to feelings and people. This implies that CE exists only in the here and now. People who enjoy feeling of being fully open to the present moment often prefer this learning style. Engagement in CE can be enhanced through being aware and by attending to direct sensations and through immediate experiences. The presence and attention coupled with CE are of particular importance for how to handle our interpersonal relationships, communicate, work and lead others, and give and receive help.

2.9.1.2. Reflective Observation (RO)

Reflective Observation (RO) highlights learning by reflecting which involves carefully observing before making judgements, viewing issues from different perspectives, and looking for the meaning of things. RO can be enhanced by taking time to view things from different perspectives and by practicing empathy.

2.9.1.3. Abstract Conceptualization (AC)

AC represents learning by thinking which requires learners to analyze ideas logically, do systematic planning for learning and act on an intellectual understanding of the situation. The association between past and new

experiences is of prime significance in AC. In other words, AC describes one's ability to weigh things up. It depicts the preferences of people who make comparisons between new experiences and ideas and their past experiences and accepted ideas. This learning style which demands learner's engagement in thinking while learning can be enhanced by evaluating ideas, theories and events as well as forming practical generalizations and creating scenarios for action. People with AC learning style are prominent in analytical skills. That is, AC supports and promotes the analytical skills of explaining ideas or situations and, experiences and theory building.

2.9.1.4. Active Experimentation (AE)

Active experimentation describes an individual's preference to learn by doing not merely thinking. This involves showing one's ability to do things or get things done, take risks and influence people and events by getting involved in action. People who are interested in and drawn to practical world of real consequences prefer this style. AE is supportive of the action-orientated skills such as initiative or hands on, goal-setting and action-taking.

2.9.2. Learning Styles and Learner Types

As stated earlier in chapter one, Kolb (1984,2005,2007) identified four different types of adaptive learning modes within experiential learning cycle of ELT which include two bipolar modes of grasping knowledge or experience, i.e., Concrete Experience (CE) and Abstract Conceptualization (AC), and two bipolar modes of transforming knowledge or experience, i.e., Reflective Observation (RO) and Active Experimentation. These four quadrants of the learning cycle associate with four basic learning styles each of which is associated with different approaches towards learning. These basic learning styles include Diverging, Converging, Assimilating and Accommodating. Related to these four basic learning styles are four learner types, Divergers, Convergers, Assimilators and Accommodators. The basic characteristics of the original four learning styles are given below. Of course, it's worth mentioning that the major portion of the information on the learning styles provided here is taken from different articles written by Kolb (1984, 1999a, 1999b) Kolb and his colleagues (Kolb, Boyatzis and Mainemelis, 1999) and other researchers (Erdem, woods and Cho, 2004; Kim & kim,2012; Özgen et al., 2008)

and from research on different patterns of Learning Style Inventory (LSI), and research based on the ELT and four types of learning mode.

2.9.2.1. Diverging Style

People with diverging style or *divergers* are dominant at Concrete Experience (CE) and Reflective Observation (RO) which are greatly associated with strong imaginary ability and awareness of meanings and values. Divergers are able to view concrete situations from many different points of view, perform better in situations that call for generation of ideas, such as a "brainstorming", have broad cultural interests and are best at gathering information, and prefer to work in groups, listening with an open mind and receiving personalized feedback (Kolb et al. 1999).

2.9.2.2. Assimilating Style

People with assimilating learning style or *assimilators* are basically dominant in Abstract Conceptualization (AC) and Reflective Observation (RO). A person with this learning ability can better understand a wide range of information and put into concise, logical form. Assimilators are more interested in ideas and abstract conceptualization rather than focusing on people. Generally, they prefer theories to practical values and in formal learning situations they prefer readings, lectures , inductive reasoning, and thinking things through.

2.9.2.3. Converging Style

Unlike divergers, people with converging learning style or *convergers* are dominant in Abstract Conceptualization (AC) and Active Experimentation (AE). They are more interested in putting ideas and theories in practice.

2.9.2.4. Accommodating Style

People with accommodating learning style or *accommodators* are dominant at Concrete Experience (CE) and Active Experimentation (AE). That is, they are interested in learning from primarily planning and "hand-on" activities and experience. They enjoy carrying out plans and involving themselves in new and challenging experiences. Figure 2.2 illustrates Kolb's Learning Style model.

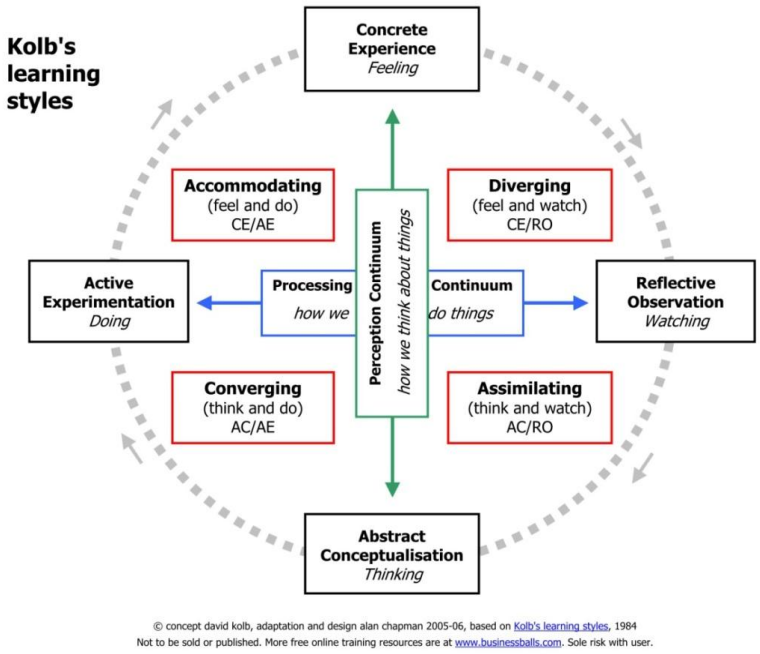

Figure 2.2. Kolb's Learning Styles Model (KLSI).

Kolb (2005) argues that the four basic learning styles and the four related learner types are often shaped by interaction between people and their environment. Unlike some researchers (Furnam, Jackson, and Miller 1999; Garner 2000) who view learning style totally as a personality variable, Experiential Learning Theory considers learning style as a social psychological construct that is only partially influenced by personality traits. This implies that there are other factors other than personality that influence learning styles. Therefore, learning style may be influenced by other important factors such as educational specialization, career choice, job role, task skills and also recently cultural influences (Yamazaki, 2002).

Researchers investigating the relationship between learning styles and personality type with Myers-Briggs Type Indicator (MBTI) instrument argue that Jung's classification of personality type into Extraversion/Introversion, Feeling/Thinking, Sensing, and Intuitive type precisely corresponds to Kolb's classification of learning style into Active Experimentation and Reflective observation, Concrete experience and Abstract conceptualization, respectively. In the same vein, *sensing* type correlates with *accommodating* style, *feeling* type correlates with *diverging* learning style, *intuitive* type correlates with *assimilating* learning style, and *thinking* type correlates with *converging* styles. Table 2.1 illustrates the similarities between KLSI and MBTI model.

Table 2.1. Kolb' Learning Style Model and Myer-Briggs MBTI Model

Kolb (LSI)	*Learning Cycle*	*MBTI*
Learning Modes		Learning Modes
Active Experimentation		Extraversion
Reflective observation		Introversion
Concrete Experience		Feeling
Abstract Conceptualization		Thinking
Learning Styles		
Accommodating	CE / AE	Sensing
Assimilating	AC / RO	Intuitive
Diverging	CE / RO	Feeling
Converging	AC / AE	Thinking
Accommodating		Extraverted Sensing
Converging		Extraverted Thinking
Assimilating		Introverted Intuitive
Diverging		Introverted Feeling

However, in SLA research, there is a controversy over the role of extroversion or introversion in theprocess of second language acquisition. Some researchers (Naiman et al., 1996) found that extroversion has nothing to do with identifying a person as good L2 learner. Busch (1982) reported that introverted adult Japanese learners outperformed extroverts in their pronunciation. Wakamoto (2000) found that junior college English majors in Japan who were extroverted were likely to make better use of learning strategies thanintroverts. Notably, it is plausible that extroversion may help second language learners to develop higher levels of communicative competence in spoken language (Dewaele, 1998). However, it cannot be considered as a privilege for success in listening, reading and writing since the conceptualization of extroversion and introversion may differ from one culture to another. Willingness to communicate (MacIntyre & Charos, 1996; McCroskey, 2005) in the classroom may as well influence one's general oral communicative competence. Likewise, active experimentation (extroversion) and concrete experience (introversion) learning styles may vary from student to student since, according to Brown(2007), cross-cultural norms of verbal and non-verbal interaction vary widely from one culture to another.

2.10. Learning Styles and Second Language Acquisition

Learning styles theory has attracted many researchers in general learning as well as second language acquisition. In the field of SLA research, many researchers and educators have tried to study learning styles in order to apply the theory to

language teaching methodology and cope with individual differences in L2 achievement (Brown, 1994, 2007; Ehrman, 1996; Ehrman, Leaver, and Oxford, 2003; Felder and Henriques, 1995; Oxford, 1995, 2002; Peacock, 2001).

Ehrman and Oxford (1990) argue that there are at least 21 dimensions of learning styles. Oxford (2003, p.3) criticizes the oft-cited view of learning styles which considers them as dichotomous construct. She maintains that learning styles are not dichotomous (black or white, present or absent); rather, they generally operate on a continuum or on multiple, intersecting continua. She described four dimensions of learning styles which are particularly influential in L2 learning as follow:

2.10.1. Sensory Preferences

Sensory preferences consist of four styles, namely visual, auditory, and kinesthetic and tactile . Oxford (2003) states taht “Sensory preferences refer to the physical, perceptual learning channels with which the student is the most comfortable” (p.3).

2.10.2. Personality Types

Personality type (also called psychological type) aspect of learning styles consists of four styles, i.e. extraverted/introverted; intuitive-random/sensing-sequential; thinking/feeling; and closure-oriented/judging vs. open/perceiving (Oxford, 2003).

2.10.3. Desired Degree of Generality

This dimension of learning styles contrasts global or holistic learners who focus “ on the main idea or big picture” with the analytic learners who concentrate on details. Oxford (2003) maintains that “Global or holistic students like socially interactive, communicative events in which they can emphasize the main idea and avoid analysis of grammatical minutiae” while analytic learners “tend to concentrate on grammatical details and often avoid more free-flowing communicative activities” (p.5). She suggests that there should be a balance between generality and specificity since this has been found to be very useful for L2 learning.

2.10.4. Biological Differences

According to Oxford (2003), the fourth dimension concerns with the biological factors, e.g. “biorhythms”, “sustenance”, and “location” which may cause great differences in L2 learning. Oxford (2003) observes that “Biorhythms reveal the times of day when students feel good and perform their best” and sustenance “refers to the need for food or drink while learning” and “location involves the nature of the environment: temperature, lighting, sound, and even the firmness of the chairs” (p.7). She concludes that biological aspects of L2 learning style are also very important, but, unfortunately, are forgotten by researchers.

A substantial body of evidence in the literature indicates that there is a correlation between learning styles and success in learning an L2. It should be noted, however, that as styles are flexible and may change over the years, the correlation between success in language learning and learning styles may depend on many factors and people may exhibit varying styles in different contexts. For example, Birgen (1989) investigated the relationship between field dependent (FD) and field independent (FID) learning styles (Witkin & Goodenough, 1981) and success in learning an L2 in a Turkish context. Her findings indicated that Turkish FID learners outperformed FD learners during L2 learning process.

Perhaps one of the large scale studies carried out so far on the learning style preferences of L2 learners is Reid’s (1987) study of learning style preferences of L2 students from different national and cultural background. Reid (1987) investigated the learning styles preferences of ESL students (*N*= nearly 1300) from various countries across the US. Her findings indicated a significant difference between ESL students and native speakers of English with respect to their perceptual and social learning style preferences. The most preferred learning styles among ESL students were found to be Kinesthetic and tactile learning styles while native speakers were reported to be less tactile than all ESL students.

As for group work, it was found that most of the ESL students were not interested in group work with native speakers of English were found to be less inclined to group learning than all the other groups in the study. Moreover, Chinese students were highly visual learners, Korean students were the most visual than other groups and Japanese learners, perhaps due to their cultural background, proved to be the least auditory of all the groups. Reid (1987) concluded that:

1. *ESL students often differ significantly in various ways fromnative speakers of English in their perceptual learning styles.*
2. *ESL students from different language (and by extensiondifferent educational and cultural) backgrounds sometimes differ significantly from each other in their learning style preferences.*
3. *Analysis of other variables, such as sex, length of time spent in the United States, major field, and level of education, indicates that they differ significantly in their relationship to various learning style preferences.*
4. *The data suggest that as ESL students adapt to the U.S. academic environment, some modifications and extensions of learning styles may occur (Reid, 1987, p.99).*

Similar results were obtained by Stebbins (1995) who studied the learning styles preferences of learners. The findings showed that cultural differences among the participants were the major cause of their varying learning preferences. Güneş (2004) investigated the relationship between EFL learners' (N=366) and learning styles preferences (LSPs) and L2 achievement in preparatory courses of Gazi University in Ankara/Turkey. The findings of her study showed that students' LSPs did not influence the participants achievement scores. Likwise, Dizdar (1993) ivestigated the relationship between success on tests and LSPs of EFL intensive preparatory students (*N*=152) in preparatory classes of Istanbul Technical University/ Turkey. The findings showed no relationship between LSP and test achievement.

Tao (2011) used PEPS to measure the Chinese university students'(N=300, aged 18-23) learning preferences pertaining to the 19 modalities of Dunn and Dunn's model, namely "noise, light, temperature, design, motivation, persistence, responsibility, structure, peer orientation, authority orientation, auditory, visual, tactile, kinesthetic, intake, evening/morning, late morning, afternoon, and mobility" (Tao, 2011, p.48) in relation to foreign language proficiency. The findings revealed that "only Seating design, Responsibility, Authority orientation, Kinesthetic, and Mobility" significantly predicted English achievement among the participants.

Razawi et al., (2011) investigated the diverse learning styles employed by ESL students in a secondary school students (*N*=90) of SMK Seri Berang, Kuala Berang, Terengganu in Malaysia. The students' learning preferences were identified in order to recognise their learning styles. The results showed that most preferred learning styles were global, impulsive, perceiving, extroverted,

introverted, ambiguity tolerant, sociological, auditory, visual and active learning styles. They concluded that their findings may contribute to curriculum design and lesson planning in L2 learning.

2.11. Multiple Intelligences and Learning Styles: Pursuit of Relevance

It is hypothesized that multiple intelligences are the same as learning styles. However, Gardner, throughout his works, has differentiated the multiple intelligences theory from "learning style" construct. Gardner (1995) argues that "The concept of style designates a general approach that an individual can apply equally to every conceivable content. In contrast, an intelligence is a capacity, with its component processes, that is geared to a specific content in the world (such as musical sounds or spatial patterns)" (pp.202-203).

According to Gardner (1995), although intelligences may work in concert in problem solving, one's high developed intelligence in one aspect, e.g., music, does not necessarily guarantee his high performance in other aspects, say, mathematics. This means that this issue has to be empirically investigated since "there is no clear evidence yet, according to Gardner, that a person highly developed in spatial intelligence, for example, will show that capacity in every aspect of his or her life (Armstrong, 2009, p.17).

The concept of learning style is also theoretically quite different from multiple intelligences. MI theory is a *cognitive* model by nature and reflects efforts to explain the way people use their abilities or intelligences to solve problems. Learning style models, however, are primarily process oriented while MI theory is product oriented. Nearly all learning style models, according to Silver et al., (1997), share two common features:

1. *A focus on process.* Learning-style models tend to concern themselves with the process of learning: how individuals absorb information, think about information and evaluate the results.
2. *An emphasis on personality.* Learning-style theorists generally believe that learning is the result of a personal, individualized act of thought and feeling *(Silver et al., 1997, p.1).*

Most learning styles models focus on the dichotomous nature of learners' styles and preferences while MI theory puts emphasis on the independent nature of intelligences. Furthermore, learning style models stress that learners largely learn through perceiving and processing information. The Visual-Auditory-Kinesthetic (VAK), model, for instance, differs largely from MI theory for being specifically a

"*sensory-channel* model". However, MI theory is not mainly dependent on the senses. It seems Gardner is right in his claim that intelligences and styles are different concepts. If an individual is described as a Visual learner, according to the VAK model, this implies that those who lack this attribute (blind people), then, will presumably lag behind in learning process. However, there are many blind and deaf people (take the case of Helen Keller) who can learn better than even those who do not suffer from such deficiencies. Is it reasonable and even feasible to claim that blind people do not have spatial intelligence? The answer is definitely 'No'. If yes, then, we'll certainly have hard time justifying blind people's getting around in their daily life and running the errands. Therefore, there is nothing wrong in being blind and having spatial intelligence or being deaf and at the same time having a well-developed musical intelligence.

Similarly, Myers-Briggs personality type theory emphasizes on different personality types. It is clear that personality type theories have little to do with an individual's different biological potentials to carry out tasks in different sociocultural contexts. Armstrong (2009) asserts that "to attempt to correlate MI theory with models like these is akin to comparing apples with oranges" (p.18). Moreover, It was stated earlier that the MI theory is supported by a rich research base, whereas most learning style models sadly lack this rich and powerful basis. Despite existing differences, there are nevertheless similarities between multiple intelligences and learning styles approaches. The following list, provided by Özgen et al., (2011) shows some of these similarities between the two approaches:

1. *They argue for a change in traditional education.*
2. *They are learning and learner centered.*
3. *Teacher is reflective and the decision-maker.*
4. *Student is reflective and plays an active part in the process.*
5. *Association with daily life is important in the learning process of students.*
6. *Instead of the standard curriculum, they propose a comprehensive approach with essence, depth and quality.*
7. *They promote individual differences.*
8. *They interact with various disciplines. (Özgen et al.,2011, p.171).*

According to silver et al., (2000) both MI and Learning Styles theories admit that all people have access to all styles/intelligences, but that they are particularly strong in one or two of them. They note that MI theory suffers from two gaps that limit its validity to be applied in learning. First, the MI theory is rooted in cognitive science, which ignores affective factors. However, the theory of learning style is deeply rooted in psychoanalysis. Therefore, psychological *affect* and individual personality are given more weight in understanding individual differences in learning process. Second, the MI theory is product oriented while learning styles is process oriented. Put differently, MI theory fails to account for the "individualized process of learning". Given the variations within a particular intelligence, this limitation of multiple intelligence theory becomes more vivid (Silver et al., 2000).

From the ongoing discussion on the relationship between MI theory and learning styles theory, it can be concluded that even though multiple intelligences and learning stylesare concepts that are related to human cognition in one way or another and are evoked by different types of stimuli, i.e. intermediate and peripheral stimuli (Torresan 2010) respectively**,** they appear to overlap in certain cases. According to Torresan (2010), one can find a linear relationship between most of intelligences and learning styles: Bodily-Kinaesthetic Intelligence vs. Bodily-Kinaesthetic Style; Spatial Intelligence vs. Visual Style; Musical Intelligence vs. Auditory Style; Interpersonal Intelligence vs. Extroverted Style; Intra-personal Intelligence vs. Introverted Style; Logical-Mathematical Intelligence vs. Analytical Style. However, naturalistic intelligence and linguistic intelligence do not overlap with corresponding styles.

It should be borne in mind that the difference between intelligences and learning styles lies in their functioning as either peripheral or intermediate stimuli (Torresan, 2010) which affect language learning process. According to Torresan (2010), learning styles function as peripheral stimuli which often remain in the background during second language teaching and learning process. However, intelligences are viewed as intermediate stimuli which remain in the foreground and demand learners' concentration on the stimuli to accomplish language related tasks. For example, using background music during reading or writing processes serves as a peripheral stimulus to facilitate these processes and make language learning pleasant. However, playing music and asking the students to write a composition

based on the song just played functions as an intermediate stimulus which appeals to learners' musical intelligence. For instance, in Suggestopedia method of language teaching the Baroque music is used to make learning process more pleasant and help students in memorization tasks. Therefore, if the stimuli initiate the cognitive engagement of a non-competent language learner, they are considered as intelligences, otherwise they are better to be referred to as learning styles.

As stated earlier, even though intelligences are separate human capacities, they often work in concert and overlapping elements can be observed in one's MI profile. However, some of the constituent components in intelligences are intelligence specific and are not shared by other intelligences. For example, lexis and semantics are properties that belong only to linguistic intelligence. From L2 learning perspective, one can identify the functioning of all intelligences in all aspects of language learning and use. For example, linguistic intelligence covers lexis and semantics, and the morpho-syntax and language rules fall within logical/ mathematical intelligence dimension. While one's emotions and emotive aspect of language learning fall within intra-personal intelligence, interpersonal intelligence is directly related to spoken language and pragmatics. By using naturalistic intelligence, one can capture the relationship among texts, languages and diverse cultures. Most intelligences are directly related to linguistic aspects of language learning, whereas kinaesthetic intelligence concerns primarily with extra-linguistic or paralinguistic aspect of communication. Musical intelligence concerns phonetics and phonology and also prosody (Demirezen, 2009), and spatial intelligence deals with visual aspects of the language including contextualization and visualizations of linguistic elements. Therefore, language learning is not merely the accommodation of linguistic competence composed of lexis and semantics or morphological and syntactic rules. On the contrary, language learning involves different types of 'languages' and successful second language learning encompasses the capacity of a person to coordinate these languages (verbal and non-verbal, linguistic and extra or paralinguistic features of language) while involving in a linguistic event. Indeed, as Freddi (1990, p.60, origin in Italian cited inTorresan, 2010) asserts, "language can represent the contents of non-verbal languages but it cannot take their place".

Given that language learning is primarily contingent upon mastery of linguistic competence aligned with communicative competence, application of MIT in ESL/ EFL teaching environments entails the analyzing and identification of linguistic intelligence and its various underlying components that accompany communicative competence on one hand, and operationalization of these multifaceted capacities in actual language teaching and learning on the other. Put briefly, a MIT-based pedagogy makes every effort to provide language learners with the best conditions to learn an L2. Thus, a MIT-based language teaching appeals to a variety of extra-linguistic capacities that accompany the verbal language, privileging the dominant one to the learner. From individual differences (ID) and motivational perspectives, a MIT-based language teaching mainly builds upon intrinsic factors or intermediate stimuli which assert the use of verbal and non-verbal codes to foster communicative competence in learners, taking the MI profiles of all language learners into account. However, the application of learning styles theory in language teaching concerns with extrinsic stimuli, e.g. listening to Baroque music during language learning process as proposed by Suggestopedia method of language teaching, which require the reasonable use of language learning styles and preferences to make learning more pleasant (Torresan, 2010). Analogously speaking, MIT functions as an intrinsic motivation (Dörnyei, 2005, 2009) for L2 learning, while learning styles ought to serve as an extrinsic motivation. Obviously, language teaching curriculum which integrates both MIT and learning styles theory appeals to the learners' extrinsic and intrinsic motivations simultaneously and constitutes a better avenue to quality and successful foreign language language learning.

Research on the individual differences has put more emphasis on investigating the relationship between learning styles and multiple intelligences independently and as two distinct field of inquiry so far. However, recently, there has been a growing interest in finding relationship between these two theories and their effect on successful learning and academic achievement, especially in L2 learning. Zarei and Shahi (2010), for instance, conducted a research study to discover possible relationships between Iranian university students' (*N*=300) Multiple Intelligences (MI) profiles and their learning styles. The results of their study indicated that visual style was highly correlated with all kinds of multiple intelligences, very

strongly correlated with interpersonal and intrapersonal intelligences, and strongly correlated with Natural, Musical, Logical, Existential, Kinesthetic, Verbal and Visual-Spatial intelligences. The findings also showed strong positive correlations between Auditory Style and Natural and Existential intelligences. However, no significant relationship was found between Auditory Style and Visual-Spatial intelligence.

Seifoori and Zarei (2011) conducted a research study to examine the relationship between the learning styles and the multiple intelligence profiles of Iranian English major sophomores (*N*=94). Kinesthetic learning style and spatial intelligence were found to be the most dominant among the participants. Additionally there were significant relations between "tactile learning style and mathematical intelligence; kinesthetic learning style and mathematical intelligence; tactile learning style and spatial intelligence; tactile learning style and bodily intelligence; and kinesthetic learning style and bodily intelligence" (p. 1606). They further stated that " Students with a higher preference for tactile learning style seem to be stronger in their mathematical, spatial, and bodily intelligences, and those with a higher preference for kinesthetic learning style seem to be stronger in mathematical and bodily intelligences" (p. 1612).

2.12. Criticism of Learning Styles

Many studies have been addressed to learning styles but the field still lacks clarity over the subject of inquiry. The learning styles construct has been criticized by many experts and researchers. They suggest that little evidence is available so as to support the existence of learning styles at all. Each of the prevailing models of learning styles lacks substantial and valid research to support claims made by the proponents of these models. The learning process is actually far more complex than these theories and models suggest. Theories on learning styles often fail to fully account for how different experiences and cultures may impact the learning process.

Curry (2000, p. 249) argues that there are reliable learning style differences, and that factors such as age and gender factors influence learning style preferences, and that learning styles moderate on academic achievement. However, she admits that learning styles theory has its own drawbacks, too. Curry (2000) stated that the

main reason is that learning style concept is "often misunderstood and occasionally misapplied" (p. 248). She further asserts that "the most significant limitation is conceptual confusion" which is the logical outcome of the large number of learning styles instruments available in measuring the construct, and that this drawback of the construct "stems from poor research design" (p. 246). The pour design itself stems from the researchers' misconceptions and overgeneralizations of their findings and their unsupported assertions and suppositions. Using metaphoric language, Curry (1990) succinctly depicts weak points of learning styles models. She likens researchers in the field to a blind man and states that

> *"like the blind men in the fable about elephant, learning styles researchers tend to investigate only a part of the whole based on their own theories and conceptualization of the construct and thus have to yet provide a definitive picture of the matter before them" (Curry,1990, p.50).*

Learning styles fail to account for the 'matching hypothesis' regarding learning styles. That is, there often exist mismatches between learning styles of the students and that of teachers and instructional style. This "matching hypothesis" means that students' learning style should be similar to the instructional style (Kannienen, 2008, p.23). According to Smith (2002), for each research study supporting the matching hypothesis there is a study rejecting it . Put differently, the crux of the dilemma is the discrepancy among the researchers regarding the conceptualization of the construct and various views on what the concept actually is concerned with.

Another criticism levelled against learning styles models concerns with the assumption of stability of learning styles. According to Coffield et al., (2004), most of the questionnaires used to measure leaning styles often lack the criteria of construct validity, predictive validity, internal consistency reliability, and test-retest reliability. For example, Coffield et al., (2004) showed that only three out of the 13 learning styles studied came close to these requirements of learning styles questionnaire. Therefore, those who are using learning styles questionnaires should take the limitations of them when interpreting the results (Coffield et al. 2004, Kannienen, 2008).

2.13. Conclusion

This chapter provided background information on multiple intelligences, emotional intelligence, and learning styles, and different approaches and models associated with these constructs. As seen, ample evidence is available so as to indicate that both theories do have effect on the learning outcomes of students. However, there has been a gap in conducting research to explore the relationship between these constructs on one hand, and their effect on the overall academic achievement of learners on the other. In this respect, most of the research from different fields mainly focus on measuring either multiple intelligences or learning styles in relation to science, medical health, education, industry and workplace. This also proves to be true if we consider the research on the relationship between multiple intelligences, emotional intelligence, leaning styles and L2 achievement. This may be attributed to the fact that these theories were not developed originally for language teaching and learning. There is now a growing interest to investigate the probable relationship between these two theories and L2 learning.

Despite the current lack of hard evidence on the reliability and empirical validity of the learning styles theory, most educators still may well find it helpful to make use of them in their teaching, expecting that they will improve students' performance or motivation. Learning styles are not the panacea for all the problems encountered in learning process; rather, they are, at best, only one part of essential and related factors in learning and thinking and, at worst, they are a 'red herring'. It is presumed that there is a seemingly mismatch between the theories underpinning the better models of learning styles and the models developed drawing up on the fundamental principles of the related theories on one hand and the instruments developed to measure learning styles preferences of learners on the other. The theories have the potential to provide teachers and learners with motivating and liberating concepts of learning. Therefore, the theories are greatly superior to the models and instruments follow them since these models all are liable to be misused and they may fail to successfully label the learners and thus result in giving false account of the learners and limit them.

It was argued that learning styles of students are not fixed and may fluctuate within the context of a course from concept to concept, or lesson to lesson (Gilbert & Swanier, 2008). Learning styles theory puts emphasis on the fact that people have

different approaches to learning and studying. It is assumed that identifying learners' preferences can help teachers to provide instruction in a manner that corresponds to the student's learning style (Carver, Howard, & Lane, 1999; Gilbert & Swanier, 2008). However, given the flexibility of learning styles across learning process, this identification may not yield desired goals. Therefore, it is important for the teachers to assess the learning styles of their students in order to better understand how they learn. The awareness of students' learning style preferences can help the teachers to more effectively orient their L2 instruction. There is no single fixed L2 teaching methodology that fits all students. Therefore, identifying multiple intelligences profiles, emotional intelligence, and learning styles preferences of the students help determine L2 learners' acapacity to adopt teaching methodologies which appeal to all learner types with diverse minds and intelligences.

Equipped with a knowledge of multiple intelligence, emotional intelligence, and learning style theories, teachers can integrate various learning strategies and technics (Oxford, 1990) to present teaching materials, new ideas in many different ways and engage students in the educational process through repetitive evaluation of students' potentials and learning preferences while varying their own teaching styles to fit the level of students in different contexts and even in different subject matters. This provides students with a kind of alternative experience that Gardner calls "many windows looking into one room". Although theories of intelligences and learning styles are quite different, they have the potential to impact effective L2 learning and academic achievement. They are complementary instead of being competitive (Dunn, Denig & Lovelace, 2001; Silver et al., 1997, 2000) and mutually exclusive. Moreover, emotional intelligence can evoke affective aspects of L2 achievement since they often function between emotions and cognition. That is, it can bridge the gap between the MI theory and learning styles in L2 achievement since L2 learning is emotionally- laden and is affect by both cognitive and affective factors.

3. METHODOLOGY

3.1. Introduction

This chapter presents the overall design and methodology of the present research study in detail and describes the procedures included in the study. It represents research questions and gives information on how the research was designed. Furthermore, it provides information about participants and population of the study, how sampling was done, contexts and settings, materials and instruments utilized in data collection, data collection procedures and statistical procedures used in analyzing data. Finally, it explains how ethical considerations were met during data collection process.

3.2. Research Design

The research design used in this dissertation was basically a descriptive quantitative correlational research design. A descriptive study is one in which information is collected without changing the environment and manipulating the context. In other words, a descriptive study is mainly aims at describing the distribution of variables under investigation regardless of existing cause and effect relationship among the variables or other hypotheses (Mackey & Gass, 2005).In terms of methodology, the survey procedures were utilized and quantitative data collection instruments like questionnaires were employed during the data collection process. Hence, the study could be considered as a quantitative research. Moreover, in order to support and verify the findings of the quantitative data, the participants were asked to answer three questions regarding their perception of the multiple intelligence types, emotional intelligence and their learning styles (See Appendix D). However, only 15 participants returned to the researcher. It should be noted that these open-ended questions were used only to provide partial support to the findings of the quantitative data analysis and they by no means denote the qualitative research design in the same complexity as used in a qualitative research design.

The study could also be considered as correlational research in the sense that it measured the possible relationships between multiple intelligences, emotional

intelligence and learning. The study employed both explanatory and prediction design through correlation and regression analyses to measure the predictive power of independent variables on the participants' academic achievement. The purpose was to determine which of the variables co-varies positively or negatively with each other in relation to prospective English teachers' academic achievement and to what extent they contribute to the prediction of academic achievement.

3.3. Population and Sampling

The aim of the study was to examine the academic achievement of prospective English teachers majoring English as a foreign language in a Turkish EFL context. Therefore, every prospective English teacher studying English as foreign language in state universities and colleges was considered as a potential participant for the study. However, the study was conducted with prospective English teachers at the English language teaching department of Hacettepe University in Ankara/Turkey. The participants were senior student teachers (*N*=102, *Male*: *N*= 26, 25.5 % and *Female*: *N*= 76, 74.5%).The participants were reached directly during the second term of 2012-2013 academic year at the ELT department of Hacettepe university. Given that the participants had to answer three different types of questionnaires totalling 164 items, to avoid any inconveniences and obtain true answers the participants were asked to complete the questionnaires voluntarily and were assured to leave the survey whenever they felt they felt unable to continue with. It deserves mentioning that they were free whether to participate in the study or not and those who received questionnaires were required to fill out the consent forms (see Appendix E)and sign them.

Each participant completed a demographic data sheet asking information on the following areas: (a) gender, (b) age, and (c) parents' educational background and occupation. However, only gender and age factors were analized as individual factors assumed to influence the participants academic success. A very brief description of each is offered as:

Gender: There were 26 male (25.5%) and 76 female (74.5 %) prospective English teachers in the study. As shown in Table 3.1 the sample based on gender variable indicated that ELT departments are dominated by females. This can be attributed to the course nature, not to educational system, that is, ELT classes are mixed-sex

and it can be argued that teaching of English language as a profession is not favored by males in Turkey.

b. *Age:* The descriptive statistics for age groups revealed that a large proportion of both male and female participants was within the '18 to 23' age group (F = 97; 95.1 %), the second age group fell within the '24 to 27' (F = 5; 4.9 %) age group, indicating that the sample comprises two different age groups.

Table 3.1. Descriptive Statistics for Demographic Variables

Variables		***F***	***%***
Gender	Male	26	25.5
	Female	76	75.5
Total		102	
Age	18-23	97	79.6
	24-27	5	16.4
Total		102	

3.4. Data Collection Instruments

Three different types of questionnaires were used for collecting data for the present study. The Multiple Intelligences Developmental Assessment Scales (MIDAS), developed by shearer (1996, 2006a), was employed to measure the participants' profiles of intelligences in reference to the original eight intelligences introduced by Gardner(1983, 1993a). As stated earlier in chapter one, the MIDAS assesses an individual's ability to use his/her capacities in a wide range of meaningful activities by their ratings on a self-report survey scale. The MIDAS is a self-reported or 'othercompleted' questionnaire that can be run and evaluated by teachers, counselors and experts from psychology. According to Saban et al., (2012, p.5), the MIDAS "inquires about developed skill, levels of participation, and enthusiasm for a wide variety of activities that are naturally encountered as a part of daily life". Originally, it was used as an interview to assess the multiple intelligences of adolescents and adults experiencing cognitive rcovery (Way & Shearer, 1990). The results of research conducted ever since,however, proved that the MIDAS can be considered as a "reasonable estimate" of an individual's intellectual mood in the eight areas outlined by the MI theory (Shearer, 1996; Saban et al., 2012).

The MIDAS includes 119 items (musical intelligence=14 items, kinesthetic intelligence =13 items, mathematic/logical intelligence = 17 items, Spatial Intelligence =15 items, Linguistic Intelligence =20 items, Interpersonal Intelligence =18 items, Intrapersonal Intelligence =9 items, Naturalistic Intelligence =13 items) which, according to Saban et al. (2012, p.4), measure "the frequency or duration of time the person participates in a particular activity, or ask for a realistic evaluation of the person's performance or his/her displayed enthusiasm on that activity" through a 6-point Likert responses scale (ranging from *a* to *f*, with *e* being the highest and *f* being ''*I do not know* or *does not apply*/*I'm not sure*"). Each item in MIDAS consists of six response choices (e.g., "*do you have interest for talking about things like the news, family matters, religion or sports, etc.*?", and the choices are: *not at all, fairly good, good, very good, excellent, I don't know or does not apply*). The response choices, or 'response anchors' vary from one item to another and are uniquely written to meet the requirements for the content of each item(Saban et al.,2012; Shearer, 2006a, 2012). MIDAS is a copyrighted instrument. Therefore, the complete reproduction of the Scale was not given in the study. It should be noted that the MIDAS used for this study after prior permission obtained from Its producer and his colleague (See Appendices F & G).

The Emotional Intelligence Scale (SEIS), developed by Schutte, Malouff & Bhullar (1998, 2009), was used to asses the emotional intelligence profile of the participants. The SEIS initially was developed based on the theoretical work of Salovey and Mayer (1990), and represented three subcomponents of appraisal, regulation, and utilization of emotions. Studies by Schutte et al., (1998) indicated that the scale had satisfactory internal reliability estimates, i.e. .87 and above.

The SEIS (Schutte et al., 2009) was employed to assess the self-perceived and self-reported profiles of prospective English teachers in 4 dimensions of perception of emotions (PE), managing emotions in the self (ME), social skills or managing others' emotions (MoE), and utilization of emotions(UE). It includes 33 items (PE=10 items, ME=9 items, MOE=8 items and UE= 6 items) which ask the respondents how they feel about their ability to control and regulate their own and others' feelings and emotions (Salovey& Mayer, 1990). It is a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Each subscale of the SEIS measures specific abilities of individuals in appraisal and utilizing their

emotions(Brackett& Salovey, 2006; Schutte et al., 2009; Akbari & Tavassoli, 2011).The *perception of emotions* subscale assesses one's ability to recognize and perceive emotions in self and others (e.g., "*I know why my emotions change*" and "*I can tell how people are feeling by listening to the tone of their voice*."). The *managing own emotions* subscale measures the ability to be open to feelings in oneself (e.g., "*I have control over my emotions*.") and others (e.g., "*Other people find it easy to confide in me*.") to increase personal understanding and growth. The *utilization of emotions* subscale evaluates the ability to engender and utilize emotions to covey feelings (e.g., "When I am in a positive mood, solving problems is easy for me.").

Kolb's learning style inventory (KLSI) version 3.1 (2005, 2007) was emplyed to determine the potential relationship between the participants' learning styles and their academic achievement. The KLSI version 3.1 is a simple self-assessment instrument that is developed to assess learners' preferred ways of coping with learning tasks and is easy to administer and straightforward for subjects to complete.

The KLSI includes 12 items measuring learner's learning style profiles in four dimensions of learning cycle. The KLSI measures six learning types or styles. First, the four original styles or learners' preferences on the learning cycle , i.e. Concrete Experience (CE),Reflective Observation (RO), Abstract conceptualization (AC), and Active Experimentation (AE) is measured by the instrument. Next, the two composite learning styles are determined through substration of AC-CE and AE-RO. These two additional styles aim to assess whether one prefers abstractness over concreteness (AC-CE), or actionor doing over reflection or thinking(AE-RO).

Finally, the socio-demographic information of the participants such as age and gender were obtained through questions attached to the first section of the three questionnaires(See Appendix A). The aim was to find out whether the participants' multiple intelligences and learning styles differ with respect to these demographic factors.

3.5. Validity and Reliability Of The Tools

The reliability and validity of MIDAS have been established by numerous studies. According to Shearer (1996), six studies were conducted to investigate the validity and reliability of the MIDAS during its development. According to Shearer (1996,2006a, 2007, 2012) the scale provides a reliable estimate of one's MI strengths and limitations that correspond with external rating and criteria. To evaluate concurrent validity of the MIDAS, a sample of 56 participants was used and results indicated correlation values of .35 to .65 among the subscales. Additionally, a study with university participants (*N*=224) was carried out to evaluate the reliability of the scale, and the results of analysis indicated an 86% agreement in one category. Moreover, four additional studies conducted to measure the internal consistency of the MIDAS reported an alpha coefficient of .85 for the scale. Finally, a study with a college students (*N*=119) proved that the MIDAS is a culturally unbiased assessment scale (Saban et al., 2012). A recent crosscultural study (Shearer, 2012) was conducted to measure the inter-rater reliability of the scale and the results showed even higher levels of agreement among raters from five differernt countries.

The Schutte et al.'s (2009) emotional intelligence scale had a higher internal consistency of 0.90 for the 33-item scale. The cross-check for the 32 participants and the test-test reliability of the scale was.87, indicating a good and satisfactory measure.Many studies carried out in the field of education and others(Stough et al.,2009) have proved the reliability and validity of the the scale.

According to Kolb (2005), the validity and reliability of the KLSI 3.1 have been established by many researchers. For instance, the internal consistency coefficients of some substantial studies of KLSI 3.1, adapted from (Kolb, 2005), are given in table 3.2 below. As seen, the results of these studies show good internal consistency reliability for the KLSI 3.1 scales across a number of different populations.

Table 3.2. Cronbach's Alpha Coefficients for KLSI

Source	*N*	*CE*	*RO*	*AC*	*AE*	*Ac-CE*	*AE-RO*
On-line sample	5023	.77	.81	.84	.80	.82	.82
Kayes (2005)	221	.81	.78	.83	.84	.77	.84
Wierstra & DeJong (2002)	101	.81	.78	.83	.84	.83	.82

Cronbach's Alpha Coefficients for KLSI (Kolb, 2005).

The internal consistency reliability of the instruments for the present study are given in Table 3.3 below. As seen, the Chronbach's Alpha Coefficients in this study are all above .70 which indicate a satisfactory measure for the data.

Table 3.3. The Internal Consistency Reliability of the Instruments Used in the Study

		Chronbach's α
Multiple Intelligence	Linguistic	.92
	Mathematical	.90
	Musical	.86
	Kinesthetic	.84
	Interpersonal	.91
	Intrapersonal	.87
	Spatial	.88
	Naturlist	.90
Emotional Intelligence	Perception of Emotions	.81
	Managing own emotions	.84
	Managing others' emotions	.82
	Utilization of emotions	.85
Learning Styles	Concret Experience	.85
	Reflective Observation	.86
	Abstract Conceptualization	.89
	Active Experimentation	.91
	AC-CE	.89
	AE-RO	.87

3.6. Data Collection and Analysis Procedures

Prior to data collection, approval was obtained from the institute of educational sciences and the ELT department of the faculty of foreign languages at Hacettepe University in Ankara/Turkey. Data collection began in March 2013 and was completed in April 2013. Approximately 150 paper-based questionnaires were used for collecting data. All the data for this study were collected from the prospective English teachers of a teacher education program at the ELT department of Hacettepe University in Ankara/Turkey.

After the codification of the data, the SPSS version 21.0 was employed to analyze the collected data for the quantitative part. In this study, three different groups of variables were examined. The socio-demographic factors (such as age, gender and learning experiences), multiple intelligences profiles in eight designated scales, Emotional Intelligence profiles along with its four subscales, and the subjects' learning styles in all six subcategories were independent variables and the prospective English teachers' academic achievement, i.e., their Grade Point

Average (GPA), was the only dependent variable of the present research study. The total mean scores (Grade Point Averages) of the participants at the end of the four year teacher education program were considered as their academic achievement. The printed document of the prospective English teachers' GPA's as part of their academic success was obtained from the department of English language teaching at Hacettepe university. Throughout the study, therefore, the terms academic achievement and GPA were used interchangeably and GPA was used as the quantitative representaion of the accomplishment of a four year teacher education program.

Given the fact that dependent variables can be changed into independent ones through categorization (Pallant, 2010), the participants were divided into three groups of high, moderate and low achievers based on the scoring manual of the Institute of Educational Sciences. That is, scores ranging from A3 to A1 considered as 'High', scores from B3 to B1 as 'Moderate', and C3 and scores below as 'Low'. This provided further opportunity to measure the probable differences between groups with respect to their MI and EI profiles and learning styles preferences.

Descriptive statistics such as means (M), standard deviations (SD), frequency and percentages were used to explain the participants' levels of academic achievement, MI profiles and learning styles. It should be noted that although normality of data distribution and sample size are not so important to carry out parametric data analysis in the current literature (Norman, 2010), all preliminary analyses were conducted to ensure the normality of data distribution and solve linearity problems, if there was any. The data distribution was normal, so parametric teasts were used for the analysis of the data. Inferential statistics and related statistical tests were used to analize the quantitative data. Independent samples t-test was used to find out whether participants' differed in their perception of MI profiles, EI, and learning styles with regard to gender and age factors. Pearson Product-moment Correlation was used to determine the relationship between MI, EI, and learning styles. Multiple regression analysis was run to unfold the predictive power of independent variables, and one-way ANOVA was employed to determine and explain the existing and potential relationship

and/or differences among high, moderate, and low achievers regarding the participants' MI profiles, EI, and learning styles.

During the scoring and computation processes, the qualitative data were codified and quantified in order to fit for quantitative data analysis. All the responses were codified so as to be used for quantitative data analysis. Multiple intelligences were assigned values ranging from 1 to 8, emotional intelligence was assigned as number 1, and learning styles were assigned values ranging from 1 to N based on different categorization of the learning styles (Brown, 2007; Gezmiş & Sarıçoban, 2006). However, for analysis purposes and ease of interpretation, they were put under specific learning styles based on the four original learning styles in Kolb's learning style inventory (KLSI). Therefore, the styles which didn't fit the KLSI model and objectives of the present study were not included in the study.

Besides, participants' ratings for items regarding their MI profiles, emotional intelligence, learning styles and related subscales were summed so as to be explained and compared statistically. Following Shearer's (2006a) manuals, the cut-off points for categorizing the participants' perfect scores into high, moderate, or low levels were 0-40 for 'Low', 40-60 for ' Moderate' and 60-100 for 'High' levels of multiple intelligences.

Similarly, the participants' ratings for Emotional Intelligence were calculated in order to get the perfect scores for each dimensions of the scale. Schutte et al., (2009) classified the SEIS into four distinct dimensions: *Perception of Emotions*, *Managing Emotions in the self*, *Managing other People's Emotions*, and *Utilization of Emotions*.The negatively-worded items were reversed so as to fit for the further analyses. Similar to MI perfect scores, participants were classified into 'High', 'Moderate', and 'Low' based on the self-developed cut-off points. That is, scores were considered as 'High' if they fell within the 25% of the high scores in total range, 'moderate' if they fell within the 50% of the moderate score of the totatl range, and 'Low' if they fell within the 25% of the scores of the total range. Surprisingly, the perfect scores of the participants were all above 50% of the total range, indicating either moderate or high levels of emotional intelligence.

As for learning styles scores, no categorziaton of perfect scores into high, moderate, or low groups were needed. After calculating the participants' ratings for

their relative preferences for the four dimensions of learning cycle, CE was subtracted from AC, and RO was subtracted from AE in order to compute the scores for the two composite styles of AC-CE and AE-RO. In comuting composite scores, there is the possibility of obtaining negative signs, which must be kept as such.

3.7. Ethical Considerations

Adequate care and attempt was given to safeguard the subjects and the university privacy and rights throughout the research procedures and the participants were assured that their responses to the questionnaires would be kept as confidential and no individual's personal identity or his /her profiles were to be identified and given away in data analysis, results and discussion sections of the study. Besides, they were adequately ascertained that no parts of their profiles would otherwise be included in any publications based on this research without their prior permission and only group data were to be reported. As mentioned earlier in this study, the participation in the study was strictly voluntary. Therefore, the subjects were assured that there were no anticipated risks regarding their academic and personal performance and positions and that they could leave the research at any time they deemed it necessary.

4. FINDINGS AND DISCUSSIONS

4.1. Introduction

This chapter offers the statistical findings of the dissertation. First, descriptive statistics of the socio-demographic characteristics of the participants were provided to give a brief account of the sample. Second, the results of exploratory statistics for the profiles of the dominant intelligences of participants' and their learning styles preferences were illustrated to provide answer for the research question one. Third, the findings for correlation between MI profiles, emotional intelligence, and learning styles preferences were demonstrated (research question number two). Fourth, the analyses of the predictors of participants' academic achievement were shown to answer research question three. Fifth, the differences between high, moderate and low achievers in their MI profiles and learning styles were displayed (research question four). Sixth, the relationship between socio-demographic variables and participants' MI profiles, emotional intelligence, and learning styles preferences were presented (research question five). Finally, the results of exploratory statistics for the qualitative data were offered (research question six).

4.3. Analysis of Quantitative Data

The results are presented based on the research questions included in the study. The participants' Grade Point Average (GPA) was the dependent variable whereas multiple intelligences, emotional intelligence (EI), and learning styles as well as the demographic variables of the participants (i.e., gender and age) were the independent variables. This section begins with the first research question:

Question 1. What are the Multiple Intelligences profiles, Emotional intelligence profiles, and Learning Styles preferences of prospective English teachers?

4.3.1. Multiple Intelligences Profiles of Participants

The results of descriptive statistics for overall MI profiles of prospective English teachers in eight subscales of MI theory and also based on the suggested model of Shearer (1996,2006) for low, moderate and high (See section 3.6) are presented here.

The results of descriptive analysis revealed that the highest percentage (73%) was obtained for interpersonal intelligence and the lowest percentage (53%) was received for kinesthetic intelligence (Table 4.1). Indeed, the percentages analyses revealed that interpersonal (73%), linguistic intelligence (65%), and intrapersonal intelligence (64%) were the three dominant intelligences among students followed by mathematical intelligence (60%). It deserves mentioning that the obtained percentages were rounded for clarity purposes.

Table 4.1. Descriptive Statistics for Multiple Intelligences of the Participants

Intelligences	*N*	*%*
Linguistic	102	65
Logical/mathematical	102	60
Musical	102	55
Kinesthetic	102	53
Spatial	102	57
Interpersonal	102	73
Intrapersonal	102	64
Naturalist	102	56

Moreover, based on the cut-off points determined by Shearer (1996, 2006a), on the whole, 52.75% of the participants' scores fell within 'high' group, 35.73% fell within 'moderate' group, and 11.52 % fell within the 'low' group (Figure 4.1). Considering high and moderate levels of MI profiles, it can be cocluded that the participants had a good MI profiles which definitely contribute to their academic achievement. The findings also revealed that 75% of the participants had higher level of interpersonal intelligence, 73.2% had higher levels of linguistic intelligence, and 71% had higher levels of Intrapersonal intelligence followed by logical mathematical intelligence (54.9%). Logical/mathematical intelligence was the fourth dominant intelligence and this seems logical if we consider the fact that, according to Cephe and Arıkan (2003), the subject of inquiry, i.e. English, is a social study. These findings are somewhat different from other research studies in the field. Cephe and Arıkan (2003), for instance, found that the dominant intelligences were linguistic and spatial intelligences, while Özdemir et al.,(2006) and Saricaoglu and Arikan (2009) found logical/mathematical and linguistic intelligences to be the dominant intelligences among the participants.

The findings indicated that prospective English teachers had high levels of MI profiles except for musical, kinesthetic, and spatial intelligences which are directly

related to pronunciation, intonation, phonology and prosody of the language (Demirezen, 2009; Torresan, 2010), and natural intelligence. Consequently, the lower levels of MI profiles, i.e. higher percentages of low profiles, in these types of intelligences might imply that the participants might have difficulty in these problematic areas of L2 achievement. Moreover, higher percentages of low naturalistic intelligence indicates that the participants might have difficulty in dealing with classification of learning subjects, the observation of patterns, defining sets on the basis of existing regularity and differences among elements and language patterns, recognition of relationship among texts, languages, and even cultures and related issues.

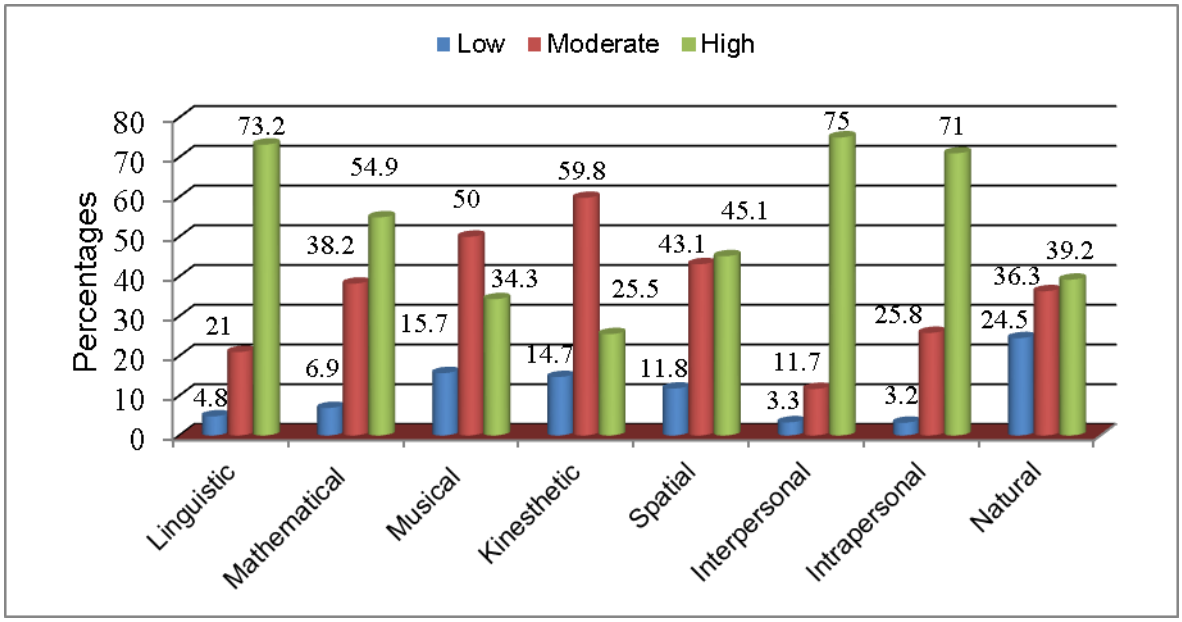

Figure 4.1. Percentages of Participants' Multiple Intelligences Profiles

4.3.2. Emotional Intelligence Profiles of the Participants

By the same token, the Emotional Intelligence (EI) scores of the participants were also computed here to obtain the appropriate cut-off points for presenting the overall ratings of the participants. The scores within the low, middle, and high score category of each variable in the total range were considered as 'Low', 'Moderate', and 'High', respectively. As shown in Table 2, The percentages analyses, based on the self-developed cut-off points, for overall EI and its four subscales revealed that a large proportion of participants (89.5%) rated the statements on EI positively, suggesting that they had high perceptions of EI,

10.5% rated moderately, and surprisingly, none of the participants fell within the low category of scores neither in overall EI nor in the four related subscales measured in the study. Figure 4.2 diagrammatically illustrates the percentages for the EI profiles of prospective English teachers for low, moderate, and high groups.

Table 4.2. Descriptive Statistics for EI and Its Subscales

Components	*N*	*%*
Perception of Emotions	102	83
Managing own emotions	102	86
Managing others' emotions	102	80
Utilizatıon of emotions	102	89
Overall Emtional Intelligence	102	93

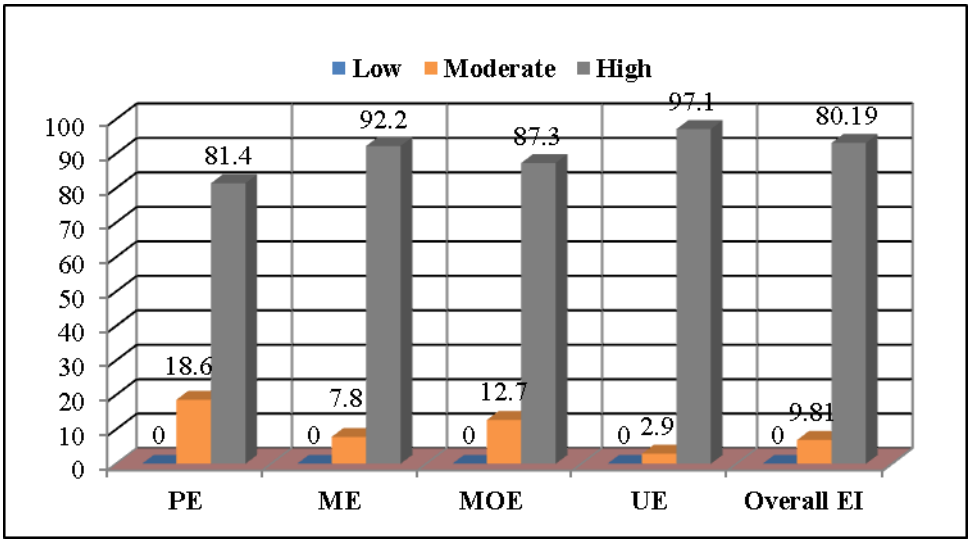

Figure 4.2. Percentages of Emotional Intelligence and Its Subscales

4.3.3. Learning Style Preferences of Prospective English Teachers

As for learning styles, the results of descriptive statistics (Table 4.3) revealed that the highest mean score (*M*=35.19, *SD*=7.45) in four original styles was received for AE learning style and the lowest mean score (*M*=27.41, *SD*=5.50) was obtained for CE learning style.

Table 4.3. Descriptive Statistics for Learning Styles

Learning Styles	*N*	*Mean*	*SD*
Concrete Experience	102	27.41	5.50
Reflective Observation	103	29.52	6.19
Active Conceptualization	102	28.26	6.85
Active Experimentation	102	35.19	7.45
AC-CE	102	.85	9.94
AE-RO	102	5.67	11.52

Furthermore, the results showed a higher mean score (*M*=5.67, *SD*=11.52) for AE-RO and a lower mean score (*M*=.85, *SD*=9.94) for AC-CE composite learning

styles, indicating that most of the participants favor active experimentation over reflective observation. Figure 4.3 diagrammatically shows the percentages for the four learning styles in the learning cycle and the two related composite styles.

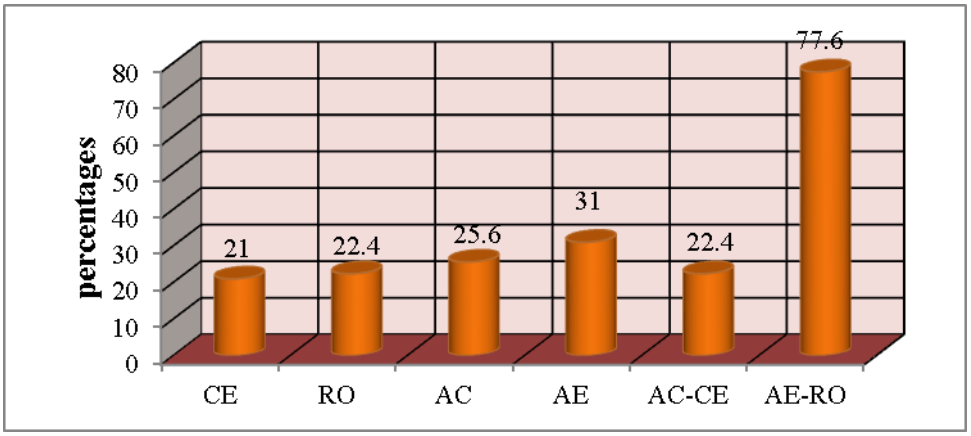

Figure 4.3. Percentages for prospective English Teachers' Learning Styles

4.4. Correlation between MI Profiles, EI Subscales and Learning Styles

Question 2. Is there any relationship among Multiple Intelligences and Emotional Intelligence profiles of the prospective English teachers and their Learning Styles?

The Pearson product-moment correlation was used to explore the relationship between perceived Multiple Intelligence (MI) profiles of prospective English teachers and their learning styles.

4.4.1. Correlation between Multiple Intelligences and Emotional Intelligence

The results, as shown in Table 4.4, indicated positive correlation between linguistic intelligence and perception of emotions, r (102) =.444, p<0.001, and managing one's own emotions, r (102) =.323, p<0.01, subscales of EI, and overall EI, r (102) =.323, p<0.01. Furthermore, logical mathematical intelligence correlated significantly with PE, r (102) =.273, p<0.01, ME, r (102) =.451, p<0.01, and MOE, r (102) =.232, p<0.01, and overall EI, r (102) =.358, p<0.01, whereas musical intelligence correlated positively with MOE, r (102) =.273, p<0.001, and UE, r (102) =.199, p<0.01. The results also showed positive correlation between kinesthetic intelligence and PE, r (102) =.368, p<0.01, and ME, r (102) =.399, p<0.01, and overall EI, r (102) =.330, p<0.01. There were also significant positive relationship between personal intelligences and EI. That is, interpersonal

intelligence correlated significantly with MOE, *r* (102) =.453, *p*<0.01, and UE, *r r* (102) =.343, *p*<0.01. Likewise, intrapersonal intelligence correlated significantly with MOE, *r* (102) =.271, *p*<0.01and UE, *r* (102) =.406, *p*<0.01 as well as ME, *r* ME *r* (102) =.310, *p*<0.01, and overall EI, ME *r* (102) =.397, *p*<0.01. The results further indicated significant correlation between spatial intelligence and PE, ME *r* (102) =.286, *p*<0.01, and ME, ME *r* (102) =.300, *p*<0.01, subscales of EI, while naturalist intelligence correlated significantly only with ME, ME *r* (102) =.238, *p*<0.01.

Table 4.4. Correlation between Multiple Intelligences and Emotional Intelligence

Intelligences	*N*	*Perception of Emotions*	*Managing Own Emotions*	*Managing Others' Emotions*	*Utilizing Emotions*	*Overall EI*
Linguistic	102	.444**	.323**	.084	-.019	.300**
Sig.(two-tailed)		.000	.000	.339	.967	.003
Mathematical	102	.273**	.451**	.232*	.031	.358**
Sig.(two-tailed)		.005	.000	.019	.755	.000
Musical	102	-.062	.094	.273**	.194	.171
Sig.(two-tailed)		.535	.347	.005	.050	.085
Kinesthetic	102	.368**	.399**	.107	.047	.330**
Sig.(two-tailed)		.000	.000	.286	.636	.001
Interpersonal	102	.021	.096	.453**	.343**	.310**
Sig.(two-tailed)		.836	.339	.000	.000	.002
Intrapersonal	102	.176	.310**	.271**	.406**	.397**
Sig.(two-tailed)		.077	.002	.006	.000	.000
Spatial	102	.286**	.300**	.054	.054	.248*
Sig.(two-tailed)		.004	.002	.591	.587	.012
Naturalist	102	.185	.238*	.126	-.055	.183
Sig.(two-tailed)		.063	.016	.208	.580	.065

*Significant at the 0.05 level.

**Significant at the 0.01 level.

4.4.2. Correlation between Emotional Intelligence and Learning Styles

The results of Pearson Product-moment Correlation Coefficients (Table 4.5) revealed that there was a negative significant correlation between PE and AC, *r* (102) =-.266, *p*<0.01, and PE and the composite subscale of AC-CE, *r* (102) =-.231, *p*<0.01. However, no correlation was found between ME, MOE, and UE subscales of EI and learning styles. There was also a significant relationship

between overall EI and AC, *r* (102) =-.204, *p*<0.01, and AC-CE composite learning style, *r* (122) =-.190, *p*<0.01.

Table 4.5. Correlation between Emotional Intelligence and Learning Styles

Intelligences	*N*	*CE*	*RO*	*AC*	*AE*	*AC-CE*	*AE-RO*
Perception of Emotions	102	.053	.032	-..284**	.112	-.231*	.055
Sig.(two-tailed)		.598	.747	.001	.263	.011	.583
Managing Own Emotions	102	-.032	.020	-.031	.012	-.004	-.003
Sig.(two-tailed)		.749	.840	.754	.903	.969	.976
	102						
Managing Others' Emotions	102	.011	-.129	-.047	.109	-.038	.140
Sig.(two-tailed)		.913	.195	.640	.276	.702	.160
Utilizing Emotions	102	-.014	-.170	-.077	.220*	-.045	.234*
Sig.(two-tailed)		.890	.087	.442	.026	.651	.018
Overall Emotional Intelligence	102	.006	-.079	-.204*	.148	-.190*	.138
		.951	.431	.004	.137	.035	.166

*Significant at the 0.05 level.

**Significant at the 0.01 level.

4.4.2. Correlation between Multiple Intelligences and Learning Styles

As for the correlation between MI profiles and learning styles, the results reported significant correlation between musical, interpersonal and intrapersonal intelligences and learning styles (Table 4.6). There was a negative correlation between musical intelligence and RO, *r* (102) =-.366, *p*<0.01, while positive correlations were found between musical intelligence and AE, *r* (102) =.219, *p*<0.05, and AE-RO, *r* (102) =.318, *p*<0.01. Interpersonal intelligence correlated negatively with RO, *r* (102) =-.254, *p*<0.01, but there were significant positive correlations between interpersonal intelligence and AC, *r* (102) =.199, *p*<0.05, AC-CE, *r* (102) =.206, *p*<0.05, and AE-RO, *r* (102) =.230, *p*<0.05. Likewise, intrapersonal intelligence negatively correlated with RO, *r* (102) =-.231, *p*<0.05, while intrapersonal intelligence correlated positively with the composite learning style of AE-RO, *r* (102) =.219, *p*<0.05. No significant relationship was observed between other intelligence types and learning styles.

Table 4.6.Correlation between Multiple Intelligences and Learning Styles

Intelligences	*N*	*CE*	*RO*	*AC*	*AE*	*AC-CE*	*AE-RO*
Linguistic	102	.085	.116	-.021	-.146	-.061	-.157
Sig.(two-tailed)		.397	.245	.836	.143	.541	.115
Logical/ mathematical	102	.003	-.009	.069	-.047	.046	-.026
Sig.(two-tailed)		.978	.932	.493	.640	.648	.798
Musical	102	.018	-.366**	.146	.219*	.091	.318**
Sig.(two-tailed)		.856	.000	.143	.021	.364	.001
Kinesthetic	102	-.084	.020	-.049	.114	.013	.063
Sig.(two-tailed)		.402	.843	.627	.256	.898	.531
Interpersonal	102	-.082	-.254*	.199*	.102	.206*	.230*
Sig.(two-tailed)		.414	.010	.028	.307	.016	.005
Intrapersonal	102	.042	-.231*	.019	.147	-.010	.219*
Sig.(two-tailed)		.675	.020	.850	.139	.919	.027
Spatial	102	.035	-.115	.040	.040	.008	.088
Sig.(two-tailed)		.728	.251	.688	.689	.933	.381
Naturalist	102	.100	-.031	.010	-.104	-.048	-.051
Sig.(two-tailed)		.320	.759	.922	.296	.630	.611

*Significant at the 0.05 level.

**Significant at the 0.01 level.

4.5. Multiple Intelligences, Emotional Intelligence, and Learning styles as predictors of Academic Achievement

Research Question3. How well do Multiple Intelligences, emotional intelligence, and Learning Styles of the prospective English teachers predict their academic achievement?

This section presents the results of data analysis regarding the relationship between Multiple Intelligence profiles, emotional intelligence, and learning styles of the prospective english teachers and their academic achievement. Multiple regression analysis was conducted to determine to what extent these variables affect overall academic achievement among the participants.

4.5.1. Multiple Intelligences as Predictors of Academic Achievement

Multiple stepwise-method regression analysis was conducted to determine the predictive power of Multiple Intelligences (MI) with respect to Grade Point Average (GPA) of the participants. The results were statistically significant for six subscales of MI (Table 4.7). *Linguistic intelligence*, $R2$=.33, F (1,100)= 50.90, p<0.05, *interpersonal intelligence*, $R2$=.20, F (2,99)= 58.92, p< 0.05, *logical/mathematical*

intelligence, *R2*= .05, *F* (3,98) = 47.53, *p*< 0.05), *kinesthetic intelligence,R2*=.04, *F* (4,97) = 42.91, *p*< 0.05), and *intrapersonal intelligence*,*R2*=.02,*F* (5,95) = 37.13, *p*< 0.05), and *musical intelligence*, *R2*=.01,*F* (6,95) = 30.54, explained a significant proportion of variance in language achievement.The six predictor variables explained 67% (*R2*=.670) of variance in the participants' academic achievement. This indicates a good model fit for the data.

Table 4.7. Multiple Intelligences as Predictors of Academic Achievement

						ANOVA		
Models	***Intelligences***	***N***	***R***	***R2***	***%***	***df***	***F***	***Sig.(2-tailed)***
1	Linguistic	102	.581	.337	33.7	1,100	50.90	.000
2	Linguistic Interpersonal	102	.737	.543	20.6	2,99	58.92	.000
3	Linguistic Interpersonal Mathematical	102	.770	.593	5.0	3.98	47.53	.000
4	Linguistic Interpersonal Mathematical kinesthetic	102	.799	.639	4.0	4,97	42.91	.000
5	Linguistic Interpersonal Mathematical Kinesthetic intrapersonal	102	.812	.659	2.0	5.96	37.13	.000
6	Linguistic Interpersonal Mathematical Kinesthetic Intrapersonal Musical	102	.819	.670	1.1	6,95	30.54	.000

The scrutiny of values for intelligences revealed that all six significant intelligences significantly predicted participants' achievement and had a linear relationship with academic achievement (Table 4.8). The prediction power of six intelligences were: linguistic intelligence, *β*=.47,t (95) = 7.14, *p*<0.05), interpersonal intelligence, *β*=-.36,t(95)=-5.75,*p*< 0.05), mathematical intelligence, *β*=.27, t(95)=2.74, *p*< 0.05), intrapersonal intelligence, *β*=-.24, t(95)= -3.73, *p*< 0.05), kinesthetic intelligence,*β*= .17, t(95) = 2.38, *p*< 0.05), and musical intelligence, *β*=-.15, t(95)= -2.03, *p*< 0.05). Furthermore, linguistic intelligence was the strongest predictor of the participants' academic achievement.

Table 4.8. Coefficients of Multiple Intelligences as Predictors of Academic Achievement

intelligences	*t*	*β*	*Sig.*
Linguistic	7.14	.47	.000
Interpersonal	-5.75	-.36	.000
Musical	-.2.03	-.15	.027
Mathematical	2.74	.27	.007
Kinesthetic	2.38	.17	.019
Intrapersonal	-3.73	-.24	.001

4.5.2. Emotional Intelligence as a Predictor of Academic Achievement

The results of multiple stepwise-method regression analysis were statistically significant for three subscales of EI. The significant subscales had a linear relationship with the participants' academic achievement. Perception of emotions, *β*= .56, t(95) = 6.92, *p*< 0.05), managing own emotions, *β*= .18, t(95) =3.21, *p*< 0.05), and utilization of emotions, *β*= -.45, t(95)= -5.60, *p*<0.05) significantly predicted academic achievement. An examination of the Beta weights (Table 4.9), the coefficients that indicate the magnitude of predictions for a variable, indicated that subscales of PE and UE were the strongest predictors of academic achievement because they had higher Beta weights than ME. However, the overall EI did not predict any variance in the participants' academic achievement.

Table 4.9. Coefficients of Emotional Intelligene as a Predictor of Academic Achievement

Variables	*Beta*	*t*	*Sig.*
Perception of Emotions	.563	6.92	.000
Managing own Emotions	.201	3.21	.040
Utilization of Emotions	-.456	-5.60	.000

The close examination of values for subscales of emotional intelligence revealed that the Perceptions ofEmotions, *R2*=.197, F (1,100) = 24.48, *p*< 0.05, Utilization of Emotions, *R2*=.193, F (2.99) = 30.35, *p*< 0.05), and Managing one's own Emotions, *R2*=.025, F (3,98) = 34.24, *p*< 0.05, dimensions of Emotional intelligence explained a significant proportion of variance in academic achievement (Grade Point Average) of the participants (Table 4.10). However,

there was no significant relationship between Managing Others' Emotions and GPA. The significant dimensions of EI accounted for 41.5% of variance observed in participants' GPA.

Table 4.10. Emotional Intelligence as a Predictor of GPA

					ANOVA			
Models	*Variables*	*N*	*R*	*R 2*	*%*	*df*	*F*	*Sig.(2-tailed)*
1	PE	102	.443	.197	19.7	1,100	24.48	.000
2	PE UE	102	.624	.390	19.3	2,99	31.63	.000
3	PE UE ME	102	.645	.415	2.5	3,98	34.24	.000

4.5.2. Learning Styles as Predictors of Academic Achievement

The standard multiple regression analysis was conducted to determine the predictive power of four original learning styles and the two composite learning styles in relation to participants' academic achievement. The findings revealed that, taken individually, all six learning styles, i.e. CE, $R2$= .049, $F(1,100)=5.25$, $p<0.05$), RO,$R2$= .045, $F(1,100)=5.96$, $p<0.05$), AC, $R2$= .043, $F(1,100) =5.08$, $P<0.05$), AE, $R2$= .049, $F(1,100)=5.91$, $p<0.05$), AC-CE, $R2$= .065, $F(1,100)=7.71$, $p<0.05$), AE-RO, $R2$= .075, $F(1,100)=8.69$, $p<0.05$, had small prediction power with respect to academic achievement(Table 4.11).

Table 4.11. Learning Styles as Predictors of Academic Achievement

				ANOVA			
Model	*Variables*	*N*	*R*	*R2*	*df*	*F*	*Sig.(2-tailed)*
1	CE	102	.222	.049	1,100	5.24	.021
2	RO	102	.214	.045	1,100	5.96	.014
3	AC	102	.208	.043	1,100	5.09	.029
4	AE	102	.222	.049	1,100	5.91	.013
5	AC-CE	102	.255	.065	1,100	7.74	.004
6	AE-RO	102	.274	.075	1,100	8.75	.003

The close examination of Beta weights indicated that all variables significantly predicted GPA (Table 4.12). The AE-RO was the strongest predictor of GPA, β= .27, $t(100)=3.21$, $p<0.05$) foolwed by AC-CE, β= .25, $t(100)=2.79$, $p<0.05$) was the second strongest variable. From the four original learning styles, the AE, β= .245, $t(100) =2.49$, $p<0.05$) and RO, β= .241, $t(100) =2.49$, $p<0.05$) were the third strongest predictors of academic achievement.

Table 4.12. Coefficients of Predictor Variables

Model	*Variables*	*Beta*	*t*	*Sig.*
1	CE	-.209	-2.29	.024
2	RO	-.241	-2.43	.016
3	AC	.207	2.25	.026
4	AE	.245	2.43	.016
5	AC_CE	.251	2.79	.006
6	AE-RO	.270	3.21	.004

To present the predictive power of the indicator variables within a model, multiple regression analysis was conducted. First, the four original learning styles were entered into the regression model. AC, β=.44, t(97)=2.25, p<.05, and AE, β=.45,t(117)= 2.34, p<.05, emerged as significant predictors of academic achievement (Table 4.13), explaining 13.5% of total variation in participants' academic achievement, ($R2$=.13.5, F(2,99) =5.63, p<.05). To provide further proof regarding the validity of the results, multiple regression analysis was carried out using Analysis of Moment Structures (AMOS) program. The same results obtained for AC (regression weight: .44) and AE (regression weight: .45) further confirmed that it was a good model fit for the data, explaining 13.5% of total variance in participants' grade point averages.

Table 4.13. Model fit for Learning Styles as Predictors of GPA

Model	*Variables*	*Beta*	*t*	*Sig.*
1	CE	.112	.610	.543
2	RO	.136	.683	.496
3	AC	.441	2.01	.048
4	AE	.434	2.03	.044

Likewise, the results of stepwise regression analysis (Table 4.14) for the relationship between the two composite learning styles and participants' GPA showed that both AC-CE, F(1,100)=8.705, p<0.05) and AE-RO, F(1,120)=7.606, p<0.05) learning styles greatly contributed to the prediction of GPA.

Table 4.14. Composite Learning Styles As Predictors of Academic Achievement

						ANOVA		
Models	***Variables***	***N***	***R***	***R 2***	***%***	***df***	***F***	***Sig.(2-tailed)***
1	AE -RO	102	.299	.089	8.9	1,100	6.52	.004
2	AE –RO AC-CE	102	.351	.123	3.4	2,99	6.21	.001

Additionally, the scrutiny of the beta weights (Table 4.15) revealed that the AE-RO composite learning style was strongest predictor of academic achievement

(t=2.98, *p*<0.05) than AC-CE (t=2.55, *p*<0.05), suggesting that most of the prospective English teachers prefer active experimentation over reflective observation. Considering the *R2* values in the stepwise method of regression analysis, i.e. *R2* .135 for the two original learning styles and the composite learning styles *R2*=.123, these significant predictors of GPA explain 25.8% of the variability in the participants' academic achievement. Therefore, it can be concluded that the predictive value of both original and composite learning styles are nearly the same, implying that learning styles have the potential power, even though relatively small, to explain the variability in the academic achievement of the prospective English teachers.

Table 4.15. Coefficients of Composite Learning Styles

Variables	*Beta*	*t*	*Sig.*
AE -RO	.245	2.98	.005
AC-CE	.227	2.55	.010

4.6.Levels of Academic Achievement and Multiple intelligence, Emotional Intelligence, and Learning Styles

Research Question 4. Do high, moderate and low language achievers differ in their Multiple Intelligences profiles, Emotional Intelligence, and learning styles preferences?

The results of analyses for 'high achievers' (*N* =44; 43.13 %), 'moderate achievers' (*N* = 42; 41.17 %), and 'low achievers' (*N* =16; 15.53%) were statistically significant in all subscales of MI. That is, as shown in Table 4.16, there were statistically significant differences between the participants' grade point averages and their linguistic intelligence, *F* (2,99) = 25.75,*p*< 0.05), logical/mathematical intelligence, *F* (2,99) = 11.66,p< 0.05), musical intelligence, *F* (2,99) = 15.94, *p*< 0.05), kinesthetic intelligence, *F* (2,99) = 9.65, *p*< 0.05), interpersonal intelligence, *F* (2,99) = 13.44,*p*< 0.05), intrapersonal intelligence,*F* (2,99) = 7.93, *p*< 0.05), spatial intelligence, *F* (2,99) = 5.27, *p*< 0.05), and naturalist intelligence, *F* (2,99) = 4.73, *p*< 0.05).

In order to determine whether there were significant differences between the groups by not simply relying on the ANOVA indexes, the Robust Tests (i.e., Welch and Brown-Forsythe Statistics) of equality of means were also checked. The test

indexes of robust tests of ANOVA also confirmed that there were statistically significant differences among the groups in relation to their MI profiles.

Table 4.16. Levels of Academic Achievement and MI Profiles

		Group Statistics			*ANOVA*			
GPA	***Intelligences***	***N***	***F***	***%***	***df***	***F***	***Sig.***	***η2***
High		44	33	46				
Moderate	Linguistic	42	24	33.5	2,99	25.57	.000	.34
Low		16	15	20.5				
High		44	26	46.5				
Moderate	Logical/Mathematical	42	17	30.5	2,99	11.66	.000	.19
Low		16	13	23.5				
High		44	26	74.3				
Moderate	Musical	42	7	20	2,99	15.94	.000	.25
Low		16	2	5.7				
High		44	13	31				
Moderate	Kinesthetic	42	7	27	2,99	9.65	.000	.18
Low		16	6	23				
High		44	42	46.7				
Moderate	Interpersonal	42	45	38.9	2,99	13.44	.000	.33
Low		16	13	14.14				
		44						
High		44	38	50.6				
Moderate	Intrapersonal	42	26	34.7	2,99	7.93	.001	.12
Low		16	11	14.7				
High		44	18	39				
Moderate	Spatial	42	16	35	2,99	5.27	.007	.11
Low		16	12	26				
High		44	12	30				
Moderate	Naturalist	42	19	47.5	2,99	4.73	.011	.09
Low		16	9	22.5				

Additionally, ‘Effect Size’ statistics (Cohen, 1988) based on the ‘Eta Square’ value (η2) revealed strong significant difference between the groups in subscales of linguistic, logical/mathematical, musical, kinesthetic, interpersonal intelligences (η2> 0.14), and moderate significant difference in intrapersonal, spatial and naturalist intelligences (η2< 0.14).

To determine which groups differed significantly from other(s), a Tukey post-hoc test was employed. The results, as shown in table Table 4.17,revealed that there were statistically significant differences among the ‘high’, ‘moderate’, and ‘low’ groups in linguistic intelligence, between high and low, and high and moderate groups in logical/mathematical intelligence, between high and low, and high and

moderate in musical intelligence, between high and low, and between low and moderate in Kinesthetic intelligence, between high and low and high and moderate in interpersonal intelligence, between high and moderate in intrapersonal intelligence, between high and low in spatial intelligence, and between high and low in naturalist intelligence.

Table 4. 17. Post hoc Multiple Comparisons for Levels of GPA and MI Profiles

	Tukey HSD	***Multiple Comparisons***			
Dependent Variable	*(I) GPA*	*(J) GPA*	*Mean Difference (I-J)*	*Std. Error*	*Sig.*
Linguistic	high	moderate	-12.347*	2.419	.000
		low	-21.330*	3.274	.000
	moderate	high	12.347*	2.419	.000
		low	-8.982*	3.295	.021
	low	high	21.330*	3.274	.000
		moderate	8.982*	3.295	.021
Logical/Mathematical	high	moderate	-6.772*	2.474	.020
		low	-15.733*	3.347	.000
	moderate	high	6.772*	2.474	.020
		low	-8.961*	3.369	.025
	low	high	15.733*	3.347	.000
		moderate	8.961*	3.369	.025
Musical	high	moderate	10.847*	1.980	.000
		low	8.705*	2.679	.004
	moderate	high	-10.847*	1.980	.000
		low	-2.143	2.696	.707
	low	high	-8.705*	2.679	.004
		moderate	2.143	2.696	.707
Kinesthetic	high	moderate	-3.247	1.749	.157
		low	-10.381*	2.367	.000
	moderate	high	3.247	1.749	.157
		low	-7.134*	2.382	.010
	low	high	10.381*	2.367	.000
		moderate	7.134*	2.382	.010
Interpersonal	high	moderate	9.239*	2.010	.000
		low	10.602*	2.720	.001
	moderate	high	-9.239*	2.010	.000
		low	1.363	2.737	.872
	low	high	-10.602*	2.720	.001
		moderate	-1.363	2.737	.872
Intrapersonal	high	moderate	4.381*	1.136	.001
		low	3.563	1.537	.058
	moderate	high	-4.381*	1.136	.001
		low	-.818	1.547	.857
	low	high	-3.563	1.537	.058
		moderate	.818	1.547	.857
Spatial	high	moderate	-1.527	2.484	.812
		low	-10.744*	3.362	.005
	moderate	high	1.527	2.484	.812
		low	-9.217*	3.383	.021
	low	high	10.744*	3.362	.005
		moderate	9.217*	3.383	.021
Naturalistic	high	moderate	-5.101	2.585	.124
		low	-10.199*	3.498	.012
	moderate	high	5.101	2.585	.124
		low	-5.098	3.520	.320
	low	high	10.199*	3.498	.012
		moderate	5.098	3.520	.320

The results of analyses for 'high achievers' (*N* =44; 43.13 %), 'moderate achievers' (*N* = 42; 41.17 %), and 'low achievers' (*N* =16; 15.53%), as shown in (Table 4.18) , revealed that there were statistically significant differences among the groups with respect to their perceptions of emotions, *F* (2,99) = 12.43, *p*< 0.05), managing own emotions, *F* (2,99) = 5.30, *p*< 0.05), and utilization of emotions, *F* (2,99)= 5.57, *p*< 0.05). However, no statistically significant difference was observed among groups regarding managing others' emotions subscale of EI, *F* (2, 99) = 1.38, *p*> 0.05), and overall EI, *F* (2, 99) = 1.34, *p*> 0.05).

Table 4.18. Levels of Academic Achievement and Emotional Intelligence

		Group Statistics			*ANOVA*			
Variables	***Level***	***N***	***F***	***%***	***df***	***F***	***Sig.***	***η2***
PE	high	44	30	36.1				
	moderate	42	39	47	2,99	12.43	.000	.21
	low	16	14	16.9				
ME	high	44	40	42.6				
	moderate	42	39	41.5	2,99	5.30	.006	.09
	low	16	15	16				
MoE	high	44	43	48.3				
	moderate	42	34	38.2	2,99	1.38	.254	.-
	low	16	12	13.5				
UE	high	44	44	44.4				
	moderate	42	41	41.4	2,99	5.57	.007	.10
	low	16	14	14.2				
Overall EI	high	44	41	43.2				
	moderate	42	40	42.1	2,99	1.34	.273	.-
	low	16	14	14.7				

The Robust Tests of Welch and Brown-Forsythe were also checked for subscales of EI. The test indexes for PE, ME and UE also confirmed the significant difference between groups in these three subscales. Likewise, the test indexes for MoE in Welch statistic (*F* = 1.77, *P* = 0.160) and Brown-Forsythe statistic (*F* = 1.47, *p* = 0.37) also confirmed that there was no significant difference among the groups in MoE subscale of EI. Moreover, the 'Effect Size' statistic (Cohen, 1988) based on the 'Eta Square' value (η2) revealed strong significant difference between the groups in subscale of PE (*η2*> 0.14), and moderate significant difference in

subscales of ME, and UE ($\eta 2 < 0.14$). Additionally, the results of Tukey post-hoc test (Table 4.19) revealed that there were statistically significant differences between all three groups in PE, between high and low , low and moderate in ME, and between high and low in UE.

Table 4.19. Post hoc Comparisons for Levels of Grade Point Average and Emotional Intelligence

	Tukey HSD	*Multiple Comparisons*			
Dependent Variable	***(I) GPA***	***(J) GPA***	***Mean Difference (I-J)***	***Std. Error***	***Sig.***
Perception of Emotions	high	moderate	-1.710*	.654	.028
		low	-4.341*	.885	.000
	moderate	high	1.710*	.654	.028
		low	-2.631*	.891	.011
	low	high	4.341*	.885	.000
		moderate	2.631*	.891	.011
Managing Own Emotions	high	moderate	-1.200	.755	.255
		low	-3.295*	1.022	.005
	moderate	high	1.200	.755	.255
		low	-2.095	1.028	.109
	low	high	3.295*	1.022	.005
		moderate	2.095	1.028	.109
Managing Others' Emotions	high	moderate	1.265	.764	.227
		low	.432	1.034	.908
	moderate	high	-1.265	.764	.227
		low	-.833	1.041	.703
	low	high	-.432	1.034	.908
		moderate	.833	1.041	.703
Utilization of Emotions	high	moderate	.834	.591	.339
		low	2.665*	.800	.003
	moderate	high	-.834	.591	.339
		low	1.830	.805	.064
	low	high	-2.665*	.800	.003
		moderate	-1.830	.805	.064

The results of analyses for 'high achievers' (N =44; 43.13 %), 'moderate achievers' (N = 42; 41.17 %), and 'low achievers' (N =16; 15.53%) reported significant differences among groups with respect to all subscales of learning styles (Table 4.20). There were statistically significant differences between groups in CE, F (2,99) = 5.44, $p < 0.05$), RO, F (2,99) = 3.86, $p < 0.05$), AC,F (2,99)= 3.71, $p < 0.05$),

AE, *F* (2,99) = 3.35, *P*< 0.05), AC-CE, *F* (2,99) = 3.60, *p*< 0.05), and AE-RO,*F* (2,99) = 3.45, *p*< 0.05).

Moreover, 'Effect Size' statistic (Cohen, 1988) based on the 'Eta Square' value (η2) demonstrated a strong significant difference among the groups in subscale of CE (*η2*> 0.14), and moderate significant differences in subscales of RO, AE, AC-RO and AE_CE (*η2*< 0.14), while there was a small significant difference among groups in subscale of AC (*η2*< 0.59).

Table 4.20. Levels of GPA and Learning Styles

Learning Styles	*Level*	*N*	*Mean*	*SD*	*df*	*F*	*Sig.*	*η2*
CE	high	44	26.25	6.195				
	moderate	42	27.98	4.392	2,99	5.44	.031	.14
	low	16	29.13	5.749				
RO	high	44	27.61	5.903				
	moderate	42	30.98	5.715	2,99	3.86	.024	.09
	low	16	30.94	7.132				
AC	high	44	30.05	6.985				
	moderate	42	26.81	6.197	2,99	3.71	.031	.02
	low	16	27.19	7.405				
AE	high	44	36.55	7.076				
	moderate	42	34.74	6.739	2,99	3.35	.039	.07
	low	16	32.63	9.660				
AC_CE	high	44	3.80	10.418				
	moderate	42	-1.17	8.914	2,99	3.60	.031	.10
	low	16	-1.94	9.588				
AE-RO	high	44	8.93	10.566				
	moderate	42	3.76	10.704	2,99	3.45	.036	.09
	low	16	1.69	14.254				

A Tukey post-hoc test was also run to determine which groups differed significantly from other(s). The results, shown in Table 4.21, indicated statistically significant differences between the 'high' group and the other two groups, i.e. 'moderate', and 'low' groups in CE, between high and moderate groups in RO, between high and moderate groups in AC, between high and low groups in AE,

between high and moderate groups in AC-CE, and between high and moderate, high and low in AE-RO.

Table 4.21. Post hoc Comparisons for Levels of GPA and Learning Styles

Tukey HSD			*Multiple Comparisons*		
Dependent Variable	***(I) GPA***	***(J) GPA***	***Mean Difference (I-J)***	***Std. Error***	***Sig.***
CE	high	moderate	-2.731*	1.194	.006
		low	-3.506*	1.665	.009
	moderate	high	2.731	1.194	.062
		low	-.776	1.665	.887
	low	high	3.506	1.665	.093
		moderate	.776	1.665	.887
RO	high	moderate	-3.615*	1.182	.008
		low	-3.120	1.648	.145
	moderate	high	3.615*	1.182	.008
		low	.496	1.648	.951
	low	high	3.120	1.648	.145
		moderate	-.496	1.648	.951
AC	high	moderate	3.673*	1.404	.027
		low	3.237	1.957	.227
	moderate	high	-3.673*	1.404	.027
		low	-.436	1.957	.973
	low	high	-3.237	1.957	.227
		moderate	.436	1.957	.973
AE	high	moderate	3.135	1.438	.079
		low	4.417*	2.005	.007
	moderate	high	-3.135	1.438	.079
		low	1.282	2.005	.799
	low	high	-4.417*	2.005	.007
		moderate	-1.282	2.005	.799
AC_CE	high	moderate	6.40385*	2.11656	.008
		low	6.74359	2.95141	.062
	moderate	high	-6.40385*	2.11656	.008
		low	.33974	2.95141	.993
	low	high	-6.74359	2.95141	.062
		moderate	-.33974	2.95141	.993
AE_RO	high	moderate	6.75000*	2.15845	.006
		low	7.53632*	3.00981	.036
	moderate	high	-6.75000*	2.15845	.006
		low	.78632	3.00981	.963
	low	high	-7.53632*	3.00981	.036
		moderate	-.78632	3.00981	.963

4.7. Learner Types

Descriptive statistics for learner types, Table 4.22, indicated that among the four learner types accommodators (44.1%) was the most preferred learning style followed by convergers (23.5%), assimilating style (16.7%), and diverging style (15.7%). These findings are in contrast with that of JilardiDamavandi et al., (2011) who reported that the most preferred learning style was converging (35.4%) followed by accommodating style (23.4%). However, in both studies assimilating and diverging styles were the third and fourth preferred learning styles.

Table 4.22. Descriptive Statistics for Learner Types

Learning Styles	*N*	*%*
Divergers	16	15.7
Assimilators	17	16.7
Convergers	24	23.5
Accommodators	45	44.1
Total	102	100

A one-way analysis of variance (ANOVA) was run to see if there is a difference between four learner types in relation to their academic achievement. The findings revealed a statistically significant difference between the four learner groups, $F(3, 98) = 4.25$, $p<.05$, with a moderate effect size ($\eta 2< .14$). The scrutiny of mean scores, Table 4.23, indicated that accommodators had the highest mean score ($M= 81.40$, $SD=7.73$) followed by covergers ($M=80.78$, $SD=7.63$), assimilators ($M=79.47$, $SD=7.03$), and divergers ($M=78.50$, $SD=8.98$).

Table 4.23. Learner Types and Academic Achievement

		Group Statistics		*ANOVA*			
Learner Types	*N*	*Mean*	*SD*	*df*	*F*	*Sig.*	*η2*
Divergers	16	78.50	8.98	3,98	4.25	.007	.104
Assimilators	17	79.47	7.03				
Convergers	24	80.78	7.63				
Accommodators	45	81.40	7.73				
Total	102						

Additionally, Tukey's post-hoc multiple comparisons, Table 4.24, further revealed significant mean difference between divergers and convergers. Indeed, as seen in Table 4.23 above, convergers had higher mean scores than divergers.

Table 4.24. Post hoc Comparisons for Learners Types and GPA

		Tukey HSD Multiple Comparisons			
Dependent Variable	***(I) Learner Types***	***(J) Learner Types***	***Mean Difference (I-J)***	***Std. Error***	***Sig.***
GPA	divergers	assimilators	-.15298	.09624	.388
		convergers	-.33726*	.09124	.002
		accommodators	-.15947	.08309	.226
	assimilators	divergers	.15298	.09624	.388
		convergers	-.18427	.09011	.178
		accommodators	-.00649	.08184	1.000
	convergers	divergers	.33726*	.09124	.002
		assimilators	.18427	.09011	.178
		accommodators	.17779	.07590	.094
	accommodators	divergers	.15947	.08309	.226
		assimilators	.00649	.08184	1.000
		convergers	-.17779	.07590	.094

Finally, the results, as determined by Chi Square Test, revealed a significant difference, $\chi 2(6, N=102) = 14.90$, $p<0.05$, between high, moderate and low achievers in relation to their preferred learning types. The crosstabulation results, Table 4.25, also indicated that the highest percentages of the high achievers were either accommodators (40.9%) or convergers (36.4%). The highest percentages of moderate achievers (47.6%) were also accommodators followed by assimilators (21.4%). Furthermore, most of low achievers were either accommodators or divergers. These findings support the link between kniesthetic intelligence and accommodators, and learning styles and MI theory.

Table 4.25. Crosstabulation for the Relationship between Achievement Level and Learner Types

GPA	***Divergers***		***Assimilators***		***Convergers***		***Accommodators***		***Total***	
	N	***%***	***N***	***%***	***N***	***%***	***N***	***%***	***N***	***%***
High	5	11.4	5	11.4	16	36.4	18	40.9	44	43.1
Moderate	6	14.3	9	21.4	7	16.7	20	47.6	42	41.2
Low	5	31.3	3	18.8	1	6.3	7	43.8	16	15.7
Total	16	15.7	17	16.7	24	23.5	48	41.4	102	100.0

4.8. Demographic factors, Multiple Intelligence, Emotional Intelligence, and Learning Styles

Research Question *5*. Do demographic factors such as age and gender play any role in prospective English teachers' perceptions of MI profiles, emotional intelligence, and learning styles?

This section offers the results for the relationship between demographic factors such as gender and age. The purpose was to determine whether these individual differences variables affect prospective English teachers' perceptions of the variables under investigation.

4.8.1. The Relationship between Gender and Multiple Intelligences

An independent Samples T-test was conducted to find out the relationship between gender factor on one hand and multiple intelligences, emotional intelligence, and learning styles preferences on the other. The results of descriptive statistics revealed that the highest mean scores for linguistic, logical/mathematical, kinesthetic, spatial, and naturalist intelligences were found in males group. Moreover, the results of independent samples t-test (Table 4.26) showed statistically significant differences between groups in these intelligences, $t(100)= 4.30$, $p<0.05$ for linguistic intelligence, $t\ (100) =4.81$, $p<0.05$ for logical /mathematical, $t(100) =4.34$, $p<0.05$ for kinesthetic intelligence, $t(100) = 3.12$, $p<0.05$ for spatial intelligence, and $t\ (100)=4.27$, $p<0.05$ for naturalist intelligence. Indeed, males had higher mean scores in all significant variables. The results further indicated that although the highest mean scores for musical, interpersonal, and intrapersonal intelligences were observed in females group, no significant differences were found between male and female groups.

Table 4.26. Relationship between Gender and MI profiles

Variables	*Gender*	*N*	*Mean*	*SD*	*t*	*df*	*Sig. (2-tailed*
Linguistic	male	26	74,92	10,530	4.30	100	.000
	female	76	62,58	13,248			
mathematical	male	26	59,50	9,836	4.81	100	.000
	female	76	48,04	12,177			
Musical	male	26	36,04	10,062	-1.32	100	.188
	female	76	39,17	10,520			
Kinesthetic	male	26	40,88	9,771	4.34	100	.000
	female	76	31,84	7,128			
Interpersonal	male	26	65,08	9,757	-.528	100	.599
	female	76	66,33	10,658			
Intrapersonal	male	26	29,00	5,215	-.669	100	.505
	female	76	29,86	5,761			
Spatial	male	26	48,96	12,187	3.12	100	.002

	female	76	40,80	11,269			
Naturalist	male	26	44,62	11,434	4.27	100	.000
	female	76	33,47	11,491			

4.8.2. The Relationship between Gender and Emotional Intelligence

The results of Independent Samples T-test reported significant differences between male and female groups in PE, *t* (100) = 2.74, *p*<.05, and ME, *t* (100) = 2.11, *p*<.05 dimensions of emotional intelligences with males having higher mean scores than females. Further scrutiny of the results (Table 4.27) revealed that the highest mean scores for MoE and UE were observed in female group. On the whole, males had higher mean scores in overall EI (*M*=131.81, *SD*=11.80) than females (*M*=128.80, *SD*=8.83).

Table 4.27. Relationship between Gender and Emotional Intelligence

Variables	*Gender*	*N*	*Mean*	*SD*	*t*	*df*	*Sig. (2-tailed*
PE	male	26	38,31	3.90	2.74	100	.007
	female	76	36,28	3.00			
ME	male	26	38,00	4.37	2.11	100	.037
	female	76	36,28	3.28			
MoE	male	26	31,33	4.35	-.69	100	.945
	female	76	31.38	3.27			
UE	male	26	24.12	2.98	-1.24	100	.217
	female	76	24.92	2.80			
	male	26	131.81	11.80	1.36	100	.174
Overall EI	female	76	128.80	8.83			

4.8.3. The Relationship between Gender and Learning Styles

The results of Independent Samples T-test demonstrated that there were significant differences between groups in relation to their learning styles (Table 4.28). The participants differed significantly in the RO, *t* (100) = 2.53, *p*<.05, and AE-RO, *t* (100) = -2.11, *p*<.05, learning styles with a small effect size. Moreover, the male group had higher mean score for RO, while female group scored higher in AE, suggesting that females are more interested in risk taking and 'hands on' activities than males. Females had also higher mean scores in CE, AC, AE and AE-RO, whereas males had higher score in AC-CE learning styles were received by females. In other words, considering the four original learning styles, females prefer concrete experience, active conceptualization, and active experimentation

in learing an L2 while males prefer reflective observation. However, on the whole male participants prefer active conceptualization over concrete experience and active experimentation over reflective observation.

Table 4. 28. The Relationship between Gender and Learning Styles

Variables	*Gender*	*N*	*Mean*	*SD*	*t*	*df*	*Sig. (2-tailed*
CE	male	26	26.65	5.38	-.812	100	.418
	female	76	27.67	5.55			
RO	male	26	32.12	6.33	2.53	100	.013
	female	76	28.63	5.93			
AC	male	26	27.81	6.84	-.392	100	.696
	female	76	28.42	6.89			
AE	male	26	33.73	8.90	-1.15	100	.251
	female	76	35.68	6.88			
AC_CE	male	26	1.15	10.12	.178	100	.859
	female	76	.75	9.94			
AE_RO	male	26	1.62	13.06	-2.11	100	.037
	female	76	7.05	10.69			

4.8.4. Relationship between Age and Multiple Intelligences

The results of One-way ANOVA reported statistically no significant difference between age groups regarding multiple intelligences profiles (Table 4.29). However, the scrutiny of results reported different mean scores for the groups. The highest mean scores for six intelligences, i.e. musical, kinesthetic, interpersonal, intrapersonal, spatial, and naturalist intelligences werte observed in ‘24-27’ age group, while the highest mean score for linguistic intelligence(*M*=65.92,*SD*=13.86) and logical/mathematical intelligence (*M*=51.28,*SD*=12.49) was observed in ‘18-23’ age group. Put another way, the lowest mean scores for linguistic and logical/mathematical intelligences were observed in ‘24-27’ age group, whereas the lowest mean scores for musical, kinaesthetic, interpersonal, intrapersonal, spatial, and naturalist intelligences were obtained for ‘18-23’ age group.

Table 4.29. Relationship Between Age and MI profiles

Variables	*Age*	*N*	*Mean*	*SD*
Linguistic	18-23	97	65.92	13.86
	24-27	5	62.00	9.53
Logical/ mathematical	18-23	97	51.28	12.49
	24-27	5	44.80	15.02
Musical	18-23	97	38.36	10.61

	24-27	5	38.60	7.33
Kinesthetic	18-23	97	34.08	8.50
	24-27	5	35.40	14.32
Interpersonal	18-23	97	65.92	10.49
	24-27	5	67.80	9.28
Intrapersonal	18-23	97	29.51	5.59
	24-27	5	32.20	6.09
Spatial	18-23	97	42.68	11.97
	24-27	5	46.80	13.10
Naturalist	18-23	97	36.06	12.47
	24-27	5	41.20	11.32

4.8.5. Relationship between Age and Emotional Intelligence

The results of One-way ANOVA indicated that there were statistically no significant differences between age groups with respect to Emotional intelligence profiles. However, the close examination of descriptive results revealed that the highest mean scores for ME, MoE,UE, and overall EI were received by '18-23' age group, while the highest mean score for PE (*M*=36.80, *SD*=4.81) was observed in '24-27' age group (Table 4.30). On the whole, younger age group reported higher levels of emotional intelligence.

Table 4.30. Relationship Between Age and EI

Variables	*Academic Level*	*N*	*Mean*	*SD*
PE	18-23	97	36.79	3.30
	24-27	5	36.80	4.81
ME	18-23	97	36.72	3.70
	24-27	5	36.60	2.40
MoE	18-23	97	31.35	3.63
	24-27	5	31.20	1.48
UE	18-23	97	24.75	2.90
	24-27	5	24.00	1.73
Overall EI	18-23	97	129.62	9.82
	24-27	5	128.60	7.63

4.8.6. Relationship between Age and Learning Styles

The results of One-way ANOVA demonstrated no significant differences between age groups and learning. However, the scrutiny of the results showed that the groups had different mean scores. The highest mean score for CE, RO, AE, AC, and AE-RO learning styles were ascribed to '18-23' age group (Table 4.31). Finally, the highest mean score for AC-CE learning style was observed in '24-27'

age group. The findings indicate that young learners are more likely to build on their learning styles than the other group.

Table 4.31. Relationship Between Age and Learning styles

Variables	*Gender*	*N*	*Mean*	*SD*
Concrete Experience	18-23	97	27.33	5.51
	24-27	5	29.00	5.61
Reflective Observation	18-23	97	29.39	6.28
	24-27	5	32.00	3.93
Active Conceptualization	18-23	97	28.52	6.83
	24-27	5	23.40	5.72
Active Experimentation	18-23	97	35.20	7.38
	24-27	5	35.00	9.74
AC-CE	18-23	97	1.19	10.04
	24-27	5	-5.60	4.15
AE-RO	18-23	97	5.80	11.60
	24-27	5	3.00	10.55

4.9. Qualitative Data Analysis

The qualitative data for the participants were analyzed within the general framework of data analysis addressed in chapter three of the study. From the total pool of the responses only those which were within the scope of the study were chosen and others were not included in the study. The responses to the first question are given in Table 4.32 below. The findings indicated that the participants' dominant intelligences are linguistic and interpersonal.

Table 4.32. Qualitative Data Results for Intelligence Types

Multiple intelligences	*F*	*%*
Linguistic	10	66.66
mathematical	6	40
Musical	7	46.66
Kinesthetic	6	40
Interpersonal	9	60
Intrapersonal	3	20
Spatial	1	6.66
Naturalist	-	-
Emotional intelligence	8	53.33

Question 2:

The of results of analysis for the second question revealed that most of the participants rated multiple intelligences (46.66%) and learning styles (40%) as the factors most influential in their academic achievement, while only two students (13.33%) rated emotional intelligences as a factor affecting their academic achievement.

Questions3.

As for the third question, some of the participants did not answer to this part. The responses of those who answered were either short sentences or phrases. They were also codified in order to be reported quantitatively. The summary of the responses received are given below:

1. Learning by doing, inductive
2. Deductive,
3. Risk taking, extraversion
4. Inductive,
5. I learn very well by learning theories and approaches
6. I learn better through watching and thinking
7. I am field independent
8. Problem solving
9. I learn through experience
10. Role playing, kinethetic

The answers were analyzed based on the framework of the data analysis put forward in chapter three. The careful scrutiny of the responses for the third question revealed that all these learning styles and preferences can be addressed within experiential learning theory framework since most respondents seemed to enjoy ‘hand on’ activities, problem solving, watching , thinking and etc. The findings indicate that learning styles are at work in academic achievement of the prospective English teachers, and that L2 learners still value their learning styles and use them in the higer levels of professional achievement. As it was shown in results section, most of successful language learners, i.e. high achievers, were accommodators and convergers. The results of qualitative data analysis also support this because nearly 80% of the participants’ preferred styles fall under

accommodating learning style. Therefore, it seems reasonable to claim that most of these prospective English teachers' needs can be addressed and catered to within Kolb's learning style framework. Therefore, as far as academic achievement concerned, teachers and instructors should recognize and assess their students' learning preferences at teacher education programs on the hope for enhanced professional achievement and training more competent teachers.

4.10. Summary of the Basic Findings

This section briefly offers the summary of the main findings of the dissertation. The findings were given based on the order of the research questions and data analysis procedure. Table 4.33 indicates the correlation between MI profiles, emotional intelligence, and learning styles as the three main independent variables apart from demograghic variables. The predictive power of the indicator variables were given in Table 4.34, and information regarding the difference between levels of academic achievement, i.e. the participants' grade point averages, in relation to MI profiles, emotional intelligence, and learning styles were given in table 4.35 below. It should be noted that findings related to the first research question were not given here since they have been presented in section 4.1 of this chapter.

Table 4.33. Correlation between Multiple Intelligences, Emotional Intelligence, and Learning Styles

Multiple Intelligences	*PE*	*ME*	*MoE*	*UE*	*EI*	*CE*	*RO*	*AC*	*AE*	*AC-CE*	*AE-RO*
Linguistic	+	+	-	-	+	-	-	-	-	-	-
Mathematical	+	+	+	-	+	-	-	-	-	-	-
Musical	-	-	+	+	+	-	+	-	+	-	+
Kinesthetic	+	+	-	-	+	-	-	-	-	-	-
Interpersonal	-	-	+	+	+	-	+	+	-	+	+
Intrapersonal	-	+	+	+	+	-	+	-	-	-	+
Spatial	+	+	-	-	-	-	-	-	-	-	-
Naturalist	-	+	-	-	-	-	-	-	-	-	-
	Perception of Emotions					-	-	+	-	+	-
Emotional Intelligence	Managing Own Emotions					-	-	-	-	-	-
	Managing Others' Emotions					-	-	-	-	-	-
	Utilization of Emotions					-	-	-	-	-	-

Note: '+' indicates significant correlation and '-' indicates insignificant correlation among the factors.

Table 4.34. Multiple Intelligences, Emotional Intelligence, and Learning Styles As Predictors of Academic Acievement

Variables	*Predictors*	*R2*	*%*
Multiple intelligences	Linguistic Interpersonal Mathematical Kinesthetic Intrapersonal Musical	.670	67
Emotional intelligence	Perception of Emotions Utilization of Emotions Managing own Emotions	.415	41.5
Learning styles	AC, AE AC-CE, AE-RO	.258	25.8

Table 4.35. The relationship Among Levels of Academic Achievement and Multiple Intelligences, Emotional Intelligence, and Learning styles

Variables	*GPA level*	*Dominant Dimensions*
Multiple Intelligence	High	Linguistic Mathematical Kinesthetic Spatial intrapersonal Musical interpersonal
	Moderate	Higher naturalist intelligence and moderate musical, interpersonal, and intrapersonal intelligences
	low	Lower levels in all intelligence types
Emotional Intelligence	High	Higher levels of UE, MoE, ME and overall EI
	Moderate	Moderate level in Moderate level of UE
	Low	Lower emotional intelligence in all dimensions
Learning Styles	High	Active Conceptualization Active Experimentation AC-CE AE-RO
	Moderate	Reflective Observation
	Low	Concrete Experience

Additionally, gender differences were found to be effective in multiple intelligence profiles, perception of emotions and managing one's own emotions dimensions of Emotional Intelligence, and RO and AE-RO learning styles. However, no significant difference was found between age groups regarding the participants' multiple intelligence profiles, emotional intelligence, and leartning styles preferences.

4.11. Discussion

The findings of the present research study were presented in this section in order to provide answers to the research questions raised in section 1.7 of the study. The findings were presented in the order of research questions and with due attention to the variables measured in the study. It should be noted that as the results of descriptive statistics (research question one) were discussed in secon 4.1 of the study, the following section will begin with research question 2.

The findings indicated a significant relationship between interpersonal and managing other's emotions on one hand and intrapersonal intelligence, managing one's own emotions aand other's emotions and utilization of these emotions to accomplish learning tasks on the other. Interestingly, all intelligence types are linked with EI in some dimensions although there is no one to one correspondence between MI theory and EI. Furthermore, linguistic, logical/mathematical, musical, kinesthetic, interpersonal, intrapersonal intelligences correlated with overall EI:

- Linguistic intellience correlated with PE, ME, and overall EI
- Mathematical intelligence correlated with, PE, ME, MoE and overall EI
- Musical intelligence correlated with MoE, UE and overall EI
- Kinethetic intelligence correlated with PE, ME, and overall EI
- Interpersonal intelligence correlated with MoE, UE and overall EI
- Intrapersonal intelligence correlated with ME, MoE, UE and overall EI
- Spatial intelligence correlated with PE and ME
- Naturalist intelligence correlated with ME

These findings imply that in L2 achivement , a person with high levels of MI profile may sometimes need to build on his/her emotions in order to overcome affective barriers when performing language related tasks. Shearer (2006b) maintains that

> *"the ability to recognize the feelings of other people is primarily a function of one's Interpersonal intelligence that is facilitated by Linguistic skill. Skill in managing relationships with other people is also a factor in one's overall mood and emotional well-being"* (*p.10).*

Identifying these emotions, therefore, is crucial to use one's biopotential abilities or intelligences in all areas of language achievement since language learning is emotionally driven (Aki, 2006; Bown & White, 2010; Imai, 2010; López, 2011). There is now a significant body of research (Abdolvahabi, Bagheri, & Kioumarsi,2012; Alavinia, & AghaAlikhani, 2014; Alavinia, Bonyadi, &Razavi, N,

2012; Ergün, 2011; Prieto, 2010; Razavi, 2014; Sucaramona, 2012) that indicates that emotional intelligence has a key role in learning an L2, academic achievement, teaching styles (Akbari & Tavassoli, 2011), and teacher burnout (Momenian, 2009).

Unfortunately, the literature on the relationship between multiple intelligence theory and emotional intelligence seems to be considerably lacking. To the best knowledge of the researcher, only Shearer (2006b) has investigated the relationship between the constructs. Shearer (2006b) investigated the relationship between multiple intelligence theory and emotional intelligence. His findings showed very low to moderate correlations theoretically consistent with MI theory. He concluded that emotional intelligence can be properly subsumed as a subset of the "personal intelligences", i.e. Intrapersonal and Interpersonal intelligences. The findings of the prsesnt study corraborate Shearer's (2006b) findings and suggest that emotional intelligence and personal intelligences in MI theory are interrelated. However, emotional intelligence is specifically linked with affective aspects of language and academic achievement while MI profiles are very effective in information processing. That's why emotional intelligence theory cannot be readily integrated with MI theory.

Therefore, the dearth of evidence in the literature may be attributed to the conceptualization of the EI construct as a subset of MI theory and that most researchers assume that EI lies at the intersection of interpersonal and intrapersonal intelligences (Akbari & Tavassoli, 2011; Goleman, 1995, 2001; 1998a, 1998b; Salovey& Mayer, 1990, 2005; Salovey& Grewal, 2005). Goleman (2000), for instance, argues that Emotional Intelligence (EI) concerns with the ability to identify and monitor emotions in ourselves and others. In the same vein, Salovey and Mayer (1990) refer to EI or emotional Quotient (EQ) as "the ability to monitor one's own and other's feelings, to discriminate among them and to use this information to guide one's thinking and actions" (p.185).

The findings of the present study also indicated that there was a significant negative correlation among musical, interpersonal, and intrapersonal intelligences and learning styles:

- Musicall intelligence correlated significantly with RO, AE, and AE-R0.

- Interpersonal intelligence correlated significantly with RO, AC, AC-CE and AE-RO.
- Intrapersonal intelligence correlated significantly with RO and AE-RO.

Both inter and intrapersonal intelligences correlated negatively with RO. However, interpersonal intelligence correlated positively with AC, and the two composite styles, suggesting that learners with interpersonal intelligence prefer to actively take part in performing tasks and provide other solutions to the problems based on what they have already learned and their experiences. Interestingly, intrapersonal intelligence correlated positively with AE-RO learning style which means that self-awareness creates self-confidence and self-reliance in learners in language achievement and encourages them to play an active role in performing tasks.

As with the emotional intelligence, the literature on the relationship between MI theory and learning styles is scarce since learner styles are often confused with multiple intelligences in the literature while they are totally independent constructs and cannot be used interchangeably (Prashnig, 2005; Gardner, 2013, 2014). Tee, Widad and Yee (2009), for instance, found that there was a significant relationship between KLSI and musical intelligence. Moreover, the results showed that majority of the students were found to be divergers with high Intrapersonal Intelligence and lower Verbal-Linguistic intelligence. Seifoori and Zarei (2011) investigated the relationship between MI theory and learning styles among English majors (N=94) at Islamic Azad University-Tabriz Branch. Kinesthetic learning style and spatial intelligence were found to be the most dominant factors among Iranian university students. Regarding kinesthetic learnin style, their findings are consistent with the current study since *accomodator, i.e. preference for doing and acting,* was the dominant learning style in this study. However*,* their finding is in contrast with those of the current study regarding the dominant intelligence which was found to be interpersonal intelligence in this study.

The implications for L2 teaching and teacher education programs are that the interplay between personal intelligences' i.e. interpersonal and intrapersonal intelligences, learning styles and the resulting self-confidence can lead to linguistic confidence. Linguistic competence will, in turn, serve as a motivational factor to develop speaking skills, willingness to communicate in the language and ultimately successful language achievement (MacIntyre & Charos, 1996). Moreover, the

correlation between musical intelligence and active learning styles implies that those who prefer active experimentation to concrete experience and active conceptualization to reflective observation are very strong at both perceiving and processing language sounds, might have better pronunciation, and are able to use their musical abilities in a best possible way.

The present study also revealed a significant relationship between perception of emotions dimension of EI, CE, and AC-CE learning styles, suggesting that although the linkage between EI is not strong, emotional intelligence can exert influence on learning styles. Indeed, the negative correlation between perception of emotions and CE implies that the participants are unable to recognize their own emotions when they perform L2 learning tasks that require them to involve fully and openly in new experiences. Besides, they cannot create concepts based on logic and theories, and perhaps are unable to generate different viewpoints during problem solving tasks.

A significant body of research (Aliakbari & Abol-nejadian, 2013; Chirayath & Elizabeth, 2013; Johnson, 2008; Mahasneh, 2013; Shatalebi, Sharifi, Saeedian, &Javadi, 2012) has been dedicated to examine the relationship between emotional intelligence (EI) and learning styles. The findings of the present research study run counter to Jaeger (2001) and Suliman (2010). Using Emotional Quotient Inventory (Bar-On, 1997) and Kolb's Learning Styles Inventory, Jaeger (2001) investigated the relationship between emotional intelligence and learning styles on an American graduate sample. However, there was no significant relationship between EI and learning styles of the participants. Similar results were found by Suliman (2010) and Johnson (2008).

The findings of the present study are in congruent with Chirayath & Elizabeth (2013) who reported that even though there was no strong relationship between EI and learning styles, emotional intelligence obviously influenced learning styles. They concluded that EI could be regarded as a significant factor which can help determine the effectiveness of learning styles and learning achievement. Moreover, the development of EI among learners, according to Chirayath and Elizabeth (2013), could increase the intensity and depth of their learning experience among students.

In the same vein, Aliakbari & Abol-nejadian (2013) examined the relationship between EI and learning styles of university students (N=60) in Iranian context. Their findings revealed that the participants achieved the highest score in Optimism/Mood Regulation sub-scale of emotional intelligence. Furthermore, EI correlated significantly with the participants preferred learning styles, i.e. Sensing, Feeling, Judging, and Extroversion. Mahasneh (2013) also examined the relationship between EI and learning styles to find out if learning styles predict emotional intelligence among Jordanian university students. His findings indicated that there was a significant positive correlation between the dimensions of EI and learning styles. Moreover, learning styles significantly contributed to the prediction of all sub-dimensions of emotional intelligence.

Shatalebi et al., (2012) examined the relationship between EI and learning styles among B.A., M.A., and PhD. students in an Iranian context. The results revealed that only intrapersonal relationships, impulse control, and happiness were found to be compatible with learning style. There was no relationship between other components of EI and Divergent, Convergent, Adaptive, and Attractive learning styles. Considering the fact that emotional intelligence concerns one's ability while learning has to do with preferences, they conclude that lack of relationship between these two variables is justified. However, even though the lack of relationship or existence of a weak relationship between EI and learning styles can be justified by their conceptualization as being product oriented and process-oriented, respectively. It is without dispute that, taken individually, both constructs haven a important role in successful l2 learning and academic achievement. Therefore, the lack of relationship between the constructs may be attributed to other factors such as age, gender, and some other affective and personality factors. Further research is needed to approach the issue from varying perspectives.

The findings of the present research study also revealed that linguistic, logical/mathematical, kinesthetic, interpersonal, intrapersonal, and musical intelligences had significant predictive role in prospective English teachers' academic achievement. As seen in the results section (section 4.5.1), these significant factors explained 67% of variance in the participants' academic achievement with linguistic intelligence as the strongest predictor of academic

achivement followed by interpersonal intelligence. These findings are almost in congruent with the other studies regarding the relationship between MI profiles and language achievement. It deserves noting here that many researchers investigated the relationship between MI theory and L2 learning from different perspectives which relate to L2 learners and prospective teachers' academic achievement in one way or another. Put another way, researchers in the field of SLA have studied the relationship between language learners' MI profiles and various areas of language achievement including four language skills, pronunciation, grammatical structures, vocabulary learning, curriculum development, teacher training and academic achievement. Notwithstanding the contradictory findings, from these research studies on the effect of MIT on L2 achievement there has grown a significant body of evidence that ensure that MI theory has implications for second language teaching and learning.

Research into the field of SLA has proved the relationship between verbal-linguistic intelligence and academic achievement. In their study of the relationship among EFL learners' (*N*=55) speech anxiety, Emotional Intelligence (EI), and Linguistic Intelligence (LI), Mohammadi and Mousalou (2012) found that there was a significant negative correlation between linguistic intelligence and speech anxiety, indicating that speech anxiety tends to decrease as the level of Linguistic Intelligence increases. They concluded that higher levels of LI can decrease speech anxiety and this, in turn, will help students increase their performance in language communication classes. Furthermore, Skourdi and Rahimi (2010) studied EI and linguistic intelligence in relation to vocabulary learning among junior Iranian university students (*N*=66). Their findings indicated a significant positive relationship between linguistic intelligence and and vocabulary knowledge and that "Linguistic Intelligence makes stronger unique contribution to explaining the receptive size of vocabulary and it is a better predictor of vocabulary learning knowledge" (p.16).

The findings of this study were also in cinsistence with those of Hou (2010) who studied the relationship between multiple intelligence theory and English performance of Taiwanese EFL college students (N= 2545) in relation to their listening, reading and their total scores, i.e. language learning performance. The findings revealed that from the three intelligences that significantly affect

participants' listening scores, i.e. musical, verbal/linguistic, and naturalist intelligences, musical intelligence was the first most significant factor and verbal/linguistic intelligence was the second most significant factor followed by naturalist intelligence as the third one. Similarly, the results for the relationship between multiple intelligences and listening scores reported that the same three intelligences were related to students' English reading scores with the only difference that, compared with the other intelligences, the linguistic intelligence had the most significant effect on the participants' scores. As for the relationship between multiple intelligences and respondents' total English language performance, the scores obtained were the same as that of listening skill. That is, the linguistic intelligence was the second most significant factor that affected participants' total English language performance scores.

Unlike Mohammadi and Mousalou (2012), and Skourdi and Rahimi (2010), other studies reported that linguistic intelligence had no effect on foreign language learners' academic performance and their ultimate attainment in learning English as a foreign language. For instance, Sarıcaoğlu and Arikan (2009) found that linguistic intelligence was found to be the second least common type of intelligence while logical mathematical was found to be the dominant intelligence.This may be attributed to, as the researchers maintain, the Turkish education system which discourages active involvement of learners in learnin an L2. Consequently, contrary to their expectation, they couldn't find any significant relationship between L2 learners' linguistic intelligence and their academic achievement.

Musical intelligence and its relation to academic achievement, success in other areas and SLA has been subject of intensive inquiry during the last three decades. A study by Hou (2010) revealed that musical/rhythmic intelligence was the most significant factor for listening skill and total English performance while it was the second significant factor for reading skill. Similar results were found by Hajhashemi et al., (2012). Using a standardized reading proficiency TOEFL® test they examined the relationship between multiple intelligences (MI) and reading proficiency of Iranian EFL pre-university students. Their findings showed a statistically positive significant difference in the musical intelligence scores of the low achievers (*N*=67) in comparison with high achievers (*N*=61) and that the low

achievers received the highest mean scores in musical intelligence while the high achievers had the lowest scores. In other words, high achievers had lower musical intelligence, indicating that “better readers may be less intelligent musically”. Striking insights were obtained by Milovanov (2009), Milovanov and Tervaniemi (2008, 2009, 2010, 2011) who found a significant relationship between musical aptitude and second language linguistic skills, independent of verbal intelligence. It was discovered that participants with advanced musical aptitude also had advanced foreign language pronunciation skills. They provided further evidence that musical aptitude and linguistic skills are interconnected (Milovanov, 2011).

Akbari and Hosseini (2008) found significant relations between the use of language learning strategies and MI scores of the Iranian L2 learners (*N*=90). However,their findings showed no relationship betwen Musical intelligence and any aspect of strategy use, while there was a significant correlation between bodily-kinesthetic intelligence and memory learning strategies.

Amiryousefi and Tavakoli (2011) conducted a study to provide empirical evidence to see if there is a relationship between test anxiety, type of motivation and intellectual abilities of test takers and their reading, listening and writing scores on TOEFL IBT, specially the verbatim use of the input texts in the integrated writing task which is read and listen to write. Using Multiple Intelligences Development Assessment Scales (MIDAS) questionnaire, a test anxiety scale and some survey questions related to test anxiety provoking factors were given to subjects (N=30) attending TOEFL IBT classes at Academic Center for Education, Culture and Research (ACECR) in Iran. Their findings reported the existence of test anxiety among test takers, especially due to some factors, e.g. time limitation and lack of self- confidence.More importantly, they found a significant relation between musical and kinesthetic intelligences and writing and listening skills, respectively. However, no instances of the verbatim use of the source were found in test takers responses to the integrated writing task.

There is a significant body of evidence from multidisciplinary studies that logical-mathematical intelligence has a significant role in education, e.g. Özgen et al. (2008), and academic achievement particularly in L2 achievement. Özgen et al. (2008), for instance, investigated the multiple intelligence domains of pre-service mathematical teachers. The findings of their study, as expected, revealed that

among pre-service teachers the highest mean score was observed in logical-mathematical intelligence domain while the lowest mean score was obtained in musical-rhythmical intelligence. Regarding language achievement, Sarıcaoğlu and Arıkan (2009) found that logical-mathematical intelligence was the dominant intelligence among the participants. They further asserted that the tendency to develp logical/mathematical intelligence may evoked and encouraged by the teachers via materials and activities they used in their practical teaching. similar results were found by Özdemir et al. (2006) who also found that logical/mathematical intelligence was the strongest intelligence reported by the participants.

Ahmadian and Jalilian (2012) explored the relationship between EFL learners' spatial intelligence and their performance on Cloze tests in general and the correlation between varieties of Cloze tests, i.e., analytic or perceptual, and learners' spatial intelligence among Iranian male EFL learners (N=41). The findings reported a high significant correlation between participants' spatial intelligence profiles and the two cloze tests. They concluded that using cloze tests in EFL contexts should be reconsidered, and further research is needed to explore spatial intelligence and its role in language classrooms.

Hanafiyeh (2013) investigated the relationship betweengender factor and intelligence types of students (*N*=140), and also the relationship between multiple intelligences and success in writing skill and grammar of English. The results indicated negative significant correlations between spatial intelligence and students' grammar test scores. Hanafiyeh's findings were in line with Razmjoo (2008) who studied the relationship between language success and intelligence types and found no significant relationship between language success and the intelligences.

Modirkhamene and BagherianAzhiri (2012) investigated The Effect of Multiple Intelligences-based Reading Tasks on EFL Learners' Reading Comprehension in an Iranian context. Their findings run a counter on the findings of Hanafiyeh (2013) and Razmjoo (2008) who showed that spatial intelligence does have effect, though negative, on foreign language learning. The results indicated that EFL male learners manifested interpersonal, logical-mathematical, naturalist, and musical intelligences as their dominant intelligences, while interpersonal, musical,

naturalist, and verbal-linguistic intelligences were dominant intelligences among females. There was no significant relationship between participants' spatial intelligence and their reading comprehension skill.

Heidari and Khorasaniha (2013) conducted a research study to investigate the Relationship between Locus of Control (LOC), MI theory, and Reading Proficiency among Iranian EFL students (N=59) from University of Sistan & Baluchestan and Islamic Azad University of Zahedan/Iran. Their findings indicated no significant relationship between LOC and MI; however, there was a significant relationship between MI and reading proficiency. Moreover, the visual/spatial intelligence made the greatest contribution in predicting reading proficiency. They concluded that significant positive correlation was found between internal orientation and reading proficiency as well as spatial intelligence and reading scores and that LOC and MI are significant variables regarding reading proficiency and should be highly considered while developing strategies for reading instruction.

Tekiner (2005) studied the relationship between learning styles and multiple intelligences in relation to English proficiency of Turkish young adults (*N* =123). The results of descriptive statistics revealed that interpersonal intelligence was dominant intelligence. Similarly, Yeganefar (2005) found a significant relationship between language learners' overall language proficiency and their interpersonal intelligence. Saidi and Khosravi (2013) conducted a study to find out the correlation between Iranian EFL learners' (*N*=110) intelligence types and their foreign language classroom anxiety(FLCA). The findings indicated a low negative correlation between linguistic, interpersonal and intrapersonal intelligence types and foreign language classroom anxiety. Given the results, they concluded that "the higher degree of linguistic, interpersonal and intrapersonal intelligences the learners own, the less anxiety they might experience in language classrooms (p.367)". Likewise, Mohammadzadeh and Jafarigohar (2012) examined the relationship between willingness to communicate and multiple intelligences among Iranian EFL learners (*N*=500). The findings of their study revealed a significant correlation between MI profiles of learners of English and their willingness to participate in L2 communication.

The present study also indicated a statistically significant relationship between emotional intelligence and academic achievement:

- PE correlated negatively with academic achievement.
- ME correlated negatively with academic achievement.
- UE correlated positively with academic achievement.

As seen, there was a negative significant correlation between perceptions of emotions, managing one's own emotions and academic achievement. This implies that as PE and ME decrease, students' grade point avarages tend to decrease, too. Moreover, utilizing emotions subscale positively correlated with academic achievement. Similarly, the results of multiple regression analysis revealed that PE, ME, and UE significantly predicted academic achievement among the participants, explaining 41.5% of variance in their academic achievement. The findings indicate that perception, managing and knowing how to use emotions appropriately are associated with better academic performance. These findings are in line with Kearney (1998), Petrides, Frederickson & Furnham (2004), and Sylwester (1998) who have shown that emotions are meaningful to education as they can either positively or negatively influence learners' attention, driving their learning and memory and affecting academic achievement.

The results of the present study are in in congruent with other studies conducted on the relationship between emotional intelligence and various areas of language achıevement and academic achievement in the field of SLA. AbdolmanafiRokni, Hamidi and Gorgani (2014), for instance, investigated the relationship between Iranian L2 learners' (*N*=115) emotional intelligence and their language achievement. They reported a significant relationship between the students' emotional intelligence and their language achievement. Their findings further revealed statistically significant differences between male and female participants with females having higher levels of EQ (emotional intelligence) than males.

Zahed-Babelan and Moenikia (2010) investigated the role of emotional intelligence and it's components to predict academic achievement of Iranian students (N=7000) at Payame Noor University during 2008-9 academic year. Their findings showed that emotional intelligence and its dimensions significantly predicted students' academic achievement. The interpersonal, i.e. social awareness and

interpersonal relationship, General Mood or self-motivation, and Intrapersonal, i.e. self-awareness and self-expression components of EI greatly contributed to the prediction of academic achievement, respectively.

Using structural equation modelling, Sucaromana (2004) examined the relationship between emotional intelligence and academic performance among lower-secondary years of schooling in Thailand (*N*=273, 136 males and 137 females) on one hand, and explanatory power of other variables such as family encouragement for learning English, study habits, levels of engagement, and attitudes moderating the relationship between EI construct and achievement in English on the other. The findings revealed that emotional intelligence directly influenced Thai students' achievement in English. Furthermore, it was found that emotional intelligence influences achievement in English indirectly through the mediation of family support, study habits and levels of encouragement.

Yazici, Seyis, and Altun (2011) conducted a cross-sectional study to examine the impact of emotional intelligence and self-efficacy beliefs on academic achievement of high school students. A total of 407 (*Female*= 236, *Male*= 171) participants were recruited in the study. Their findings indicated that age, gender and self-efficacy were the significant predictors of academic achievement. Furthermore, the findings showed a statistically significant interaction effect between academic achievement and socio-economic status of the participants and females' had significantly higher scores than male group.

Zarafshan & Ardeshiri (2012) explored the effects of emotional intelligence and use of language learning strategies on English proficiency among Iranian undergraduate EFL students (N=135). The results revealed a slight negative relationship between emotional intelligence and English proficiency, but a positive relationship between English proficiency and language learning strategies use.

In a recent study, Oz, Demirezen, and Pourfeiz (2015a in press) examined the relationship between Emotional Intelligence (EI) and attitudes towards foreign language learning(A-FLL) among university students(*N*=159) in a Turkish context. The findings showed higher levels of overall EI (95%) among participants. Emotional intelligence also correlated positively with A-FLL and perception of emotions and utilization of emotions components of EI were found to be the

strongest predictors of A-FLL. While emphasizing inadequacy of Intelligent Quotient (IQ) in accounting for success in L2 achievement, the researchers concluded that an awareness of the importance of students' emotional intelligence and its impact on attitudes toward learning an L2 may provide more insightful implications in relation to the quality of L2 instruction and enhancement of language achievement.

Likewise, Oz (2015) investigated the relationship between English as a foreign language (EFL) learners' (*N*=165) emotional intelligence and communication in English in a Turkish context. The findings revealed that a great majority of the participants (96%) had high levels of EI and an acceptable level of willingness to communicate (WTC). There was a significant correlation between emotional intelligence and EFL learners' WTC in the study sample. Perception of emotions and managing emotions were the strongest predictors of WTC. He recommends that EFL instructors should reappraise their teaching methods according to their students' emotional intelligence and WTC levels and use appropriate teaching materials which address students with diverse abilities and encourage them to actively take part in L2 communication.

Research also has shown that emotional intelligence may have selective impact on success in multidisciplinary studies. Petrides, Frederickson & Furnham (2004) argue that the " EI may influence scholastic attainment by conferring a selective advantage for certain academic subjects that require consideration of affect-related issues" (p.287). Their findings showed that EI had comparatively profound effects on English than other school subjects. This means that the EI construct selectively influences academic achievement among students. This is in congruent with, according to Petrides, Frederickson and Furnham (2004, p.287), the "proposition that a degree of stress and anxiety may be conducive to scholastic achievement for able and well-adjusted individuals" (see also Eysenck, 1996).

The present reasarch also indicated significant relationship between learning styles and academic achievement. Indeed, all learning styles measured in the study correlated significantly with academic achievement of prospective English teachers. Additionally, the results of multiple regression analysis for the four original styles indicated that all of them were predictors of academic achievement with AE and AC as strong predictors of GPA, respectively. Likewise, the results

revealed that both composite learning styles, i.e. AC-CE and AE-RO, had appropriate predictive role in academic achievement with AE-RO as the stronger predictor. On the whole, learning styles explained 25.8% of variance in the participants' academic achievement.

The findings of the present reasearch study suggest that learning styles can potentially affect foreign language achievement. These findings are in contrast with Güneş (2004) who examined the relationship between EFL learners' (*N*=366) learning styles preferences (LSPs) and L2 achievement in preparatory courses of Gazi University in Ankara/Turkey. The findings of her study showed that students' learning styles do not moderate on their achievement scores.

However, the results of the current study are in congruent with the findings of other researchers (Abidin, Rezaee, Abdullah, & Singh, 2011; Razawi, Muslim, Razali, Husi, & Samad, 2011; Tao, 2011). Razawi et al., (2011) investigated the diverse learning styles employed by ESL students in a secondary school students (*N*=90) in Malaysia. The students' learning preferences were assessed in order to recognize their learning styles. The results showed that most preferred learning styles were global, impulsive, perceiving, extroverted, introverted, ambiguity tolerant, sociological, auditory, visual and active learning styles. They concluded that their findings may contribute to curriculum design and lesson planning in L2 learning.

Abidin, Rezaee, Abdullah, and Singh (2011) investigated the correlation between learning styles and overall academic achievement among upper secondary class students (*N*=317) in a Malaysian context. The findings indicated a statistically significant relationship between overall academic achievement and learning styles. The results also revealed similar learning preferences for high, moderate and low achievers.

The findings of the present research study revealed that there were statistically significant differences among 'high', ' moderate', and 'low' achievers in their MI profiles:

- High achievers had higher scores in linguistic, mathematical,musical, kinesthetic, interpersonal intelligence, intrapersonal, and spatial intelligences.

- Low achievers had lower levels of MI.
- Moderate achievers were dominant in naturalist intelligence and had moderate levels of musical, interpersonal, and intrapersonal intelligences.

As seen in the results section above, high achievers were dominant in all tpes of ıntelligences except for naturalist intelligence while low achievers had lower percentage in all MI profiles. These findings provide further support for the effectiveness of MI theory in predicting academic achievement. In other words, these findings corraborate the application and effectiveness of Gardners' MI theory in teacher education programs and suggest that having higher levels of MI profiles in all intelligences can yield more insightful results in L2 achievement. However, not all L2 learners with high GPA might have higher levels of MI profiles. That is, participants draw upon their all multiple abilities in performing tasks and all these abilities or intelligences serve as multiple windows opening to a single room, i.e. success in learning an L2 and higher levels of academic achievement.

In the same vein, the findingsof One-way ANOVA revealed statistically significant differences among high, moderate, and low achievers in their emotional intelligence:

- High achievers had higher levels of EI in UE, ME and MoE .
- Low achievers had lowerlevels of EI in all dimensions.
- Moderate achievers had moderate level of UE.

As seen, there were differences among high, moderate and low achievers and their EI profiles. In other words, the findings showed that the participants' EI levels vary with respect to their academic achievement, suggesting that higher levels of emotional intelligence, utilization of emotions, and managing others emotions are directly associated with higher levels of academic achievement. Additionally, these findings suggest that moderate achievers are good at utilization of their own emotions. Understandably, low acievers are unable to manage these emotions in others and utilize them for their academic success. In other words, they are unable to establish interpersonal relations with others and use their emotions in order to accomplish L2 learning tasks. Therefore, educators and instructors should try to create stress-free and anxiety-free L2 instruction atmosphere (Dewaele, 2013) so

that students will be given the opportuinty to control and overcome their emotions while performing L2 learning tasks.

Finally, the findings revealed significant difference among high, moderate, and low achievers in relation to their learning styles:

- High achievrs were dominant in AC, AE, AC-CE, and AE-RO.
- Moderate achievers were dominant in RO.
- Low achievers were dominant in CE.

These findings indicate that high achievers are more likely to actively take part in L2 learning tasks through active conceptualization and hand on activities. These findings support the underlying assumptions of Kolb's experiential learning theory which postulates that successul learners are better perceivers and transformers of knowledge (Kolb, 1984, 2005). In other words, high achievers prefer doing to reflecting and thinking. These findings suggest that learning styles are at work in L2 learning and teacher education, and if properly mingled and matched with MI profiles and emotional intelligence, they would yield more promissing results in teacher education programs. Unfortunately, the literature is scarce regarding the relationship between Kolb's learning styles model and L2 achievement. Although a few studies (JilardiDamavandi et al., 2011; Malcom, 2009) have attemted to invesigate the relationship between Experiential learning theory (ELT) and L2 achievement, their studies have not approached the issue in details and the same complexity as the present research study did. It is suggested, therefore, that further research dedicate more attention on this issue in other contexts, different areas of L2 acievement, and with different participants and sample size.

The results also revealed that the dominant learner types among the participants were accomodators and convergers followed by assimilators and divergers.These findings are in line with the findings of JilardiDamavandi et al., (2011) and Malcom (2009) who found significant differences between four learner types and academic achievement. However, unlike their findings which revealed that accommodators and divergers were less successful than convergers and assimilators, the findings of the present study indicated that assimilators and divergers are less successful than accommodators and convergers. As stated earlier in this section, post-hoc test results showed great difference between divergers and convergers with

convergers having higher mean scores than divergers, suggesting that convergers are more successful learners than divergers. That is, those who are good at hypothetical deductive reasoning have higher levels of academic achievement. Furthermore, the participants' most preferred style was AE-RO learning style, implying that they prefer to actively take part in language learning process rather than to be reflective observers. Therefore, it can be cocluded that there is a linkage between learner types and kinesthetic intelligence. In other words, they prefer learning by doing/planning to watching/reviewing which relates learning styles to MI profiles. This suggests that awareness of one's learning styles and the ability to properly use them can help the particiapnts become independent and autonomous learners which can, in turn, translate into academic achievement.

Drawing upon the experiential learning theory (Kolb, 2005) and the results of the this study, it seems reasonable to state that a great majority of the participants (67.6%) are accommodators and convergers and, hence, have higher levels of language achievement than assimilators and divergers. This is further supported by reference to the results of the relationship between high, moderate and low achievers and learner types. As seen in the results section, nearly 77% of high achievers, 64.3% of moderate achievers, and 50.3% of low achievers were accommodators and convergers.

The implications for language teaching, teacher education, and curriculum development is that identifying learning styles enables teachers and instructors to adopt appropriate teaching styles and teach their students accordingly. Teachers should always keep in their mind that they should teach in a way that addresses various learning styles (Sternberg, 1997). In other words, they should try to maintain unity within diversity and arrange teaching materials tailored to all students with divers learning styles. Therefore, flexibility and diversity of teaching styles (Sharp, Harp, & Terry, 1997) is of significant value for teachers and they should be flexible (Gokalp, 2013) and balance their teaching styles and strategies in favor of all students (Felder, 1993, 1995; JilardiDamavandi et al., 2011; Zhang, 2005), seeking for enhanced academic achievement.

From pedagogical perspective, self-awareness about learning styles influences academic success. It should be noted that unlike dichotomous view held of learning styles, KLSI postulates that although learners are dominant in one

dimension or learning style, say, Concrete Experience, they can use their other styles as well in the learnig cycle to accomplish learning tasks. In teacher education programs, therefore, instructors can present materials and teach learning cycle clockwise by problematising and asking the students to think, write, or talk about a language-related problem, e.g., language skills, pronunciation of language sounds, intonation, grammatical structures, etc…, from various perspectives. Through group or team work, students can use their diverger abilities to generate different viewpoints to solve the problem. Then, they compare and contrast the problem with previous ones and get and organize the information about what other experts say in relation to the problem (assimalating). Next, the students can write or present their experimentation or hands on activities using whatever at their disposal (converging). Finally, using their accomodator abilities, they can write or talk about how they can approach the originl problem, i.e. change or revise it, trying to adapt creatively the things they have learned through their tour in the learning cycle.

As stated earlier in this study, L2 research on learning styles in different contexts (Cohen 2003; Oxford, 2003; Oxford, Ehrman & Lavine, 1991; Razawi et al., 2011; Reid, 1987, 1995, 1998; Riazi & Riasati,2008; Yılmaz & Genç, 2010) has proved the importance of learning styles in language and academic achievement and their importance in fostering one's L2 skills. Learning styles serve as facilitative factors in L2 acievement. If there is a match between learner needs and learning styles on one hand, and teachers' teaching styles on the other, the results can be more rewarding since learning styles promote and accelerate the success rate of students and lead to academic achievement. In other words, learning styles have proved to be one of the important components of L2 learning process and academic achievement, and "the more teachers know about their students' style preferences, the more effectively they can orient their L2 instruction, as well as the strategy teaching that can be interwoven into language instruction, matched to those style preferences (Vaseghi et al., 2012,p.448)".

In line with what has been said so far, it is suggested that teachers get adequate awareness of their students' learning preferences and opt for different types of strategies that best fit their students' needs and learning styles. Moreover, the students also should be aware of their own learning preferences and those of their

peers, and teachers' teaching styles. "The more thorough is this awareness of learner differences, the better chances the teachers will have of meeting the diverse learning needs of all of their students" (Felder & Brent, 2005, p.57). This will facilitate L2 learning process and end up with improved academic achievement.

As seen in the results section, the findings showed that gender differences have the potential to moderate on language learners' multiple intelligences profiles. Male and female participants differed significantly in linguistic, mathematical, kinesthetic, spatial, and naturalist intelligences. Males had higher mean scores in linguistic, mathematical, kinesthetic, spatial, and naturalist intelligences These findings indicate that females are good at establishing interpersonal relations with their peers and others while showing tendency to be reflective and work individually:

- Gender differnces were significant in linguistic, mathematical, kinesthetic, spatial, and naturalist intelligences.
- Males' dominant intelligences were linguistic, mathematical, kinesthetic, spatial, and naturalist intelligences.
- Females' dominant intelligences were musical, interpersonal, and intrapersonal intelligences.

Similar results were found by Loori (2005), Sarıcaoğlu and Arıkan (2009), and Teele (2000) who reported significant gender differences in relation to MI profiles among the participants. However, Sarıcaoğlu and Arıkan (2009) found that females had higher logical/mathematical, intrapersonal, linguistic, and musical intelligences, while females had higher mean scores in musical, interpersonal, and intrapersonal intelligences in the present study.

The findings of this study are also consistent with findings of Loori (2005) who found that gender factor significantly correlated with logical/mathematical and intrapersonal intelligences. His findings also indicated that males had higher logical/mathematical while females had stronger intrapersonal intelligence. Hanafiyeh (2013) found that there was a significant positive relationship between gender variable and linguistic intelligence. However, no significant relationship was found between gender and other intelligence types measured in the study. Likewise, Tirri and Nokelainen (2008) found that males had higher self-rated

Logical-mathematical intelligence than females, while females rated higher linguistic abilities than the males. Razmjoo (2008) also found no significant relationship between gender differences in relation to MI profiles and their language proficiency. Likewise, Pishghadam and Moafiyan (2008) found no significant difference between gender and MI profiles of high school teachers in relation to their teaching success.

The findings of the present study showed significant differences between gender vaiable and emotional intelligence in perception of emotions and managing one's own emotions dimensions. Males had higher mean scores in PE and ME whereas females had higher mean scores in MoE and UE dimensions of emotional intelligence. Put differently, although the magnitude of mean differences did not reach to a significant level so as to differentiate the groups, males had more capacity to perceive and manage their own emotions. Conversely, females were found to be more capable than males in influencing others' emotions and making appropriate use of their emotions which greatly contributes to their academic achievement. Mayer, et al. (2000a) argue that in most cases, especially in most intelligence-related mental tests, males and females show almost similar performance though there are some regular differences between groups in their performance regarding learning tasks (Abdolmanafi Rokni et al. 2014).These findings run counter to Mayer et al., (2000b), Abdolmanafi Rokni et al. (2014), and Oz, Demirezen, and Pourfeiz (2015b in press) whose studies reported a significant difference between gender and EI with females having higher levels of EI than boys. They quote Schilling (1996) as saying that the reason for this difference can be attributed to the amount of emotional education received by females in the family.

Likewise, the findings revealed that gender differences influence learning styles. These findings are in line with other studies in the field (Mulalic et al., 2009a; Park, 1997b; Reid, 1987; Riazi & Mansorian, 2008) that found little or minor differences between learning preferences of males and females. However, these differences were not significant enough to differentiate the participants. Additionally, the findings of the present study are also in congruent with Baxter (1992), Bidabadi & Yamat (2010), Erdem, Woods, & Cho (2004), and Tabatabaei and Mashayekhi (2013). Tabatabaei and Mashayekhi (2013) conducted a research to find out if

learning styles of Iranian pre-university EFL learners differ significantly across different levels of proficiency, majors and genders. Their findings indicated that the dominant learnig styles of the participants were visual style, auditory, tactile, respectively, while kinethetic was the least preferred learning style. Moreover, gender did not moderate on the learning style preferences of the particiants.

Regarding age factor, the results revealed that age has nothing to do with multiple intelligences profiles of the students. The findings are in congruent with those of Oteng (2012) who found no significant relationship between MI and age. On the other hand, the findings of the current research are in contrast with the findings of of Wilson and Mujtaba (2010) who found significant relationship between intrapersonal intelligence and age factor. Likewise, Meneviş and Özad (2014) investigated the correlation between multiple intelligences types and the participants' age and gender. Their findings revealed statistically significant differences for verbal, kinesthetic, existential, musical, interpersonal, intrapersonal, and naturalist intelligences in relation to gender and statistically significant differences for visual, logical, intrapersonal, naturalist, and existential intelligences in relation to age factor. The reason for the lack of significant differences between participants' age and their MI profiles in the present study may be explined by the fact that there was not such a huge age distance among groups. That is, the age differences were not so much as to display statistically significant differences among the participants.

As for emotional intelligence, although the results revealed no significant differences between EI and age factor, the scrutiny of the mean scores indicated a linkage between lower ages and higher mean scores in all dimensions of emotional intelligence. These findings run counter to the findings of research into EI (Boyatsiz, 2000; Gowdhaman & Murugan, 2009; Kafetsios, 2004; Parker, Saklofske, Wood, Eastabrook& Taylor, 2005; Salovey& Mayer, 1990) which have shown that EI increases with age and experience. Chapman and Hayslip (2006) found that age significantly affects EI among mid-life adults who reported greater use of optimism in comparison to young adults. Shipley, Jackson, & Segrest (2012) also found no relationship between age, EI, and academic achievement. As stated earlier in the relationship between age and MI, the lack of linkage between age and EI can be attributed to the fact that although the participants were

categorized under two age groups, they were somewhat homogeneous since only 4.90% of the participants aged between 24-27 years old, while 95.10% fell within age group of 18-23. Therefore, due to the homogeneity of the age groups, the lack of relationship between age and MI, EI, and learning styles seems to be justified.

5. CONCLUSION AND RECCOMENDATIONS

The findings of the present study revealed that MI theory has the potential to affect L2 achievement in all areas and the ultimate academic achievement of prospective English teachers. The study supports the MI theory as a learner-centered theory that reflects different ways in which L2 learners tackle the L2 learning tasks and interact with the world. It also addresses the greatest possible scope for second language learning activities (Armstrong, 2000, 2009, 1994; Christison, 1996, 1998, 2006; Christison& Kennedy, 1999; Ibragimova, 2011; Spirovska, 2013; Torresan 2010), academic and personality development in school context as it captures the individual differences in learning an L2. Therefore, schools, teacher education departments and curriculum developers should devise and implement their programs in ways that capture learning problems, cater for the uniqueness of student teachers, and provide them with opportunities to utilize their abilities and skills. That is, both methodology and curriculum should address student teachers MI profiles and diverse learning preferences and capacities not just focusing on the strategies and activities that only cater for linguistic and logical/mathematical intelligences as in traditional way of curriculum development.

The findings of this dissertation suggest that application of MIT and using activities and tasks that address and activate " multiple ways of meaning- making"(Ibnian & Hadban,2013) in L2 learning and teacher education programs can serve as powerful motivational factors to academic achievement among prospective English teachers. As these activities appeal to learners' potentials or intelligences, they provide them with 'multi-sensorial diversified didactics' (Torresan, 2010) or 'multiple memory pathways' (Arnold & Fonseca, 2004) which are necessary to promote 'sustained deep learning' (Schumann 1997) among L2 learners. According to Christison (1999), an MI-based curriculum helps curriculum designers and course developers understand and appreciate students' intelligence profiles, learning preferences, and their strengths. Indeed, students are more inclined to engage in performing L2 tasks when they are given the opportunity to use learning modes that match their intelligence and learning styles. If properly applied, MI theory, then, could play a crucial role in helping teachers to create an

attractive, encouraging, and motivating atmosphere for professional development among prospective teachers.

It is of great significance to note that even though intelligences are separate human capacities, they often work in concert and overlapping elements can be observed in one's MI profiles. Put differently, intelligences are interdependent, but work in concert when are called upon in real-world operations including language achievement. The MI theory asserts that we use several intelligences in order to accomplish most tasks. That is, all intelligence types interact (Gardner, 1993a; 2011; Moran, Kornhaber, & Gardner, 2006) and cooperate during learning process. According to Christison (1998) intelligences cooperate and interact with each other in complex ways. Indeed, no intelligence, according to Christison (1998), really exists on its own in life. For instance, verbal/linguistic intelligence is considered as an interdisciplinary variable which is given due attention in all MI theories and is closely connected to the display of all intelligences (Bellanca, Chapman, Swartz, & Fogatry, 1997; Torresan, 2010). This implies that linguistic intelligence alone cannot account for learning an L2 by itself, and that instructors and program developers should cater for the development of all intelligence types among prospective teachers.

However, some of the constituent components in intelligences are intelligence specific and are not shared by other intelligences. For example, lexis and semantics are properties that belong only to linguistic intelligence while other components are correlated with other kinds of intelligences. From L2 and academic perspective, one can identify the functioning of all intelligences in all aspects of L2 instruction and use. Linguistic intelligence, for example, covers lexis and semantics, and the morpho-syntax and language rules fall within logical/ mathematical intelligence dimension. While one's emotions and emotive aspect of language learning falls within intra-personal intelligence and emotional intelligence, interpersonal intelligence is directly related to spoken language and pragmatics. By using naturalistic intelligence, one can capture the relationship among texts, languages and diverse cultures. Additionally, most intelligences are directly related to linguistic aspects of language learning, whereas kinaesthetic intelligence concerns primarily with extra-linguistic or paralinguistic aspect of communication. Musical intelligence concerns phonetics, phonology, and also

prosody (Demirezen, 2009), and spatial intelligence deals with visual aspects of the language including contextualization and visualizations of linguistic elements. Therefore, language achievement is not merely the accommodation of linguistic competence composed of lexis and semantics or morphological and syntactic rules. On the contrary, it involves different types of 'languages', and academic achievement encompasses the capacity of a person to coordinate these languages (verbal and non-verbal, linguistic and extra or paralinguistic features of language) while involving in a linguistic event. Indeed, as Freddi (1990, p.60, cited in Torresan,2010, origin in Italian) asserts, " language can represent the contents of non-verbal languages but it cannot take their place."

The findings of this dissertation highlighted the significant role that emotional intelligence can play in academic achievement. Emotions can serve as motivational factors that moderate one's academic success. Put differently, motivation to learn an L2 and academic achievement can be influenced and shaped by our emotions since motivation is both cognitively and emotionally driven (López, 2011; MacIntyre, 2002; Dörnyei, 2001, 2005). The neurobiology theory of Schumann (1997) underscores the significance of emotions in our understanding of L2 and academic achievement. The theory posits that emotions influence L2 achievement, our performance and achievement, and cognition. Teacher training programs, therefore, should cater for the emotional well-being of prospective English teachers so that they will be able to use this knowledge in their professional teaching.

The present study also provided evidence for the role of learning styles in academic achievement among prospective English teachers. Learning styles were found to predict 28. 5% of variance in the prospective English teachers' academic achievement. The study also contributed to our understanding of intelligence profiles and means of deploying those intelligences, i.e. learning styles, in teacher education programs. Indeed, it helps us to differentiate MI profiles and learning styles preferences. It should be borne in mind that learning styles are not intelligences. The former is process-oriented and concerns "input" process of language intake, while the latter is product-oriented and is connected with the "output" functioning of one's knowledge, abilities, skills, i.e. intelligences (Gardner, 2013, 2014; Prashnig, 2005). Therefore, learning style is considered as individual-

specific way or style of coping with the learning problems and, obviously, it is unrealistic to claim that

> *"someone who learns/reads/ works better in dim light with music in the background while chewing or fiddling with something is more/less intelligent than someone who concentrates better in bright light and silence, sitting still and eating/drinking only before or after a learning session" (Prashnig, 2005, p.9).*

Stated otherwise, one can be *visual* or *kinesthetic* learner, *field dependent* or *field independent*, but this does not guarantee that s/he is intelligent. On the contrary, an intelligent person can use his intelligences in multiple ways using various learning styles and strategies during problem solving tasks.

Given that L2 and academic achievement are greatly contingent upon mastery of linguistic competence weighted with communicative competence (MacIntyre and Charos, 1996), the application of MIT in teacher education programs entails, on one hand, the identification of linguistic intelligence and its various underlying components accompanying communicative competence, and operationalization of these multifaceted capacities in actual teacher training programs on the other. Put briefly, a MIT-based pedagogy can help curriculum developers to provide prospective teachers with the best conditions to develop themselves professionally. Thus, a MIT-based pedagogy appeals to a variety of extra-linguistic capacities that accompany the verbal language and provides opportunity for the use of dominant intelligence. From individual differences (ID) and motivational perspectives, a MIT-based L2 pedagogy, while catering for multiple types of intelligences, mainly builds upon intrinsic factors or intermediate stimuli which assert the use of verbal and non-verbal codes to foster communicative competence among L2 learners.

Conversely, the application of learning styles theory in L2 teaching, more specifically teacher education programs, concerns with extrinsic stimuli (e.g. listening to Baroque music during language learning process as proposed by Suggestopedia method of language teaching) which require the reasonable use of language learning styles and preferences to make L2 learning more pleasant (Torresan, 2010). Analogously speaking, MIT functions as an intrinsic motivation (Noels,2001, 2003; Dörnyei, 2005, 2009) for L2 learning, while learning styles ought to serve as an extrinsic motivation. Obviously, language teaching curriculum

which integrates both MIT and learning styles theory appeals to the learners' extrinsic and intrinsic motivations simultaneously and constitutes a best avenue to quality and professional teacher training.

The present study provided evidence for the importance of experiential L2 learning. Moreover, it provided further support for the rejection of dichotomous view of learning styles by emphasizing that L2 learning is better enhanced through relearning, processing and transforming the knowledge not transmission of the knowledge. Therefore, it is suggested that teacher education programs should give much attention to the learning styles models such as "Experiential Learning Theory (ELT)" that appreciate the use of various learning styles and are appropriate for successful L2 learning and and academic achievement.

This study also provided support for the relationship between learning styles and MI profiles, especially interpersonal and intra personal intelligences. Considering the role of these three intelligences and success in L2 communication and cultivating good pronounciation, it can be conluded, therefore, that, both learning styles and MI affect four language skills, especially spoken language, L2 communication, grammar and vocabulary. Furthermore, the preference of acting over reflecting among the prospective English teachers suggest that those with kinesthetic intelligence can better use their learning styels and intelligences since accommodators are more likely to use their kinesthetic ability or intelligence in performing tasks than other learner types. This might be true in L2 achievement as well.

The present study provided support for the application of MI theory in L2 teaching and teacher education programs since more than 50 % of the participants had higher levels of MI profiles and these profiles predicted 67% of variance in prospective English teacgers' academic achievement.Therefore, it is suggested that teacher education programs should aim at individualization and pluralization of teacher education programs (Gardner, 2013, 2014) and teachers should individualize their teaching as much as possible. The logic behind the individualization is that human beings have their own unique pattern of intelligences. Therefore, instead of "one size fits all," teachers ad educators should opt for ' all sizes fit one' strategy in order to teach each person in a way that is more comfortable fort him/her. Additionally, the curriculum should use the

assessment methods, (Oz, 2014c) that give the teacher students the opportunity to show what they have learned and make sure that they are able to use their knowledge and skills in real life contexts.

Thanks to the developments in technology, this aim can be achieved through using technology and ‘apps’ (Gardner & Davis, 2013), and mobile learning which make it possible for teachers to live up to their goals and individualize teaching for everyone. The implication for language teaching and teacher education is that MI-based language can be implemented and promoted through the application of technology and computer-assisted language learning (CALL). In other words, CALL-based pedagogy is the best opportunity to implement MI-based language teaching and learning. Mobile learning, computer and digital literacy, and accessibility of digital devices (Oz, 2014d; Oz, Demirezen, & Pourfeiz, 2015 in press) facilitate individualized L2 learning for everyone. Corrollary to individualization of the curricullum, pluralization of the course posits that teaching materials and instruction should be delievered in several ways not just one. This provides the opportunity for teachers and instructors to reach students with divers abilities or intelligences and different modes of approaching problems which ultimately exert influence in ultimate attainment in L2 and academic achievement.

However, this does not necessarily imply that they should design and prepare separate lessons in different ways addressing all intelligence types. The main objective here is to design teaching materials which provide opportunity for students with multiple intelligences to actively enage in communication with each other, become autonomous learners, and discover their own strengths and weaknesses, and try to develop their intelligence profiles and overcome their weaknesses (Moran, Kornhaber, & Gardner, 2006, Arikan et al., 2014).Understandably, MI-based language teaching approach and pedagogy target the development of ‘whole person’, corroborate and encourage cooperative language learning and, from a constructive point of view, it opts for designing careful and flexible teaching materials and coursebooks which help students to construct meaning based on their own past and present knowledge and experiences.

The findings of the study may as well be more insightful for coursebook designers. Coursebooks have invariably a vital role in the identification and development of

diverse intelligences and “have an effect on actualization of the curriculum, educational plans and decisions through the use of interesting and useful materials, tasks and activities in classrooms” (Arikan, Soydan, & İşler, 2014, p.29). As stated earlier in this study, this by no means implies that teachers have to design different lessons based on each of intelligence types. Rather, the aim is to present teaching materials in a way that addresses all intelligence types and help promote interaction among students through using their strengths and overcome their weaknesses by improving their weak. However, research on MI field and L2 learning (Arikan, Soydan, & İşler, 2014; Bothello, 2003; Kırkgöz, 2010; Taase, 2012; Palmberg, 2002) reported that the predominant intelligence presented in the coursebooks was linguistic/verbal intelligence followed by spatial/visual intelligence. It can be concluded that most coursebooks have not been designed based on the MI theory and a huge gap exists between MI theory and its practice in our schools and teaching materials.

From curriculum development perspective, therefore, it is the responsibility of course designers and curriculum developers to design coursebooks that cater for all types of intelligences since not all teachers might be able to devise their own MI-based activities and exercises (Taase, 2012). From pedagogical perspective, the implications are that all teachers and instructors should try to acquaint themselves with MI theory and its contributions to education so that they can make use of their knowledge in their professional teaching. Additionally, it should be kept in mind that all intelligences are important even if the coursebooks predominantly present materials based on one or two specific intelligences, say, traditionally linguistic and mathematical intelligences. Therefore, teachers should be able to arrange and present the teaching materials in a way that addresses as many intelligence types as possible.

One of the most important issues pertaining to proper implementation of MI theory for educational purposes is teacher preparedness. Indeed, the crux of the problem is that even though the MI theory is ostensibly appealing to teachers and learners in L2 context as well as teacher training courses, neither the education system nor the teaching staff are adequately prepared to use MI theory in practical teaching in most parts of the world. It is imperative, then, that both curriculum and teachers be prepared for the demanding task of application of MI theory. The MI- based pre

and in-service training programs and workshops are needed so as to help teachers to catch up with the requirements of the overwhelming task of implementing MIT in L2 teaching and learning context. Moreover, the training courses should focus on the activities and tasks that are MI-based, learner-centered, and intended to raise teachers' awareness of the variables underlying the theory. Therefore, substantial curricular change including careful planning, setting proper language teaching goals, procedures and syllabi (Lazear 1991; Christison,1997, 1999a, 1999b; Armstrong, 2009; Richards & Rogers, 2014; Spirovska, 2013; Kartiah et al., 2014; Larsen-Freeman, 2011) for presenting materials, school and teacher preparedness, and analyzing the educational contexts are of great significance for course planning and adaptation of tasks and activities that best fit to the requirements of education in a MI-based teacher education program. Undoubtedly, the practical application of MIT and preparing a variety of activities addressing learners' MI profiles and learning styles might be challenging, time consuming and financially expensive.

The present study also has implications for assessment of students' L2 performance. The traditional line of language assessment mainly deals with the assessment of learning (AOL) as a product rather than assessment for learning (AFL), i.e. learning as a process. In addition, individual differences in assessing learners' performance are not taken seriously in these assessment approaches. All students need to take the same exams with the same time allotment either in written or spoken form. Within a MI-based L2 assessment, however, L2 performance and academic achievementmust should be assessed according to varying MI profiles. Gardner (TIP database 2003c) maintains that assessing MI profiles is a difficult task and to obtain a comprehensive account of language learners' MI profiles, an "intelligence fair" (Kornhaber, Krechevsky and Gardner, 1990, P.192) process of assessment should be employed and emphasized. This means that the assessors should ensure that instrument used for assessing MI profiles has the capacity to address all their intelligences as opposed to the traditional way of assessment of learning (AoL). Therefore, intelligence testing needs to make use of alternative assessment, or assessment for learning (AFL) (Chow & Leung, 2011; Lee and Coniam, 2013; Stiggins, 2008; Wu, 2013), performance assessment, and portfolio or project assessments as prospective

teachers possess various dominant and non-dominant intelligences. Otherwise, the results of assessment might be misleading and biased. It is not wise and reasonable to assess students' performance only using, say, writing when they are not, in fact, good at writing. The alternative assessment aims at understanding the way L2 learners learn and what they can do using their acquired skills. It can provide valuable data for both in-service and pre-service training as well as administrators involved. Therefore, assessment should be done using alternative forms of measurement which appropriately corresponds and fit to the MI profiles and learning preferences of student teachers. Project assessment, poster presentations, oral presentations, role plying, journals or classroom discussions related to real life problems, and problem solving tasks which provide learners with more chances to complete projects and accomplish their roles drawing upon their diverse MI profiles and leaning preferences are some of the alternative assessment methods that have proved to be useful in MIT- based curriculum (Armstrong, 1994, 2009).

From pedagogical perspective, MI theory contributes a lot to the betterment of language acievement and professional development of student teachers. It helps language teachers to raise their awareness of diverse minds and potentials and multiple ways of employing one's capabalities. Indeed, a MI-based curriculum has benefits for both teachers and students. Analyzing and recognizing students' intelligence profiles and their own profiles can assist teachers to link their own previous experiences with their practical teaching. Furthermore, in a MIT-based pedagogy, teachers are given voice regarding lesson, course, and curriculum development as well as decision making, and they are considered, according to Christison (1999b), as "contributors to the overall development of students' intelligences" (p.12).

Although MI theory was not originally aimed at providing guidelines and strategies for foreign language learning, but researchers (Armstrong, 2009; Christison, 1995, 1997, 1999a, 1999b, 2001, 2005; Christison & Kennedy, 1999; Palmberg, 2011) have offered models of implementing MI theory in EFL/ESL classes (see also Larsen-Freeman, 2011, Lazear,1991). According to Richards and Rogers (2014), there are no goals and syllabus stated for MI. The aim is to help foreign language learner to become a better designer of his/her own language learning experience

and construct meaning drawing upon his or her bio-potential capabilities, i.e. intelligences. Indeed, MI theory is not a prescribed teaching method. It functions as a guide for teachers and helps them to understand intelligence in order to develop classroom activities and strategies that address multiple ways of language learning. MI theory mainly encourages and supports student-centered instruction and by so doing it provides opportunities for them to show the way they learn. MI-based problem solving strategies empower language learners to use their skills, strengths and knowledge to learn new skills and use them in new unfamiliar contexts (Christison & Kennedy, 1999, Kallenbach, 1999, Gardner, 2013, 2014; Richards & Rogers, 2014).

The findings of the present study also shed more light on the importance of learners' leaning styles and preferences. The findings are significant for program designers, educators, especially those in teacher education programs, prospective teachers and institutions in charge of training academics. It is without dispute that teachers and instructors will certainly encounter different learning styles and preferences during their teaching practices. Therefore, they should assess and recognize the learning preferences of their students at the beginning of course in order to consider all related factors that may affect language achievement. Moreover, curriculum developers can also benefit from the findings of pre-assessment of learners' learning preferences to develop better language learning programs and courses which can yield more promising outcomes. Equally important, teachers' knowledge of their students' learning styles may help them to adopt flexible teaching strategies that best suit their practical teaching environment. Stated otherwise, understanding learning styles of the students and their perceptions of L2 environment can help teachers and instructors to create appropriate learning opportunities leading to professional development . Razawi et al., (2011, p.179) argue that in classes with diverse learning styles, "it is always necessary for the teachers, particularly the language teachers to identify, respect and work on the diversity of the learners' differences".

The findings of the present study corraborate earlier research on learner and/or individual differences (IDs) variables. These IDs are factors that can increase our teaching edge as well as learners' autonomy via appropriate metacognitive and targeted learning strategies (Ehrman, Leaver, & Oxford, 2003). Although many

language teaching methodologies (Larsen-Freeman, 2011; Richards & Rogers, 2014) have put specific impact on how languages to be taught, individual differences are still at work and greatly influence language achievement (Andreou, Andreou, & Vlachos, 2006; Dörnyei, 2005; Ehrman, Leaver, & Oxford, 2003; Gregersen, & MacIntyre, 2014). This is vivid even within the framework of the most recent and influential approach to L2 teaching methodology, i.e. communicative language teaching (CLT) and its more recent offshoots such as task-based language teaching (TBL), Content-based instruction(CBI), and text-based language teaching (Richards, 2006). Therefore, language teaching programs, more specifically teacher education departments, should give much importance to the development of fully individualized programs which take into account the learner differences, multiple intelligences, learning styles, interests, and resources in language teaching, and offer multi-sensorial teaching methodology which addresses all intelligence within an L2 learning environment.

As individual difference variables such as gender, age, and personality, linguistic confidence and proficiency level of the students may as well exert great influence on their learning preferences, language teachers should be very flexible and vary their teaching styles in order to address all students with diverse learning preferences. The findings of this study indicated that gender differences can inluence and shape our MI profiles and emotional intelligence. Recent research into the field of SLA (Naserieh & Anani Sarab, 2013; Palabıyık, 2014; Riazi and Mansoorian, 2008) has also shown that gender and age factors moderate on the learning styles of L2 learners. Recognizing learners' preferred learning styles, therefore, may result in higher levels of academic achievement. Consequently, teachers and instructors should gain a profound knowledge of the students and share this information with their students. From pedagogical perspective, this shared knowledge of their learning preferences may motivate and encourage them to draw upon their learning styles, which will, in turn, contribute to academic and professional development in all educational contexts and, more specificaly in L2 learning and academic achievement.

Of great significance is the fact that learning styles are not the only factors that influence language learning process as well as language achievement. There are a myriad of affective, communicative, individual difference, motivational and

attitudinal factors (Chen, 2008; Dörnyei, 2005, 2009, 2014; Dörnyei & Kubanyiova, 2014; Gardner, 1985, 2001; Hadefield & Dörnyei, 2013, MacIntyre & Charos, 1996; Oz, 2014b; Yashima et al., 2004; Yashima, 2002; Yang & Huang, 2008) and personality factors (Dewaele , 2012, 2013; Furnham, Chamorro-Premuzic, & McDougall, 2002; John & Srivastava,1999; Goldberg,1992, 2001; Oz, 2014a) which also impact on ultimate attainment in L2 learning and academic achievement. It is also without dispute that the very existence of mismatch between teaching styles and the way learners prefer to learn may deter using preferred learning styles and, consequently, impede academic achievement.

However, it is impossible for teachers to cater to all types of learning styles in the classroom, especially in mixed-ability and crowded classes. Equally, it is unreasonable to expect that teachers should know and remember exactly how each student learns. Even if they do so, no one can claim that recognizing learning styles of students is a panacea for all observed and expected difficulties and problems in language achievement. Dörnyei (2005) argues that "different learners can approach the same learning in quite different ways and it is also a logical assumption that this variation in approach is not infinite but is characterized by systematic patterns" (p.122). Therefore, teachers should opt for multimodal and multi-sensorial models of teaching. Moreover, they should make any endeavor to combine learning styles with multiple intelligences and other cognitive, affective/evaluative, behavioral, personality, cultural, social, and communicative factors (see Brown, 2007 and Dörnyei, 2005) that are equally potential to influence academic achievement.

The results of the present study extended knowledge of learning styles to the Turkish context among prospective English teachers. In light of the findings of the present research study, it is suggested that teachers take their students' specific learning styles and diversity of the styles into account when teaching. That is, they should opt for those teaching styles and strategies that are compatible with those of students (Chamot, 2004, 2005, 2011; Hardan, 2013; Hismanoglu, 2000; O'Malley & Chamot, 1990; Oxford, 1990, 2003) as this helps the students, according to Felder (1993, p. 286), to "retain information longer, apply it more effectively, and have more positive post-course attitudes toward the subject than do their counterparts who experience learning/teaching style mismatches".

Consequently, if learning styles are compatible and matched with appropriate teaching styles and approaches, then students are more likely to be motivated to learning an L2 and their language performance and achievement may greatly increase (Ashton-Hay, 2005). The role of the teachers is, thus, to keep a balance of using styles and try to be flexible and open to new teaching styles. They should ignore the dichotomous view of learning styles in the favor of more practical and dynamic view of learning styles which asserts the employment of as many as different learning styles for better academic performance. They should try to balance presenting concrete information, be intuitive and sensing, use physical demonstrations and visual aids as well as explanations and definitions (verbal) in teaching, say, pronunciation and vocabulary items, let the students think about teaching materials and topics to be covered (reflective), give them opportunity to actively take part in the teaching and learning process through team work (active experimentation), and cooperative learning experience such as individual and/or group presentations.

Jones, Reichard, and Mokhtari (2003) argue that although students may know how they learn, many of them may lack proper knowledge of their learning preferences. They suggest that students' knowledge of their own learning preferences may help them to gain control of their learning habits and strategies which help them to improve their academic performance. This implies that teacher education programs, course and curriculum developers should make any endeavor to meet the need for professional development among teachers in order to provide appropriate L2 learning environment which encourage and motivate students toward Learning an L2. It should be noted, however, that identifying students' learning style and teaching accordingly may not be enough due to the flexibility of the student's learning styles and also the fact that these learning styles may fluctuate across courses, lessons, and disciplines.

In view of what has been said so far, it can be concluded that multiple intelligences, emotional intelligences, and learning styles are complementary rather than being contradictory and mutually exclusive. In other words, cognitive abilities, emotional and affective factors (see Krashen's affective fitler hypothesis, 1981), and the way these abilities and skills are put in use in learning an L2, i.e. learning preferences, work intandom and contribute to the enhancement of

language achievement. Therefore, we should aim at recognizing and developing learners' abilities and preferences to make the most out of our teaching. It is not wise to keep one and throw the other. Indeed, we shouldn't keep the baby, here multiple intelligences, and throw the water, say, learning styles, as Gardner (2013) recommends. Rather, we should keep both of them as they appeal to individual differences and influence academic performance and achievement.

Draper (2012) argues that both intelligences and learning styles are important for successful learning. However, Draper (2012, p.40) argues that learning styles are only one part of a more important issue, and that both teachers and students should adapt to each other's styles and preferences. It can be concluded, therefore, that both constructs greatly contribute to successful language learning and that both teachers and students should identify and develop them during language learning. This is of great importance for language achievement since knowledge of intelligences and learning styles helps teachers to keep the balance between their teaching approaches, styles and strategies. Equally, it helps students to achieve the balance between the way the learn and teachers' teaching styles. Put simply, the reciprocity inherent in the relationship between the two constructs can help the students to gain new experiences, maximize their skills, abilities or intelligences toward ultimate attainment and academic achievement.

A wide range of strategies and activities have been proposed by researchers (Armstrong, 1999, 2009; Christison, 1999b; Christison and Kennedy, 1999; Ibragimova 2011; Kartiah et al., 2014; Lazear,1999; Torresan, 2010) in order for the teachers to cater for the different types of intelligences in an L2 classroom. Armstrong (2009) offers five important strategies for the development of strategies in a MIT-based language learning context: storytelling, tape recording, brainstorming, journal writing, and publishing. Equipped with knowledge of activities and technics (Table 5.1) which help to raise awarness of intelligences among student teachers can enhance their teaching skills, resulting in language success and improved academic achievement. Teachers, therefore, can devise and use lesson plans based on their knowledge of MI in order to address and evoke all intelligence types in their professional teaching in an L2 classroom.

Table 5.1. Activities and Technics for the Enhancement of Intelligence Profiles

Linguistic Intelligence	Reading a story, storytelling, brainstorming, gap filling exercises for teaching and practicing vocabulary, choosing an appropriate synonym or antonym for a given word, answering multiple questions related to a text.
Logical/Mathematical Intelligence	Sequencing events in a chronological order, finding logical errors, presenting timelines of events presented in a story or a text, jigsaw puzzles and games, concept maps, using heuristic pathways to draw and represent phonological rules during teaching phonetics and phonology, writing the end of the story, or its missing part.
Musical Intelligence	chants, songs, minimal pairs, tongue twisters, rhymes and rhythms, analyzing the lyrics and transforming lyrics into a text, representing semantic fields through reproducing sounds, group repetition of rhymes and songs, remedial, rehabilitation and intervention strategies and technics, e.g. using audio-Lingual rehabilitation programs (see Demirezen, 2010), using reverse repetition or back-ward building technics to help students to settle intonation curve.
Kinesthetic	Visualizing, using body answers as the medium of expressing ideas, e.g. nodding, shaking heads, blinking eyes or winking, drawing, coloring, mime, games, storytelling drawing upon total physical response theory, and dramatization and using classroom drama.
Interpersonal Intelligence	Analyzing a character, peer sharing or peer tutoring and cross-age tutoring, team member teaching, reflections on characters and their actions, simulation through creating an as-if learning environment, group work or team work, doing ethnography research and conducting interviews with peers, writing a text from a different perspective (after reading a text).
Intrapersonal Intelligence	Reflection, describing the present state of the mind by listening to the sounds and intonation pattern, journal keeping, developing intrapersonal dialog in the target language (TL), organizing activities in order to elicit personal experiences (reflections, discussions and sharing personal experiences), reviewing and editing self-related texts and personal letters.
Visual/ Spatial Intelligence	Visualization, drawing diagrams and charts, concept maps, matching pictures with words, using color cues or codes especially for coloring new sounds and their orthographic representations, e.g. coloring th when teaching affricates in English, idea sketching, using graphic symbols especially for presenting word roots, describing pictures or images, using picture metaphors, using lexical games, doing crosswords and puzzles with images, establishing sound and image relationship (Bingo and memory games).
Naturalistic Intelligence	Comparison between two sources of information, e.g. online broadcasting and newspaper, a novel and a film, identifying the odd-word-out, categorizing the information, e.g. biography of an important person, or an important event such as global warming, initiating conversation based on cultural and intercultural relations, organizing field trips and projects, and opening new windows to language learning by taking students to the nature.

The purpose of the present research was to help teachers and curriculum developers to recognize and understand MI profiles, emotional intelligence and learning preferences of students in order to adapt the medium of instruction and assessment based on the students' intelligences and learning preferences. It is hoped that the findings of this study will help teachers, instructors and curriculum

designers to revise teacher education programs, curriculum, and language teaching approaches and methodologies by re-evaluating the process of instruction and assessment on the hope for better individualized and MI-based process of language instruction and assessment.

The present research study concerned only prospective English teachers in an EFL context. Hence, the generalization of the results to other fields and language learning programs, e.g. primary and/or high school level, and even early years of higher education should be taken more cautiously. It is recommended, therefore, that other studies explore the relationship between MI theory, emotional intelligence, learning styles and academic achievement as well as other areas of language achievement such as four language skills, course scores (both formative and summative), learning strategies in different educational stages with different levels of language proficiency. Additionally, this study investigated the role of gender and age factors in the perceived level of the participants' MI, EI, and learning styles. Further research can investigate both main effect and interaction effect of these variables in relation to academic achievement, intelligence types, and learning preferences.

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LIST OF APPENDICES

Appendix A. Socio-demographic Information

Name:	**Surname:**			
Gender:	**Male:** ◯	**Female:** ◯		
Age :	**18-20** ◯	**21-23** ◯		**24 and above** ◯
Grade:	**Freshman** ◯	**Sophomore** ◯	**Junior** ◯	**Senior** ◯
Parental Education	**Mother**		**Father**	
	Uneducated ○ **Primary education** ○ **Secodary education** ○ **Higher education** ○		○ ○ ○ ○	
Occupation	**Employed:** **Father** ○	**Mother** ○	**Both** ○	

Appendix B. Emotional Intelligence Scale

Dear Respondent **Directions**: This form of ***Emotional Intelligence Scale*** is for Trainee teachers. You will find statements about emotional intelligence. Please think about yourself as a trainee teacher for each statement below. Each of the following items asks you about your emotions or reactions associated with emotions. After deciding whether a statement is generally true for you, use the 5-point scale to respond to the statement. Please mark the ''1'' if you strongly disagree that this is like you, the ''2'' if you somewhat disagree that this is like you, ''3'' if you neither agree nor disagree that this is like you, the ''4'' if you somewhat agree that this is like you, and the ''5'' if you strongly agree that this is like you. There are no right or wrong answers. Please give the response that best describes you. ***Be sure that your answers will be kept confidential.***	**1.Strongly disagree**	**2.Disagree**	**3.Neither disagree nor agree**	**4.Agree**	**5.Strongly agree**

1. I know when to speak about my personal problems to others.	1	2	3	4	5
2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.	1	2	3	4	5
3. I expect that I will do well on most things I try.	1	2	3	4	5
4. Other people find it easy to confide in me.	1	2	3	4	5
5. I find it hard to understand the non-verbal messages of other people.*	1	2	3	4	5
6. Some of the major events of my life have led me to re-evaluate what is important and not important.	1	2	3	4	5
7. When my mood changes, I see new possibilities.	1	2	3	4	5
8. Emotions are one of the things that make my life worth living.	1	2	3	4	5
9. I am aware of my emotions as I experience them.	1	2	3	4	5
10. I expect good things to happen.	1	2	3	4	5
11. I like to share my emotions with others.	1	2	3	4	5
12. When I experience a positive emotion, I know how to make it last.	1	2	3	4	5
13. I arrange events others enjoy.	1	2	3	4	5
14. I seek out activities that make me happy.	1	2	3	4	5
15. I am aware of the non-verbal messages I send to others.	1	2	3	4	5
16. I present myself in a way that makes a good impression on others.	1	2	3	4	5
17. When I am in a positive mood, solving problems is easy for me.	1	2	3	4	5
18. By looking at their facial expressions, I recognize the emotions people are experiencing.	1	2	3	4	5
19. I know why my emotions change.	1	2	3	4	5
20. When I am in a positive mood, I am able to come up with new ideas.	1	2	3	4	5
21. I have control over my emotions.	1	2	3	4	5

22. I easily recognize my emotions as I experience them.	1	2	3	4	5
23. I motivate myself by imagining a good outcome to tasks I take on.	1	2	3	4	5
24. I compliment others when they have done something well.	1	2	3	4	5
25. I am aware of the non-verbal messages other people send.	1	2	3	4	5
26. When another person tells me about an important event in his or her life, I almost feel as though I experienced this event myself.	1	2	3	4	5
27. When I feel a change in emotions, I tend to come up with new ideas.	1	2	3	4	5
28. When I am faced with a challenge, I give up because I believe I will fail.*	1	2	3	4	5
29. I know what other people are feeling just by looking at them.	1	2	3	4	5
30. I help other people feel better when they are down.	1	2	3	4	5
31. I use good moods to help myself keep trying in the face of obstacles.	1	2	3	4	5
32. I can tell how people are feeling by listening to the tone of their voice.	1	2	3	4	5
33. It is difficult for me to understand why people feel the way they do.*	1	2	3	4	5

* The asterisks indicate negatively- worded items.

Appendix C. Learning Styles Inventory

The Learning-Style Inventory describes the way you learn and how you deal with ideas and day-to-day situations in your life. Below are 12 sentences with a choice of endings. Rank the endings for each sentence according to how well you think each one fits with how you would go about learning something. Try to recall some recent situations where you had to learn something new, perhaps in your job or at school. Then, using the spaces provided, rank "4" for the sentence ending that describes how you learn *best*, down to "1" for the sentence ending that seems least like the way you learn. Be sure to rank all the endings for each sentence unit. Please do not make ties. ***Be sure that your answers will be kept confidential***. Thank you for your participation.

Sample:

1. When I learn: 2_ I am happy. 1__ I am fast. 3___ I am logical. 4___ I am careful.

Remember: 4 = *most* like you **3** = *second most* like you **2** = *third most* like you **1** = *least* like you

1. When I learn:	☐ I like to deal with my feelings.	☐ I like to think about ideas.	☐ I like to be doing things.	☐ I like to watch and listen.
2. I learn best when:	☐ I listen and watch carefully.	☐ I rely on logical thinking.	☐ I trust my hunches and feelings.	☐ I work hard to get things done.
3. When I am learning:	☐ I tend to reason things out.	☐ I am responsible about things.	☐ I am quiet and reserved.	☐ I have strong feelings and reactions.
4. I learn by:	☐ feeling.	☐ doing.	☐ watching.	☐ thinking.
5. When I learn:.	☐ I am open to new experiences.	☐ I look at all sides of issues.	☐ I like to analyze things, break them down into their parts.	☐ I like to try things out.

6. When I am learning:	☐ I am an observing person.	☐ I am an active person.	☐ I am an intuitive person.	☐ I am a logical person.
7. I learn best from:	☐ observation.	☐ personal relationships.	☐ rational theories.	☐ a chance to try out and practice.
8. When I learn:	☐ I like to see results from my work.	☐ I like ideas and theories.	☐ I take my time before acting.	☐ I feel personally involved in things.
9. I learn best when:	☐ I rely on my observations.	☐ I rely on my feelings	☐ I can try things out for myself.	☐ I rely on my ideas.
10. When I am learning:	☐ I am a reserved person.	☐ I am an accepting person.	☐ I am a responsible person.	☐ I am a rational person.
11. When I learn:	☐ I get involved.	☐ I like to observe.	☐ I evaluate things.	☐ I like to be active.
12. I learn best when:	☐ I analyze ideas.	☐ I am receptive and open-minded	☐ I am careful.	☐ I am practical.

Appendix D. Open-ended Questions

1. Could you name some of intelligence types that you think most contribute to your foreign language proficiency as a prospective English teacher?

2. Which of the following factors largely affect your academic achievement?

☐Multiple Intelligences

☐Emotional Intelligence

☐Learning Styles

3. Could you please name the most frequently used learning styles in foreign language learning that you think help you increase your academic achievement?

Appendix E. Gönülü Katılım Formu

Bu çalışma, Jafar Pourfeiz tarafından Hacettepe Üniversitesi'nde devam etmekte olduğu doktora tez çalışmaları kapsamında, Prof. Dr. Mehmet Demirezen sorumluluğunda yürütülmektedir. Çalışmanın amacı, Çoklu Zeka Kuramı'nın ve *öğrenme stilleri*'nin, İngiliz Dili Egitimi bölümünde kayitli olan birinci ve dördüncü sınıf oğrencilerinin dil öğrenimilerinin uzerindeki etkilerinin neler olduğunu ortaya koymaktir. Katılımcıların *öğrenme stilleri*'nin ve ne tür çoklu zekaya sahip oldukari, yaklaşık 45 dakika süren, üç farklı anket ile tespit edilecektir.

Bu çalışmaya katılım tamimiyle gönüllülük temelinde olmalıdır. ***Cevaplarınız tamimiyle gizli tutulacak ve sadece araştırmacı tarafından değerlendirilecektir***; ***elde edilecek bilgiler ve sonuçlar tamamen anonim kalarak araştırmacının doktora tezinde kullanılacaktır***. Anketler genel olarak kişisel rahatsızlık verecek soruları içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden ötürü kendinizi rahatsız hissederseniz cevaplama işini yarıda bırakıp çıkmakta serbestsiniz. Böyle bir durumda, anketi uygulayan kişiye, anketleri tamamlamadığınızı söylemek yeterli olacaktır. Anketler sonunda, bu çalışmayla ilgili sorularınız cevaplanacaktır.

Bu çalışmaya katıldığınız için şimdiden teşekkür ederiz.

Çalışma hakkında daha fazla bilgi almak için Hacettepe Üniversitesi, İngiliz Dili Eğitimi Bölümü öğretim üyelerinden Prof. Dr. Mehmet Demirezen (Tel: 0 312 297 85 85; E-posta: md49@hacettepe.edu.tr) ya da Jafar Pourfeiz (Tel: 0539 594 81 16; E-posta: ipenglish_1344@yahoo.com) ile iletişim kurabilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip çıkabileceğimi biliyorum. Verdiğim bilgilerin araştırmacının doktora tez çalışmalarında kullanılmasını kabul ediyorum. (Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).

İsim Soyad Tarih İmza

----/----/-----

Appendix F.

Re: The MIDAS

People

- Ayten Iflazoglu
-
- Dec 3, 2012

To

- me

Attachments

- MIDAS Questionnaire- 2 col.doc
- Midasuygulama_turkce93_son.doc
- 93MIDAS_yanit.doc

Download All

Dear Pourfeiz,
I add to this email both English and Turkish versions of MIDAS scale and necessary file which you want.
If you have any question please do not hesitate to ask
Best
Ayten Iflazoglu Saban

----- Original Message -----
From: jafar pourfeiz
To: iayten@cu.edu.tr
Sent: Tuesday, November 27, 2012 1:28 AM
Subject: The MIDAS

Dear Professor

This is Jafar Pourfeiz. I'm Ph.D. candidate at ELT department of Hacettepe university in Ankara. I'm doing research on Multiple Intelligences as part of my dissertation . In Saban et al, (2012) you have carried out a study to adapt MIDAS to Turkish. I need both English and Turkish versions of MIDAS to complete my dissertation. I'd be so grateful if you send me the scale and necessary profiles. Your contribution is highly appreciated and will certainly be cited in the study.

All the best

Jafar Pourfeiz

Appendix G.

Re: MIDAS Research

People

- Branton Shearer
-
- Apr 30, 2013

To

- me

Attachments

- Manual_Rev_Text.doc
- Manual Contents.doc
- Appendix_Part_1.doc
- Appendix_Part_2.doc

Download All
Attached are the four Word files that constitute the MIDAS eManual.

Please confirm that you have received these.

best, Branton

On Tue, Apr 30, 2013 at 10:59 AM, Branton Shearer <sbranton@kent.edu> wrote:

> Dear Jafar,
>
> Your Application looks good. The results should be interesting. I am not familiar with MacKenzi's 3 domains. I am more familiar with the functional divisions of Academic and Creative and perhaps everyday thinking.....
> These are reflected to some degree in my Intellectual Style scales.
>
> I have attached the MIDAS answer form that you may print and use if you want to. Note that the response choices go from one (1) to five (5) with six (6) being "I don't know or MIssing."
>
> I"ve also attached a sample SPSS file with 119 items. it1 through it119 as variable labels.
>
> I will next send as 4 attachments the eManual.
>
> Best of luck with your research planning.
> Regards,
> Branton Shearer

EK 1. ETİK KURUL ONAY BİLDİRİMİ

HACETTEPE ÜNİVERSİTESİ
ANKARA

Yazı İşleri Müdürlüğü
Sayı : B.30.2.HAC.0.70.00.01/ 497-592 13 Şubat 2013
Konu :

SOSYAL BİLİMLER ENSTİTÜSÜ MÜDÜRLÜĞÜNE

İlgi: 15.01.2013 tarih ve 292 sayılı yazınız

Enstitünüz Yabancı Diller Eğitimi Anabilim Dalı İngiliz Dili Eğitimi Bilim Dalı öğrencilerinden **Jafar POURFEIZ**'in, **Prof.Dr. Mehmet DEMİREZEN** danışmanlığında yürüttüğü **"Çoklu Zeka Kuramının ve Öğrenme Stillerinin Dil Öğrenimine Etkileri"** başlıklı tez çalışması, Üniversitemiz Senatosu Etik Komisyonunun 06 Şubat 2013 tarihinde yapmış olduğu toplantıda incelenmiş olup, etik açıdan uygun bulunmuştur.

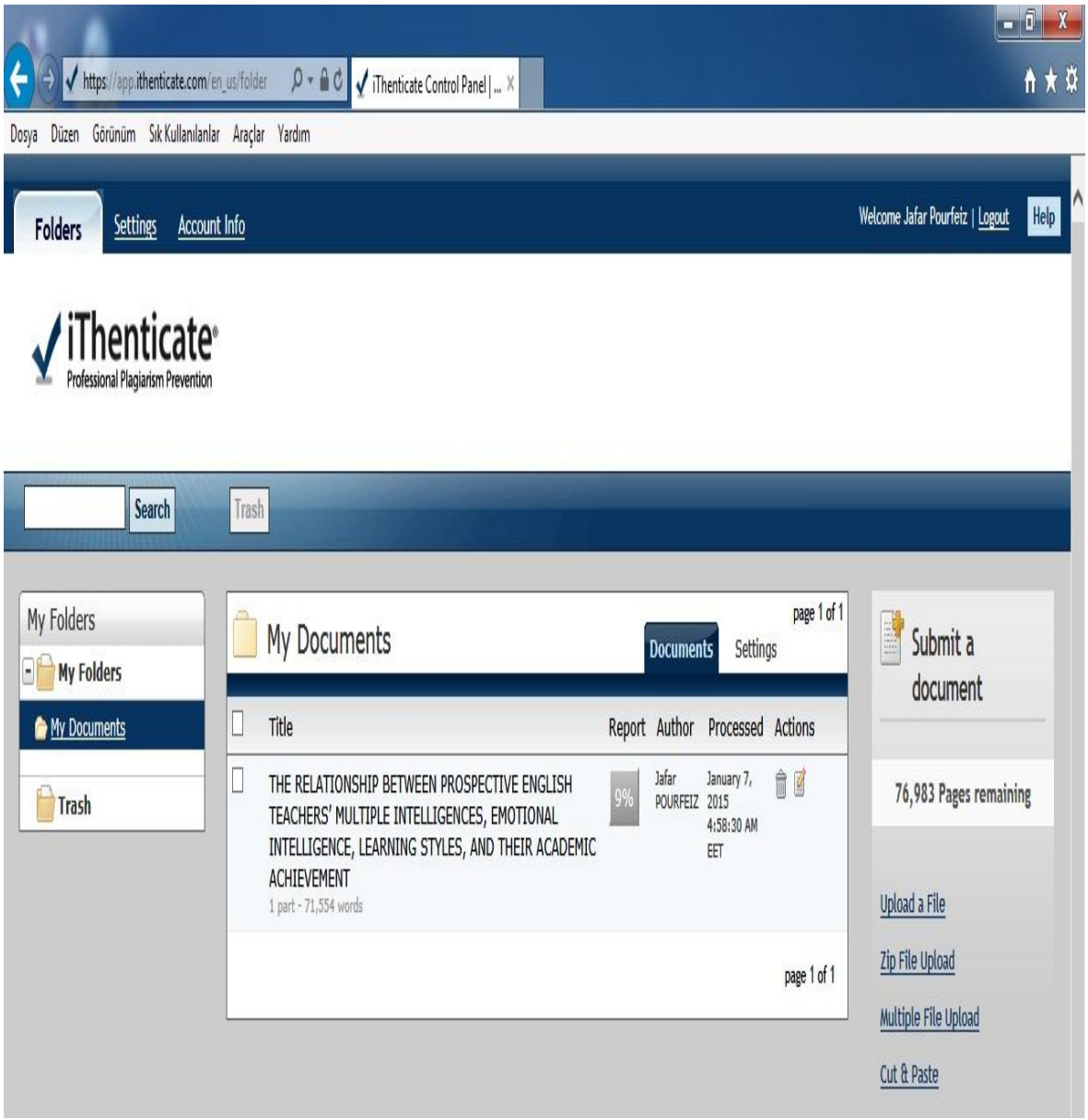
Bilgilerinizi ve gereğini saygılarımla rica ederim.

Prof.Dr. Ömer UĞUR
Rektör a.
Rektör Yardımcısı

Ek: Tutanak

HACETTEPE Üniversitesi
Sosyal Bilimler Enstitüsü
Tarih: 15.02.2013
Sayı: 1069

EK 2. ORJİNALLİK RAPORU



ÖZGEÇMİŞ

Kişisel Bilgiler

Adı Soyadı	Jafar POURFEIZ
Doğum Yeri	IRAN
Doğum Tarihi	24.08.1965

Eğitim Durumu

Lise	Lokman Lisesi, Khoy/IRAN	1983
Lisans	İngliz Dili Eğitimi, Allameh TABATABAEI/ TAHRAN/IRAN	1991
Yüksek Lisans	İngliz Dili Eğitimi, Azad Üniversitesi, Tabriz, Iran,	1998
Yabancı Dil	İngilizce: Okuma (Çokiyi), Yazma (Çokiyi), Konuşma (Çokiyi) Dinleme Çokiyi) Farsça: Okuma (Çokiyi), Yazma (Çokiyi), Konuşma (Çokiyi), Dinleme Çokiyi)	

İş Deneyimi

Stajlar	-	Buraya tarih aralığı yazılacak
Projeler	-	
Çalıştığı Kurumlar	Iran: Milli eğitim bakanliği, Payame-noor ünversitesi, Azad üniversitesi,Urmia Üniveritesi (khoy branch) Türkiye: Yabanci Diller Yüksekokulu (YDYO), Hacettepe Ünıversitesi, Modern Diller Birimi	1983-2010 15.08.2014 -

Akademik Çalışmalar

Yayınlar (Ulusal, uluslararası makale, bildiri, poster vb gibi.)

Pourfeiz, J. (2003a). Zaban-E-Pish Daneshgahi I (English for Prep School). Tehran: Sabzan.

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Seminer ve Çalıştaylar

-

Sertifikalar

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İletişim

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