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**The Effect of Metalinguistic Awareness and the Previously
Learned Foreign Languages on Fourth Language Acquisition by
Adult Learners**

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Thesis for obtaining a PhD degree in the Multilingualism Doctoral School of the University
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Abstract

The dynamics and complexity of the multilingual system have attracted many linguists to study and explore this phenomenon. What factors might support or impede multilingual acquisition are quite controversial. Some researchers concentrate on the linguistic system itself. Others believe that social and educational bonds are the driving forces in this process. The overall aim of this study is to contribute to our understanding of the nature and the driving force of this multidimensional phenomenon in the Syrian context. The present study investigates the impact of metalinguistic awareness and previously learned foreign languages on learning German by adult students at the Higher Language Institute (HLI)/Damascus University and the Arab International University (AIU). The main framework of this study is the Dynamic Model of Multilingualism by Herdina & Jessner (2002). The first group of participants contains 118 FL true-beginner learners taking German courses at the HLI. In addition, eight German language teachers were interviewed. The second group of participants contains 83 FL true-beginner learners at the Arab International University as well as 2 teachers. To conduct this study, the author used the following tools: The first one is a questionnaire to collect background information about the students' language history. C-Tests were used to measure the students' proficiency in English and French. The third instrument contained two metalinguistic tests in English and German. A German exam was conducted at the end of the course to evaluate the learners' German language achievement. The data analysis showed that there is a significant correlation between English and French language proficiency and the acquisition of the German language. Moreover, the linear regression test demonstrated that English and German metalinguistic test scores were able to predict the German exam grades. In addition, the participants' level of education and age were among the variables that were found to impact German language acquisition. Nevertheless, gender and motivation were not significant factors while acquiring German.

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Table of Abbreviations

- Arab International University (AIU)
- Dynamic Model of Multilingualism (DMM)
- Dynamic System Theory (DST)
- English as a Foreign Language (EFL)
- English Language Teaching (ELT)
- First Language (L1)
- First Language Acquisition (FLA)
- Higher Language Institute (HLI)
- Language System (LS)
- Metalinguistic awareness (MLA)
- Multilingualism factor (M-factor)
- Multilingualism Research (MR)
- Second Language (L2)
- Third Language (L3)
- Third Language Acquisition (TLA)

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Studying the phenomenon of multilingualism has been a challenging topic in the last three decades because of its complex and diverse nature. The notion of multilingualism is more prevalent than the monolingualism one as there are around 7,139 languages in the world and about 200 independent countries according to Eberhard, Gary, & Charles (eds, 2021). de Zarobe & de Zarobe (2015) affirm that multilingualism is a reflection of the speakers' society. This reflection can be seen in the Syrian context during the crisis. Despite the ongoing war in Syria, adult students aspire to master foreign languages as they are regarded as a prerequisite to gain knowledge and seek a better future. However, the Syrian crisis and sanctions on Syria isolated the students from the rest of the world. Before 2011, there were international institutes where learners could learn foreign languages from native speakers such as the British Council and the Goethe Institute, moreover, they were able to get authentic materials from these international institutes' libraries or online. In 2013, most foreign institutes and embassies closed due to sanctions. As a result, adult students do not have the chance to communicate or learn a foreign language from native speakers. Moreover, they cannot reach authentic materials via the internet because of electricity and internet rationing. For that reason, foreign language teachers and learners have to resort to internal factors such as similarities between the foreign languages and metalinguistic skills, rather than external resources to fill this gap. This recent phenomenon induced the need to study and explore the best ways used around the world to enable students to benefit from their previously learned languages and cognitive skills to facilitate the acquisition process of learning new foreign languages.

Research in the field of third language acquisition (TLA) focuses on the intertwined factors, which enhance the learners' ability while acquiring an additional language (see Cenoz, 2013a; Herdina & Jessner, 2002; Jessner, 2008c; Leung, 2007). Several factors can affect the multilingual development. For example, foreign language learners can benefit from their previously learners foreign languages' skills and ability to understand or learn an additional language (Jessner, 1998; Hufeisen, 2003). However, studying TLA is rather a complex process. The complexity of TLA can be attributed to the following factors as stated by Jessner (2008b):

1. The various routes while acquiring the third language

2. Individual differences factors
3. The educational context
4. Psychological and linguistic factors

According to Dynamic Systems Theory (DST), multilingual development is complex and nonlinear due to different interacting variables that play a decisive role in the multilingual system. De Bot et al. (2007, p. 14) pinpoint out to the multilingual learning complexity as the following:

From a DST perspective, a language learner is regarded as a dynamic subsystem within a social system with a great number of interacting internal dynamic sub-sub systems, which function within a multitude of other external dynamic systems. The learner has his/her own cognitive ecosystem consisting of intentionality, cognition, intelligence, motivation, aptitude, L1, L2, and so on.

Another factor that has been found influential in multiple language learning is metalinguistic awareness. TLA studies affirm the superiority of bilingual learners over monolinguals because of the increased level of metalinguistic awareness, which facilitates the acquisition of an additional language as it has catalytic effects (Herdina & Jessner, 2002, Kemp, 2001). Moreover, foreign language literacy facilitates learning an additional language by focusing the learners' attention on the common features among the languages (Sanz, 2000; Thomas, 1988).

Metalinguistic awareness reinforces different skills to supplement one's linguistic competence while learning an additional language. Bono & Stratilaki (2009, p. 212) proposed a model to represent the bilingual asset in L3 learning (see Figure 1.1).

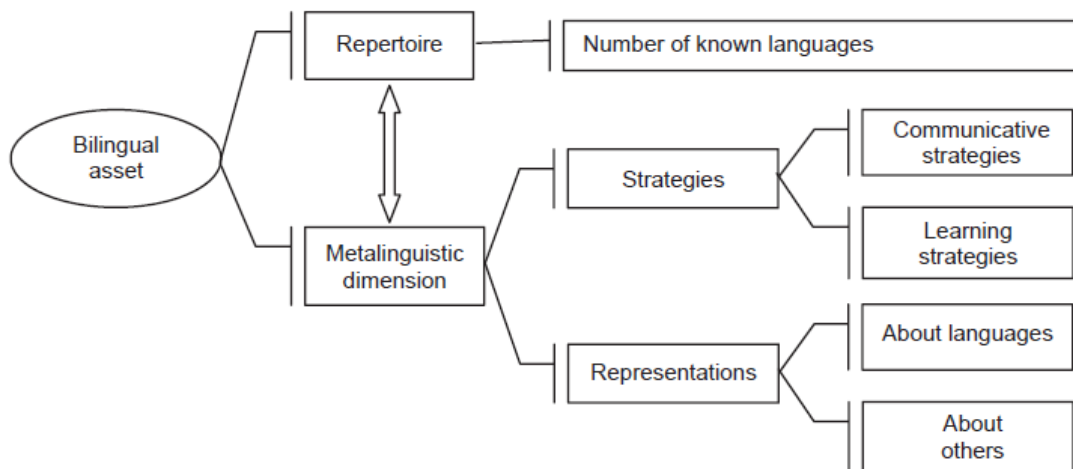


Figure 1.1 The bilingual asset in L3 learning by Bono & Stratilaki (2009)

Some characteristics are associated with metalinguistic awareness in the multilingual system according to Jessner (2006):

- (1) Divergent and creative thinking (e.g., a wider variety of associations, original ideas);
- (2) Interactional and/or pragmatic competence (cultural theorems of greeting, thanking, etc.);
- (3) Communicative sensitivity and flexibility (language mode); and
- (4) Translation skills that are considered a natural trait in the majority of multilingual.

Multilingual Learning in the Syrian Context

In Syria, Multiple language learning is part of the Education Ministry and Higher Education Ministry agendas. Syrian students learn English at the age of four in private schools, and public schools introduce English at the age of six. At the start of preparatory education, students start learning the French language as a second foreign language for six years until the end of secondary education. In undergraduate education, students can choose their preferred third foreign language. For example, an undergraduate student at the Arab International University can choose either German or Spanish as their third foreign language. However, the unprecedented number of the participants who want to learn the German language induced the need to examine the process of the German language acquisition process at the HLI and AIU. In addition, the Higher Language Institute (HLI) at Damascus University provides foreign language courses in English, French, Persian, Spanish, and German with low registration fees for learners above the age of 18. Nevertheless, many challenges face foreign language learners in Syria. For instance, Syrian learners are deprived of taking international proficiency exams in Syria. They have to travel to a neighboring country such as Jordan, Lebanon, or Iraq to take the IELTS or TOEFL exams.

Despite the ample research about multiple language learning and TLA, very little is known about multiple languages in the Syrian context. In light of the previously mentioned facts in the Syrian context and previous studies about TLA, it is highly important to study and examine the impact of the previously learned foreign languages and metalinguistic awareness on learning German as a third foreign language by adult learners at the Higher Language Institute and the Arab International University. The current research is situated in the field of multiple language acquisition and addresses the role of the non-native languages, namely English and French while acquiring German as a third foreign language. However, when it

comes to specifying the factors that influence third language acquisition, one of the most salient variables is metalinguistic awareness (Herdina & Jessner, 2002; Jessner, 1999). TLA studies confirm that metalinguistic awareness is the key element in the multilingual system and can have a positive impact on multiple language learning. Multilingual development can be also linked to the social and psychological factors and the mode of learning whether it is natural or instructive which will be explored also in this study.

1.2 Statement of the Problem

Multilingual adult learners face many problems while acquiring a new language, which can be attributed to the fact that they lack the opportunities to communicate with native speakers or teachers of the foreign language. Adult learners of the German language in Syria face the same problem because of the current crisis that deprived them of the chance to use the language in their surroundings or with native speakers. Some variables may play a facilitator role and provide them the required skills to acquire German as a third foreign language. The general aim of the study is to investigate the role of these variables on learning German by Syrian adult learners at the Higher Language Institute and Arab International University.

1.3 Aims of the Research

This study aspires to investigate the role of the intertwined factors while acquiring German as a third foreign language/fourth language and suggest some solutions to the presented problem. The terms third foreign language/ fourth language are used interchangeably in this context. The research aims can be stated as the following:

- 1) To examine the impact of metalinguistic awareness on acquiring German as a third foreign language by Syrian adult learners.
- 2) To investigate the relationship between the previously learned foreign languages and the acquisition of German.
- 3) To investigate the impact of age, education, and gender on learning German as a third foreign language.
- 4) To explore the relationship between language exposure and use of English on learning the German language.
- 5) To study the role of the learners' self-efficacy and motivation in learning German.
- 6) To examine the relationship between the used strategies and German language acquisition

1.4 Research Questions

In the light of the previously mentioned aims, the following questions are presented.

Q1: Does a foreign language repertoire play a facilitator role while acquiring an additional language?

Q2: What is the impact of metalinguistic awareness on fourth language acquisition?

Q3: What is the relationship between the degree of exposure and use of the foreign languages and fourth language acquisition?

Q4: Can other factors influence the fourth language acquisition?

1.5 Research Hypotheses

H1: English and French Proficiency can enhance the German language performance.

H2: Metalinguistic awareness is linked to successful fourth language acquisition.

H3: The degree of exposure and use to English and French languages is associated with better fourth language acquisition.

H4: There are significant differences in the German exam scores according to the participants' motivation, self-efficacy, gender, strategy use, age, and educational background.

1.6 Significance of the Research

This research is in line with previous related studies on TLA and metalinguistic awareness (see Aronin & Jessner, 2015; Cenoz, 2013; De Angelis, 2005; Jessner, 1999, 2008c, 2015). However, investigating the role of the knowledge of foreign languages and metalinguistic awareness in the Syrian context presents research gap and may yield the following results:

1. The results of this study could have a positive impact on the process of teaching German to true-beginner adult learners at the Higher Languages Institute and Arab International University as it sheds light on the positive role of the previously learned foreign languages.
2. The results of the present study may help instructors at the HLI and AIU get a better understanding of the significant role of metalinguistic awareness in enhancing learning German while teaching as a fourth language in the Syrian context.

1.7 Overview of the Research

The present dissertation is divided into six main chapters. The first chapter presents the complexity of fourth language acquisition, i.e. German language, in the Syrian context. It introduces the core topics that this research will address. Additionally, it outlines the research questions, hypotheses, and the significance of the study. Chapter 2 defines the multilingualism phenomenon and the area of TLA research in which the most outstanding models in the field of multilingualism acquisition research are presented. The variables, which are believed to affect multiple language acquisition, are discussed from the DMM perspective. It examines the role of the linguistic, cognitive, and psycholinguistic variables on fourth language acquisition.

Chapter 3 sheds light on the methodology in which the tools used to collect data from participants are outlined in detail. Chapter 4 demonstrates the results of the collected data in which the findings of the study are propounded in appropriate tables and figures. That chapter is divided into two main sections. The first section is allocated to presenting the results from the first part of the study i.e. from participants at the Higher Languages Institute. The second section demonstrates the data results from the second part of the study i.e. the Arab International University. Chapter 5 discusses the results by connecting them to the previous studies in the field of multilingualism and third language acquisition. The researcher concludes this study with a summary and some recommendations for future similar studies.

CHAPTER 2

THEORETICAL CONSIDERATIONS

2.1 Introduction

This chapter details the background theory and the general framework of the current study. This chapter will additionally shed light on the TLA studies, perspectives about the notion of multilingualism, and the different models that tackled this phenomenon. It also discusses the most important factors regarding TLA from the DMM perspective. Factors that are believed to affect multilingual learning such as metalinguistic awareness (Cenoz & Valencia, 1994; Jessner, 1999), previously learned foreign languages (Herdina & Jessner, 2002; Sanz, 2000; Swain et al., 1990), degree of exposure and use (Cantone, 2019) age (Cenoz, 2018; Torras & Celaya, 2001), gender (Spellerberg, 2011), and self-efficacy beliefs (Raofi et al., 2012) have been illustrated in this chapter. Lastly, the process of third language acquisition and an overview of the TLA research are presented at the end of the current chapter.

2.2 Current Perspectives on the Notion of Multilingualism

Defining the notion of multilingualism is quite controversial. No consensus has been reached to define this widespread phenomenon. Aronin (2019, p. 3) states that "multilingualism is a complex, vibrant and ever-intriguing phenomenon". Vetter & Jessner (2019, p. 2) explain this complexity as "there are various definitions of multilingualism depending on the research background and theoretical orientation".

Aronin (2019, p. 27) explains that multilingualism is a notion that is found on the individual and societal levels, and she states that it "denotes both the ability of humans to use three and more languages and social situations where such capacity is utilized". Li (2008, p. 4) defines a multilingual individual as "anyone who can communicate in more than one language, be it active (through speaking and writing) or passive (through listening and reading)".

The European Commission (2008) also reiterates that multilingualism is seen as "the ability of societies, institutions, groups, and individuals to engage, regularly, with more than one language in their day-to-day lives" (p. 6).

On the other hand, multilingualism has been classified by Bassetti and Cook (2011) according to the level of proficiency. They argue that most definitions cluster in two groups:

One considers that maximal proficiency to be necessary, while the other accepts minimal proficiency. Baker (2011) believes that a maximalist definition requiring native control of two languages is too extreme. Nevertheless, a minimalist definition that considers basic bilingualism with minimal competence to be also problematic.

Another definition of multilingualism was introduced by Skutnabb-Kangas (1981). She states that multilingualism has the following types depending upon the criteria used to categorize it:

- Definitions by origin that view multilingualism as a developmental phenomenon;
- Definitions by competence in which the linguistic competence in two or more languages are used as a criterion;
- Functional definitions are based on the functions that the use of language services for the individual or the community.

Moreover, there are social, psychological, or sociological approaches that define multilingualism in terms of the speakers' attitudes towards or identification with two or more languages. Herdina & Jessner (2002, p. 1) stress this fact by stating, "multilingualism, therefore, must not only be accepted as the linguistic norm, but it must also be realized that it is closely linked to the concepts of personal identity, ethnicity, and multiculturalism".

Many linguists assume that multilingualism can be listed under the umbrella of third language acquisition. Hufeisen (2020, p. 4) clarifies that reaching a comprehensive and specified definition is far-fetched to define this notion:

Only in the 1990s did it gain more intensive attention when the concept of L3 evolved and the question arose whether L3 is just an additional (and not separate) L2 and can be treated as just another L2 or whether the fact that (at least) three languages are involved makes a difference compared to two involved languages. This question has not yet been fully answered, and it will probably never be answered because theoretical viewpoints, decide whether a researcher considers L3 (or Ln) as just another L2 or whether s/he believes that L2 and L3 and Ln have to be studied in their own respective right.

The adopted vision of defining multilingualism in this study is in line with that presented by Herdina & Jessner (2002) in their Dynamic Model of Multilingualism. According to DMM "bilingual systems are variants of multilingual systems but not equated with multilingual systems since multilingualism ranges from monolingual acquisition, that is the learning of an L2 by a native speaker, to balanced bilingualism or even ambilingualism and to the command of three or more language systems to point out a few stages" (pp. 117–118).

2.3 Models of Multilingualism

The increasing interest in multilingualism has led many linguists to expand their models to cover bi/multilingual phenomena. A number of linguists during the last thirty years proposed different models to study and explore the notion of bi/multilingualism. Some models concentrated on bi/multilingual processing, which are based on models of speech production, while others combined different theories to study multilingual learning and acquisition in which they differentiate between L2 and L3 learning. These models are chronologically presented in the Table 2.1 and Table 2.2.

Table 2. 1 Multilingualism Processing Models

Model	Characteristics
Function Role Model by Sarah Williams & Björn Hammarberg (1998); Björn Hammarberg (2001a)	This model studies multilingual oral processing in which the L2 influences the acquisition of an L3.
Model of Plurilingual Processing by Michael Clyne (2003)	The Model Plurilingual Processing concentrates on the socio-cultural aspects while acquiring an L3 by immigrants.
Selection and Control Model by Kees de Bot (2004)	It concentrates on multilingual speech production and the factors that control the speech choice.

The first model by Williams & Hammarber (1998) and Hammarberg (2001) investigates the role of the first and second languages on third language production and acquisition. This model is based on a longitudinal study of a polyglot adult learner (Sarah Williams). Sarah is a native speaker of English, and she has ample knowledge of German as she lived there when she was six. She also learned French and Italian at university. It assumes that the L2 is the external supplier. Hammarberg (2001, p. 37) justifies this result as he sees it as:

A desire to suppress L1 as being 'non-foreign and to rely rather on an orientation towards a prior L2 as a strategy to approach the L3. German outranks French and Italian

based on the criteria of typology, proficiency and recency, and thus becomes established as the standard alternative in the role of external supplier.

This model assumes that the first and the second languages are equally activated while processing L3 production, nevertheless with varying functions i.e. one language is used to be the default supplier, while the other is utilized as the instrumental supplier. However, some linguists criticized this model as it is built on testing only one person.

On the other hand, De Bot (2004) and Clyne's (2003a) speech processing models are based on Levelt's speech processing model for monolinguals, which is based on empirical observations of adult monolinguals to examine the complex process of oral language production. This model claims that speech processing is carried out in three stages, namely the conceptualizer, the formulator, and the articulator. During the first stage of speech processing, the communicative needs are transferred into verbal messages. Next, these messages are connected with the suitable lexicon (lemma: syntactic and semantic information; and lexeme: the form of the information) by the formulator. After that, a surface structure is produced and wired into the articulator. De Bot's model concentrates on the state of the monitoring function in the bilingual speaker. This process is composed of two stages, namely the control and selection. However, Clyne's (2003a), which is based on immigrant multilinguals, focuses on the role of society on the notion of multilingualism. It claims that the speaker has multiple identities, in which motivation and social variables play a key role in multilingual development.

TLA researchers, who differentiated between L2 and L3 acquisition, evolved theoretical models to study the notion of multilingualism and the education perspectives of the multiple language learning in the light of TLA theory and empirical studies (see Table 2.2).

Table 2. 2 Multilingualism Models

Model	Characteristics
Foreign-language acquisition Model by Maria Groseva (2000)	The second language is the source of comparison and contrast while acquiring an L3.
Dynamic Model of Multilingualism by Philip Herdina and Ulrike Jessner (2002)	The DMM investigates the process of multilingual development by exploring the interrelated variables i.e. the individual, social and psycholinguistic factors. It emphasizes the key role of the M-factor in multilingual development.
Factor Model By Britta Hufeisen (2003) and Britta Hufeisen and Nicole Marx (2007)	The Factor Model emphasizes the differences between second and third language acquisition by describing the different interrelated factors.
Biotic Model of Multilinguality by Larissa Aronin & Muiris O' Laoire (2004)	This sociolinguistic model describes the multilingualism phenomenon in society. It concentrates on the societal aspect of multilingualism.
Multilingual Processing Spontaneous Model by Franz-Josef Meißner (2004)	It highlights the syntactic structure transfer from the second language to an additional one by true-beginner learners.
Entrenchment and Conventionalization Model By Hans-Jörg Schmid (2020)	This model tackles the multilingualism notion from a socio-cognitive basis in which the linguistic system is based on the interactions between communicative activities and social and cognitive exigencies

Grooseva (2000) was one of the first researchers who stressed the role of the second language on the subsequent languages i.e. L3 or Lx. The Foreign Language Acquisition Model by Grooseva (2000) asserts the role of L2 as a base for comparison and contrast while acquiring a third or an additional language as the first language is mostly acquired unconsciously i.e. metalinguistic awareness skills are hardly linked to L1. However, the case of L3 is completely different because these learners would be able to compare the new information with the previously acquired foreign language.

Dynamic Model of Multilingualism by Philip Herdina and Ulrike Jessner (2002)

The Dynamic Model of Multilingualism by Herdina & Jessner (2002) addresses the notion of multilingual acquisition and development. In particular, the dynamic nature of the interrelated variables in the multilingual system. Moreover, it touches upon aspects of language attrition and decline. The different linguistic, social, and psycholinguistic variables are seen as the basis of the dynamism and complex nature of this system. More details about this model, as it is the main framework of the current study, are presented in Section (2.5)

The Factor Model by Britta Hufeisen (2003)

Hufeisen (2003) and Hufeisen & Marx (2007) developed a model to explain the processes of first, second, third, and fourth language acquisition i.e. successive learning of multiple languages in their initial stages. This model investigates variables that can affect and control the process of learning languages, which mainly differentiate between L2 and L3 acquisition. The authors state that L2 learners are usually considered novice foreign language learners because they are unfamiliar with the process of learning additional language and inexperienced. In the same vein with Grooseva's model, they consider L2 as a *bridge language*. this would sound better as “However, there are bundles of factors, sharing common features, that will accompany each language acquisition process .These factors are accumulated as a result of the more acquired languages.

First language acquisition factors as subdivided into neurophysiological and learner external factors. Neurophysiological factors constitute the base of language acquisition and learning. If flawed, it would cause difficulty or deficiency in language acquisition. The second bundle of factors are the learner external factors, such as the learner surroundings such as the sociocultural and socio-economic variables. Moreover, the amount of input, learning conditions.

On the other hand, second language learning process includes affective, cognitive and language specific factors in addition to the previously mention factors pertaining to L1 acquisition. Emotional factors, including anxiety or motivation features, may help or hinder L2 learning. The features in the cognitive factors can be related to linguistic and metalinguistic awareness, learning strategies. These factors that affect TLA according to the Factor Model are illustrated as the following (see figure 2.1):

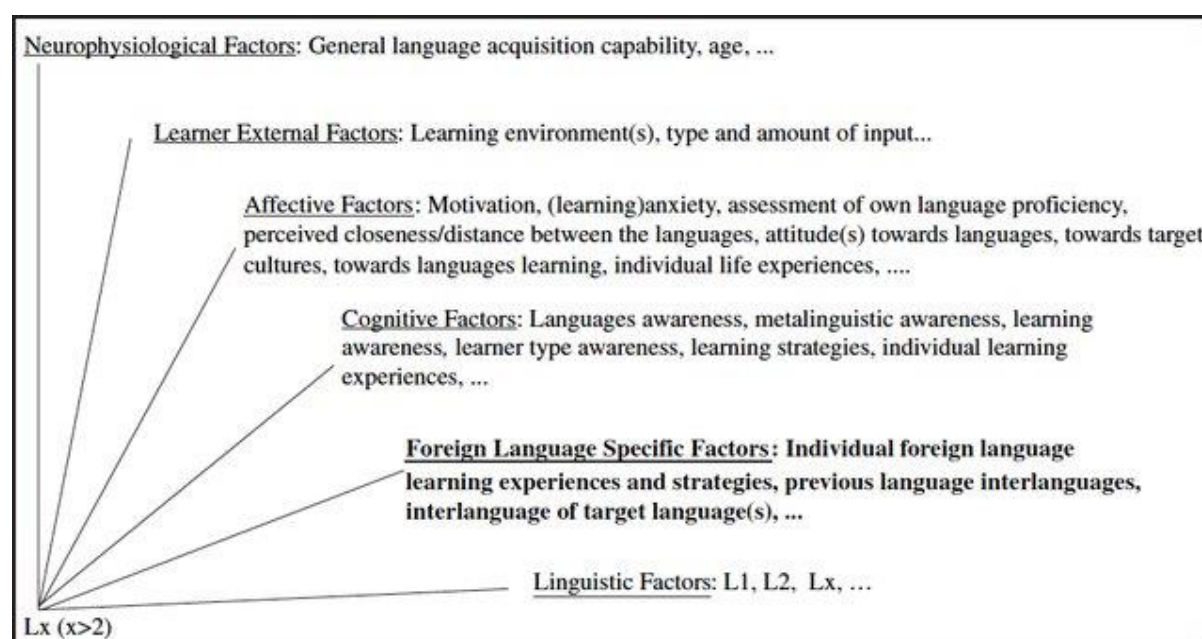


Figure 2. 1 Factor Model of Third Language Acquisition (pp. 312-313)

- *Neurophysiological factors* are the basis of general language learning/acquisition, production and reception capability. If one of these factors is hindered, language acquisition fails or is flawed.
- *Learner external factors* include socio-economic and sociocultural surroundings such as the learning traditions, and the type and the amount of input the learner receives. If, for instance, sufficient or qualitatively adequate input is lacking, acquisition/ learning is more difficult or even impossible.
- *Emotional factors* such as anxiety, motivation, or acceptance of the new target language are highly influential in the learning process. If a learner is for example very tense or afraid to speak the target language, this emotional state slows or even hinders the learning process and success.
- *Cognitive factors* include language awareness, linguistic and metalinguistic awareness, learning awareness, knowledge of one's own learner type, and the ability to employ learning strategies and techniques.
- *Linguistic factors* comprise the learner's L1 (s).

Biotic Model of Multilinguality by Larissa Aronin & Muiris O' Laoire (2004)

This ecologically-based model by Aronin & O' Laoire (2004) highlights the social and physiological environment's role on the multilingualism phenomenon. The authors differentiate between individual multilingualism and multilinguality. Individual multilingualism refers to the trilingual speaker, while multilinguality indicates the multilingualism notion on the community level. This model concentrates on the general characteristics of multilingualism in society. These characteristics are a clear reflection of the language behavior of the individuals in a setting, and they are listed as the following: complexity, multifunctionality, inequality of function, interrelatedness, fluctuation, self-balance, self-extension, non-replication, and variation.

Multilingual Processing Spontaneous Model by Franz-Josef Meißner (2004)

Meißner's model (2004) outlines the reception processes of an unknown language in written and oral texts. It constitutes the basis theory of most Eurocom projects. He assures that the learners of the typologically related languages have mutual receptive skills, i.e. the closest foreign language functions as a *transfer base* to the target language by comparing and contrasting the various structures of the two languages if the following conditions are fulfilled: a) the two languages are etymologically connected. b) The learners are proficient in that bridge language. c) The educational institution offers clear instruction to benefit from the previously learned language. At first, the learner form hypotheses about the grammar rules of the to-be-learned-language by linking it to the knowledge acquired from the previously learned foreign language. For instance, a Syrian learner of English as a foreign language would be able to decode German at the initial stage as a result of his prior knowledge of English. Next, the learner creates interlingual correspondence grammar rules, which is considered the source of crosslinguistic transfer cases between the acquired languages and to the additional one. During the third phase, the learner forms a multilingual intersystem of successful crosslinguistic transfer and inference processes, which facilitate understanding the additional language. These multilingual transfer processes include six transfer cases: 1. Transfer of the communicative strategies; 2. Interlingual processing procedures transfer; 3. Cognitive principle transfer; 4. Retroactive overlap transfer; 5. Learning strategies transfer; 6. Learning experiences transfer. The last stage is the storage of the metacognitive strategies as a result of the formed learning strategies in the target language.

Entrenchment and Conventionalization Model by Hans-Jörg Schmid (2020)

Schmid (2020) asserts that the linguistic system is an outcome of the different interactions between communicative activities and cognitive and social processes. He depicted the English language as a Turing machine in an attempt to portray how the language system works. The Turing machine analogy manifests the linguistic system as "a continuously running dynamic feedback system consisting of the interacting subsystems of usage, conventionalization, entrenchment, as well as some forces that affect these subsystems." (p. 9). Schmid (2020) illustrates that the conventionalization notion represents the social processes that institute and boost linguistic use. On the other hand, the term entrenchment describes the cognitive processes in the mind of the interlocutors. Next, the author demonstrates his vision of the general characteristics of the linguistic system in the light of the introduced Entrenchment and Conventionalization Model (EC-Model hereafter), and it can be summarized as the following: First, the linguistic system is seen as a usage-based apparatus, and it is established on function and interaction processes. This system is partially designed and structured by the domain-general cognitive abilities and mechanisms. In addition, this linguistic system is believed to have a socio-cognitive basis in which the language has resulted from the interactions between social and cognitive exigencies; the social basis in this model demonstrates identity, shows solidarity, and asserts power and authority. Schmid asserts the dynamic nature of the linguistic system. This linguistic system is continuously changing in unpredictable ways. Its variation is seen as an outcome of the language users' activities. The usage activities play a key role in the EC-Model. They provide the needed input in the conventionalization and entrenchment cycles, and at the same time, they are influenced by the social and cognitive agencies at all the language levels, from the forms and meanings of the utterances to the communicative aims and contexts. The author illustrates that the use of utterances encompasses events, participants' goals, and activities in the linguistic, situational, and social contexts. Conventionalization, on the other hand, is achieved by employing usualization and diffusion as feedback-loop processes. Different forces affect usage, conventionalization, and entrenchment to produce linguistic persistence, variation, and change. Some of the forces that affect usage are repetition, cognitive economy, salience, and power. The forces that influence conventionalization are co-semiosis, subjectivity, identity, mobility, and frequency of repetition. The entrenchment process can be affected by similarity and analogy, salience, and iconicity. According to the EC-Model, social variation is handled by usualization and diffusion processes. For example, the usualization process inculcates the conformity of utterances' profiles in certain contexts by interlocutors of

a certain community. On the other hand, diffusion inspires changes to suit these parameters by considering individual differences. This model is based on the English language system; nevertheless, the author assures that it can be applied to multiple language learning.

2.4 The Dynamic Model of Multilingualism by Herdina & Jessner (2002)

The Dynamic Model of Multilingualism (hereafter DMM) describes research on multilingualism as referring to any kind of multiple language acquisition. It also discusses the qualitative changes in language learning related to an increase in the number of languages involved in multilingual development and use (Jessner, 2008). The rationale behind choosing this model as the framework of this study can be attributed to the fact that it examines the learner variation, i.e. the internal and external variables, in an integrated manner in which all of these variables are parts of the system. Thus, this model acknowledges the context i.e. the impact of the cognitive, linguistic, social, psychological, and educational resources on the multiple language development and use.

Multilingual proficiency in DMM is seen as a fluctuating construct rather than a stable one. Jessner (2017, p. 5) defined multilingual proficiency as "a cumulative measure of psycholinguistic systems in contact". Multilingual development has negative and positive growth to suit the perceived communicative needs of the learners' on the social and psychological levels.

A key factor in this model is the Multilingualism or the M-factor which is defined as "a set of skills and abilities that the multilingual user develops owing to her/his prior linguistic and metacognitive knowledge" (Jessner, 2008b, p. 275). The M-factor is an emergent property that can contribute to the catalytic or accelerating effects in TLA. The key variable in the M-factor is metalinguistic awareness, which consists of a set of skills or abilities that the multilingual user develops due to her/his prior linguistic and metacognitive knowledge. The multilingual system, according to DMM, is affected by the initial state, and it is conditioned by the interaction of the learners' multiple languages (e.g. Todeva and Cenoz, 2009). De Bot et al. (2007, p. 8) confirm the importance of the initial state " the development of some dynamic systems appears to be highly dependent on their initial state, minor differences at the beginning may have dramatic consequences in the long run". This butterfly effect is one of the key characteristics of the dynamic systems in the development of Lx. According to the DMM model, both internal and external factors can cause a change in the multilingual system. Larsen-Freeman (2014, p. 15) states, "the systems with different initial conditions follow different trajectories, leading to divergent outcomes".

According to DMM, the development of multilingualism is complex, dynamic, and nonlinear, and it cannot be predicted. Moreover, different factors such as metalinguistic awareness (Jessner, 2006), language learning strategies (Kemp, 2001 & 2007), and cross-linguistic knowledge (James, 1996) can enhance language learning in educational contexts. Studying the multilingualism notion requires combining different approaches like that in the DMM.

2.4.1 The Features of the Dynamic Model of Multilingualism

(1) In the DMM, the focus is on the development of individual language systems (LS1/LS2/LS3/LS4, etc.). The multilingual system is dynamic and adaptive and is accordingly characterized by continuous change and nonlinear growth.

(2) Psycholinguistic systems, according to the DMM, are defined as open systems depending on psychological and social factors. The linguistic aspects of individual multilingualism are shaped by sociolinguistic settings and context. The ecological model of multilingualism, which was introduced by O' Laoire & Aronin (2004), confirms that multilingualism reflects many aspects of identity. Moreover, the social and cultural factors play a role in structuring types of multilingualism. Language needs change according to the interaction between the social context, the physical environment, and the cognitive context i.e. task (de Bot, 2000).

(3) The perceived communicative needs of the multilingual speaker shape the language choice and use. These needs are psychologically and sociologically determined. For example, the speaker decides which language to use with whom and in which situation, and when and why another language should be added to the multilingual repertoire.

(4) Language maintenance is determined by the system's stability. If not enough time and energy are spent on refreshing the knowledge of an L2 or L3, the learner will lose access to these languages gradually. Therefore, positive growth can counteract the negative growth that will eventually result in language attrition or gradual language loss.

(5) Language systems are interdependent rather than autonomous which means that the behavior of each language system depends on the behavior of previous and subsequent systems.

(6) The holistic approach is a prerequisite to understanding the dynamic interaction between the complex systems in multilingualism. Individual cognitive factors such as motivation, anxiety, language aptitude, and self-esteem as well as social factors can influence the linguistic

aspects of the multilingual system. The dynamic view of multilingualism assumes that the presence of one or more language systems affects the development of the overall multilingual system .

According to DMM, the proficiency of the multilingual learners has resulted from the interaction between the different psycholinguistic systems (LS_1, LS_2, LS_3, LS_n), cross-linguistic interaction (CLIN), and the M(ultilingualism)-factor (M-factor) as it can be seen in the following formula:

$$(LS_1, LS_2, LS_3, LS_n + CLIN + M\text{-factor} = MP)$$

2.5 The M-factor

The multilingualism factor (hereafter M-factor) is seen as the cornerstone element in TLA or multilingual proficiency. Herdina & Jessner (2002, p. 131) define the M-factor as skills that are:

Developed in the multilingual speakers. These skills show several characteristics clearly distinguishing the monolingual from the multilingual speaker and are taken to include skills in language learning, language management, and language maintenance.

A key component of this M-factor is metalinguistic awareness. Malakoff (1992, p. 512) illustrates that metalinguistic awareness "allows the individual to step back from the comprehension or production of an utterance to consider the linguistic form and structure underlying the meaning of the utterance". Metalinguistic awareness is regarded as one of the positive outcomes of the learner's cognitive development (Vygotsky, 1962). To be metalinguistically aware, then, is to know how to approach and solve certain types of problems that themselves demand certain cognitive and linguistic skills. Jessner (2017, p. 5) describes metalinguistic awareness as "part of the multilingualism factor which also relates to cognitive aspects of multilingual learning such as an enhanced multilingual monitor and/or catalytic effects of third language learning". Creativity and information reorganization are developed skills of highly metalinguistically aware learners (Hamers & Blanc, 1989).

Many TLA studies highlighted the important role of MLA and considered it as the key component in multilingual competence (Herdina and Jessner, 2002; Jessner, 2006). A recent study was conducted by Rauch et al. (2012). The researchers collected data from 299 secondary school learners (158 are monolinguals/German & 141 are bilinguals/German and Turkish) to examine the role of biliteracy (German and Turkish) and metalinguistic awareness on L3 reading proficiency/English. The researchers used the cognitive part of the LAT test by Fehling

(2008) to measure metalinguistic awareness, which included unknown languages (Swedish and Dutch). The data analysis showed also a positive relation between L3 reading proficiency and metalinguistic awareness. The researchers concluded that "the beneficial effects full biliteracy has on L3 reading proficiency are due to a better metalinguistic awareness in full biliterates" (p. 414).

Studies in the field of multilingual acquisition show that multilingual learners have high levels of metalinguistic awareness (Bono & Stratilaki, 2009; Jessner, 1999, 2006). For example, Thomas (1992) conducted a comparative study about bilingual students (English and Spanish) who are learning French as an L3, and monolinguals/English who are learning French as an L2 at Texas A&I University. The participants completed tasks modified from Elbaum's (1989) Implicit Theories Assessment to explore the beliefs of the students about the ideal metalinguistic awareness activities. The results show that bilingual students have a more conscious awareness of the language's system than monolinguals. In addition, she confirms that metalinguistic awareness can play a positive role while learning a third language because bilingual learners were able to link "awareness of forms with awareness of function" (p. 541).

2.6 Measuring Metalinguistic Awareness

Many studies measured metalinguistic awareness through learners' grammaticality judgment, in particular those that entail error correction and justifications. Bialystok (1987) proposed a dual component model that is based on the analysis of linguistic knowledge and control of linguistic processing. Controlling the linguistic process is an executive function, and it is responsible for controlling and directing attention to select and integrate the information. Bialystok (1988) illustrates that the control process entails selective attention in which the learner monitors and regulates linguistic information. Learners employ the control process to solve metalinguistic problems. These two components are independent and in charge of different processing aspects. The process of paying attention to the input aspects that might not be usual, and it is expected to involve a greater demand for control (Bialystok, 1992). Tasks that require sentence grammaticality judgment represent a reflection of metalinguistic awareness because learners have to access and reflect upon their linguistic knowledge to decide whether these sentences are correct or incorrect and justify and elaborate their answers. For example, Renou (2001) carried out a study that used a grammaticality judgment test in written and oral form to measure metalinguistic awareness and examine its influence on acquiring French as an L2 by sixty-four university participants with English as an L1. The findings of

this study link metalinguistic awareness to second language proficiency. Renou (2001, p. 259) explains that:

Correlations between the oral judgment test, the written judgment test and the global score on the French Proficiency Test for the entire sample provide evidence that the higher a learner's MLA, as defined by the score on the judgment tests, the higher the score is likely to be on the French Proficiency Test.

Also, other tests have been used to measure metalinguistic awareness. For example, Pinto et al. (1999) developed a comprehensive test for three age groups (MAT-1 for children between 4-6), (MAT-2 for children between 9-13), and (MAT-3 for adults above 16), that focused on the linguistic and metalinguistic awareness dimensions in syntax, figurative language, and grammaticality judgment. Each test contains a linguistic section and a metalinguistic one. The test for adults is subdivided into three parts. The first part is allocated to comprehension. The second one is designed to measure acceptability, while the last section is for figurative language. The metalinguistic questions require justifying the answer and connecting it to the underlying rule. Lasagabaster (1998) conducted a study to investigate the impact of metalinguistic awareness on learning English as an L3. Lasagabaster collected data from 252 learners who were in the 5th and 8th grades. The learners were distributed into three groups. Group A studied Spanish as the instruction language and Basque and English as subjects. However, Group B used both Spanish and Basque for instruction and English is a subject. Group D, on the other hand, studied Basque for instruction and Spanish and English were subjects. To collect data about metalinguistic awareness, the author used THAM-2 by Pinto & Titone's (1995). Pinto and Titone's test examined synonymy, acceptability, ambiguity, and phonemic segmentation. Lasagabaster (1998, p. 77) affirms that the bilinguals' outperformance is "caused by their more advanced metalinguistic awareness".

2.7 Factors Affecting the Proficiency of the Multilinguals

According to the DMM, a number of factors are involved in multilingual development. These factors can influence language acquisition progress positively or negatively. These differences can affect learning development and rate such as motivational factors, perceptual factors, and anxiety (Herdina & Jessner, 2002, p. 137). Motivational factors are believed to be the key factors in specifying the general effort while learning any language. At the same time, Herdina & Jessner (2002, p. 137) confirm that this model does not "claim to specify all the actual factors involved in the process." Other factors can be studied and taken into consideration.

2.7.1 The Age Factor in Multilingualism

The age role in second or third language acquisition has been a controversial issue in bilingual and multilingual studies. Most TLA studies do not consider age as a variable because these studies usually control this variable. However, the first part of the current study, which was conducted at the Higher Language Institute, enabled the researcher to investigate this variable, as there are different age groups. According to the DMM model, the age variable should be handled with caution. Jessner (2015, p. 67) stresses that "age cannot be studied in isolation from other variables in language".

Natural acquisition of L2 or L3 studies is usually established on the cases of immigrants who acquire the host country's language (Ruiz de Zarobe, 2005). Immigrant studies reveal a relationship between age and successful language acquisition. For example, Krashen et al. (1979) state that young children achieve higher language proficiency than older ones. Singleton (2014) attributes this superiority to the children's ability to talk to people more easily than adults in immigrant situations do. However, Singleton & Aronin (2007) confirm that older learners can also reach a native-like level of proficiency. They support their argument with the story of Robert Maxwell; a member of the UK House of Commons and Chairman of Oxford United Football club who was assumed British born and bred. It turned out that he was from Czechoslovakia and came to Britain at the age of 17 before the Second World War. Torras & Celaya (2001) conducted a study to investigate the impact of age on the development of written production. The results of this research show that the early start does not always have clear advantages in the development of EFL written production.

On the other hand, Griffiths (2013) confirms that socio-affective factors should be also studied to understand the role of the age variable. For example, similarities and differences in cultures may strengthen or weaken the cultural shock (Schumann, 1976). However, these factors have less influence on young learners. Another important age-related factor is cognitive variables. Older learners' knowledge and experience explain their faster initial progress (Krashen, 1985). However, older learners can analyze the target language's system by comparing and contrasting it with already existing knowledge. Moreover, according to Griffiths (2013), older students' metacognitive knowledge is better than that of younger learners. Older learners are expected to exercise better time management by planning to foster their language progress .

2.7.2 The Motivation Factor in Multilingualism

Learners' beliefs, attitudes, and anxiety play a crucial role in language acquisition. Motivation is seen as the force that affects the learners desire to achieve a goal and direct their endeavors. Learning can only happen when learners want to learn. Macintyre & Serroul (2015, p. 109) state that "understandings of motivation processes can be gained by examining real people interacting with language in real time".

Larsen-Freeman (2014, p. 12) affirms the dynamic nature of motivation and she states "motivation is dynamic. Periods of stability may be reached, but motivation undeniably changes, sometimes often and certainly over time.

There are two motivational orientations according to (Gardner & Wallace, 1959). Integrative motivation arises from the learners' desire to communicate in a social context or a workplace, while instrumental motivation can be linked to the learners' desire to benefit from acquiring the target language for education, a better job, or promotion, etc. Many studies show the significant relationship between motivation and language acquisition. For example, Gardner & Macintyre (1991) studied the effects of integrative and instrumental motivation on learning French and English vocabulary. The results revealed that both motivation categories had a positive impact on learning vocabulary ". Léger & Storch (2009) conducted a study about the impact of the learners' perceptions and attitudes on their oral class activities. This study concludes that students' perception of speaking activities and themselves as foreign language learners have affected their willingness to communicate in oral activities .Another study was carried out by Vandergrift (2005) to examine the role of motivation on learning French listening skills as an L2 by 57 high-school learners, mostly immigrants in Canada i.e. French "was either the third or fourth language". The results of this study show a negative relationship between listening proficiency and motivation. Amotivation is defined as "learners who see no relation between their actions and the consequences of those actions" (p. 71). The researcher explained that this passive attitude might affect language proficiency.

Many studies connected motivation with self-efficacy in second or foreign language acquisition. For example, Dörnyei et al. (2015, p. 4) applied DSCT to study motivation. They concluded that the "basic hypothesis is that if proficiency in the target language is part and parcel of one's ideal or ought-to self, this will serve as a powerful motivator to learn the language because of our psychological desire to reduce the discrepancy between our current

and possible future selves". Self-efficacy is defined as the beliefs of the learners about their own abilities to perform while performing (Raofi et al., 2012).

A number of studies were carried out to investigate the role of the learners' self-efficacy beliefs on learning an L3. For instance, Mills et al. (2006) conducted a study to investigate the relationship between the learners' reading self-efficacy and reading proficiency of 95 adult learners of French as L2. The results show correlations between the two variables. Another study that concentrated on English proficiency was conducted by Hsieh & Schallert (2008). This study found that self-efficacy is the most significant predictor of English proficiency by South Korean adult learners.

2.7.3 Linguistic Distance and Multilingualism

Studies of TLA highlighted the role of the linguistic distance of L1 and L2 on third language learnability. Schepens (2015, p. 153) defined linguistic distance as "a measure that quantifies how distinct linguistic structures are, e.g. at the lexical or at the morphological level". These effects can have an impact depending on the degree of similarities (Rothman, 2011), L2 status (Cenoz et al., 2001), and the proficiency degree in L1 and L2 (Lindqvist & Bardel, 2010). Rothman (2011) confirms that languages with the lowest distance will have the most influence. For example, knowledge of the typologically closer languages is more likely to be transferred to an additional language. Cenoz et al., (2001a) compared the influence of Basque as a first or second language versus Spanish as a first and second language on learning English as a third language. The data analysis shows that the Spanish background language has a more positive effect than the Basque one on learning English. In addition, Schepens (2015) states that linguistic distance can predict the degree of success in learning an additional language. This researcher collected data from 33,000 examinees who speak 35 different Indo-European languages. The study aimed to investigate the relationship between language distances on acquiring Dutch oral proficiency. The results of the study show a robust effect of linguistic distance and acquiring Dutch speaking proficiency. Many studies reported the language transfer from the second language rather than the first language. For example, Vildomec (1963) reported lexical transfer from L2 to L3 and attributed this if L1 is not phonetically similar to L2 and L3. On the other hand, Williams & Hammarberg (1998) examined non-adapted language switches of an adult learner of Swedish L3 with English L1 and German L2 and found out that 92% of switches were from the learner's L2 language. Nevertheless, De Angelis (2007) claims that non-native background languages block the role of the native language while

processing a third one. De Angelis investigated the L3 Italian oral production of speaker with French as L1. Spanish as L2. He reports that the speaker had a:

Clear reliance on her little and rusty knowledge of Spanish as a second language. Since Spanish, French and Italian are all Romance languages, it is somewhat peculiar that a rusty L2 (Spanish) not spoken for thirty years would override the French native language and become the primary source of information (p. 29).

2.7.4 The Language Exposure and Recency of Use

Herdina & Jessner (2002, p. 98) in their DMM model affirm the importance of studying the role of the exposure because it is "as difficult to trace as to avoid". Language input exposure and frequency of use have been proven to influence language production (Vildomec, 1963). In addition, language exposure in formal and informal contexts has been linked to foreign language development. For example, De Angelis (2015, p. 446) found that exposure to a second language can enhance second and third language acquisition. She further asserts that the exposure as a variable is one of the strongest factors that can be associated with to foreign language development:

Exposure to a second language environment (German) was believed to be a potentially strong predictor of German L2 proficiency development and, in turn, of English L3 proficiency development.

Tremblay (2006) also claims that language exposure can affect language proficiency and may enhance the overall learning process.

Nonnative language influence is called interlanguage influence, where the key variable that can affect multilingual development can be attributed to language use and language similarity (De Angelis & Selinker, 2001). The degree of language use is believed to be the reason behind the activation of the interlanguage system. It is also linked to language performance and use. For example, it is easier to retrieve frequently used vocabulary than the vocabulary seldom used.

The influence of the degree of exposure and use has been investigated on young and adult learners' foreign language acquisition. For example, Lindgren & Muñoz (2013) carried out a longitudinal study that included 1,300 children aged between 10-11 years old in seven countries in the European Union to investigate the impact of exposure and language distance on acquiring receptive skills of English as a foreign language. All children in Spain were bilingual in Spanish and Catalan. The regression analysis of the questionnaire that was passed to the parents and the reading and listening test scores show that "exposure to the FL and the parents' use of the FL at work are the two strongest predictive factors" (p. 121).

2.7.5 Gender and Fourth Language Acquisition

Some researchers believe those gender characteristics may affect foreign language acquisition. Ellis (1994, p. 210) examined the role of gender on L2 proficiency in his book on second language acquisition and affirms the mixed results while investigating the gender variable:

In the case of sex, mixed results have been obtained, but female learners generally outperform male learners in language classroom settings and also display more positive attitudes. Male learners do better in listening vocabulary.

Moreover, Aida (1994) collected data from 96 American university students (40/females and 56/males) who are learning Japanese as a foreign language to examine the role of anxiety on language achievement. This study showed significant differences in the Japanese exam scores according to gender. The researcher attributed this result to differences in using language-learning strategies in which females reported using more "different" learning strategies than the males did. Some studies concentrated on the gender differences in a specific skill. For example, Piasecka (2010) studied the differences in L1/Polish and L2/English reading skills according to gender. The author gathered data from 350 learners aged 15 years old. The data analysis shows that females outperformed males in L1 and L2 reading comprehension. This result was linked to the females' higher level of aptitude and leisure activities in which the females participants conducted more reading in their free time.

However, some studies found no differences in the multilinguals abilities according to gender, For instance, Nshwi and Failsofah (2019) examined the language fluency of multilingual adult learners at Pannonia University. The findings of this research affirm that females outperformed males in the semantic and phonological fluency tasks. Nevertheless, these differences were not statistically significant.

2.7.6 Strategy Use Factor in Multilingualism

Language learning strategies have been linked empirically to multilingual development (Cenoz, 2003; Jessner, 1999). For example, bilinguals were found better at learning an additional language because of their enhanced language learning skills. From the DMM perspective, multilingual learners differ from monolingual ones as they are considered experienced learners (Herdina & Jessner, 2002). Jessner (2006, p.63) refers to language learning strategies as a "term is used to refer to some form of mental or behavioural activity occurring at a specific stage in the process of learning and communicating". Many researchers investigated the role of language learning strategies on multilingual development. For example,

Mißler (1999; cited in Jessner, 2006) conducted research to examine the strategy use of multilinguals with four languages who are learning an additional one by using (SILL) the German version questionnaire by (Oxford, 1990). Mißler affirms that SILL analysis linked increased language learning strategy use as a result of their multiple languages experience. A more recent study was carried out by Dmitrenko (2017) who collected data from 18 adult multilinguals (L1/Spanish) with three or more languages. The participants were studying an intensive German True-beginner course. The author used pre-and post-questionnaires, and semi-structured interviews to investigate their strategy use. The findings of this study show that the learners used strategies not only from their second language, but also from their other languages that they know:

The use of some strategies described in SLA was extended beyond two languages L1 and L2. Some of the multilingual interviewees reported making recourse not only to their mother tongue L1 but to any other language (Lx) from their linguistic repertoires. This is the case of the following strategies: translating not only into L1 but also into any prior language (Lx); establishing an auditory link between known and unknown words; comparing languages; reasoning deductively; or code-switching to another language (in case of difficulties) (p. 15).

However, Jessner (2006) points out the learners' need for awareness training about the language system and similarities and differences across their linguistic repertoire to benefit from their multilingualism asset. This result is in the same vein with the study conducted by Nshwi (2020) who examined the impact of explicit versus implicit learning strategies' training on English vocabulary acquisition of 36 adult learners. She found that learners who were trained explicitly on using vocabulary-learning strategies outperformed the learners who were trained implicitly.

2.8 Multilingual Acquisition

Many scholars in the last century considered multilingual learners as second language learners with an extra language. For that reason, most of the language acquisition research focused on the first and second languages. However, theoretical and empirical studies have proven the different nature of second and third language acquisition. Cenoz & Jessner (2000, p. vi) explain the different nature of the third language acquisition and third language learners as:

Third language acquisition or TLA is a more complex phenomenon than second language acquisition (SLA) because, apart from all the individual and social factors that affect the latter, the process, and product of acquiring a second language can themselves potentially influence the acquisition of a third. Third language learners have more experience at their disposal than second language ones do, and have been found to present more strategies and a higher level of metalinguistic awareness.

Cenoz (2000, p. 39) linked third language learning to multilingual acquisition, and they state that "to acquire a third or additional language is to acquire some type of multilingual competence and therefore some type of multilingualism". Amaro et al. (2012, p. 33) reiterate, "L3/L_n language learners are distinct from typical adult L2 acquirers since the former possess a larger repertoire of linguistic and metalinguistic knowledge (among other factors)". Cenoz (2003, p. 71) affirms that third language acquisition refers "to the acquisition of a non-native language by learners who have previously acquired or are acquiring two other languages".

Furthermore, the process of second and third language acquisition differs in terms of the order they take. For example, second language acquisition can take place simultaneously while acquiring the first language or consecutively after the first language is fully acquired. On the other hand, third language acquisition has more diverse orders as a result of the number of the involved languages. This complex and diverse linguistic background has been proven by many researchers to affect the acquisition of the third language (Cenoz, 2013; Sanz, 2000).

Another factor that has been found influential in multilingual acquisition is previous linguistic knowledge. The previous linguistic repertoire is considered an important asset (Cenoz, 2003; Herdina & Jessner, 2002). Cummins (1981-2000) presented his Interdependence Hypothesis to describe linguistic transfer that activates the learners' prior knowledge. Cummins (1991) Interdependence Theory refers to the central processing system in bilinguals, which develops from the common underlying proficiency of linguistic knowledge, skills, and concepts, as introduced in his Common Underlying Proficiency/Interdependence Hypothesis. Cummins affirms that L1 linguistic development enhances L2 acquisition. He portrays the two linguistic systems as two icebergs overlapping underneath the surface level. The two languages are two separated systems in terms of vocabulary, pronunciation, and grammar but at the same time, they share the cognitive and linguistic abilities of the speaker.

Furthermore, he depicts second language development in a matrix. The horizontal axis represents the L2 basic interpersonal communicative skills/BICS as a continuum that ranges from tasks that require context-embedded knowledge in which the speaker depends on varied clues i.e. facial gestures, intonation, and context to decode the message. Whereas the other extreme represents situations where the speaker has to use linguistic cues and background knowledge to comprehend the meaning. On the other hand, the vertical axis exhibits cognitive academic language proficiency as a continuum that ranges from cognitive undemanding activities i.e. the task does not require an increased level of cognitive ability, for example, matching words with pictures. The other extreme is embedded with the cognitively demanding tasks, for instance, a poem would require linguistic cues and cognitive ability to comprehend.

This common underlying proficiency can enable the transfer of cognitive ability and academic skills between the two linguistic systems. Cummins (2000, p. 69) classifies five routes for transfer as the following:

1. Transfer of conceptual elements (e.g., understanding the concept of photosynthesis);
2. Transfer of metacognitive and metalinguistic strategies (e.g., strategies of visualizing, use of graphic organizers, mnemonic devices, vocabulary acquisition strategies, etc.);
3. Transfer of pragmatic aspects of language use (willingness to take risks in communication through L2, ability to use paralinguistic features such as gestures to aid communication, etc.);
4. Transfer of specific linguistic elements (knowledge of the meaning of photo in photosynthesis);
5. Transfer of phonological awareness—the knowledge that words are composed of distinct sounds.

However, Jessner (2006, p. 35) affirms that multiple languages systems not only overlap but also develop:

DST theory presupposes a complete metamorphosis of the system involved and not merely an overlap between two subsystems. If this is applied to multilingual development, it means that the interaction between the three systems results in different abilities and skills that the learners develop due to their prior language learning experience. In other words, as part of the M-factor in DMM, third language learners develop, for instance, an enhanced level of metalinguistic awareness and metacognitive strategies which considerably contribute to the quality of CLIN in multilinguals.

The context of multilingual acquisition is as diverse as its order. For instance, it can take place naturally (at home), as in the case of immigrants or diverse language backgrounds such as South Africa and Indonesia; or it can be formally (at School) such as in the case of Basque county.

Other variables that are distinct by third language learners are the linguistic and cognitive processes involved in the multilingual acquisition, which are also considered influential in the study of this phenomenon. Previous linguistic repertoires can impact the nature of this complex linguistic system (Bialystok, 1988; Cenoz, 2013; Sanz, 2000). Many TLA studies link metalinguistic awareness to better multilingual learning by adults and young learners (Hofer & Jessner, 2019; Jessner, 1999, 2008a) as will be discussed in the following.

2.9 TLA Research

The last 30 years witnessed a growing interest in studying the multilingualism phenomenon and TLA research (see Cenoz et al., 2001b, 2001a; De Angelis, 2007; Jessner, 2008a). Hufeisen & Jessner (2019, p. 70) classified research about TLA into three main areas (see Figure 2.2):

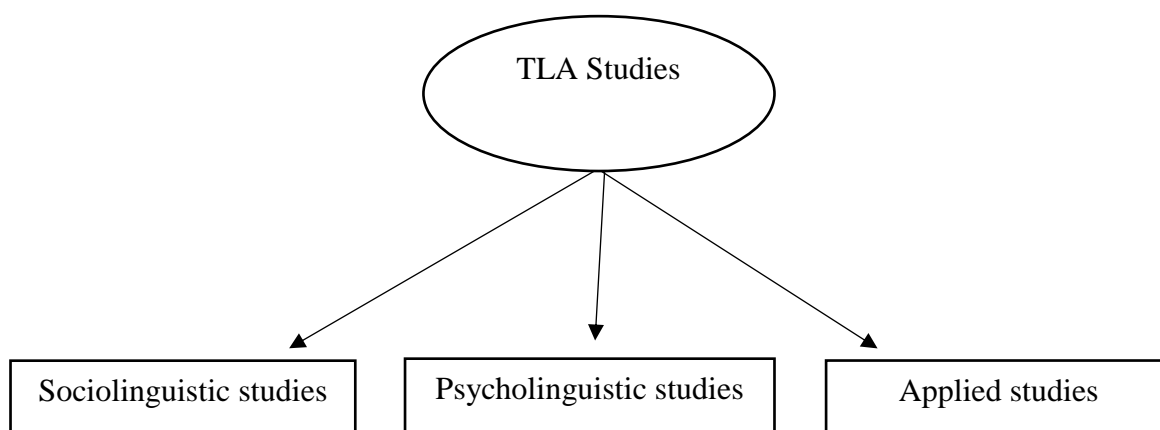


Figure 2.2 TLA studies by Hufeisen & Jessner (2019)

Sociolinguistic studies concentrate on multilingualism in society. Psycholinguistic studies usually report research about multilingual individuals. Applied studies focus on the learning context i.e. multiple foreign language learning in the classroom. Cenoz (2013c, p. 72) explains that:

TLA is a broad area and research focuses on different processes and factors affecting its development. Research in TLA can also adopt a variety of methodologies. The term TLA is sometimes used as synonymous for 'multilingualism', but in a strict sense it means the acquisition of a third language, and multilingualism is a much broader term that does not necessarily refer to acquisition. TLA can be regarded as a specific aspect of the study of multilingualism [...]. The areas of TLA that have received most attention are cross-linguistic influence on TLA and the influence of bilingualism or prior linguistic knowledge on the acquisition of a third language.

The following three sections review research about the role of cross-linguistic influence, bilingualism, and metalinguistic awareness on multilingual development.

2.9.1 CLI Studies and TLA

Most of the L3 studies investigate the role of cross-linguistic influence (CLI) on multilingual development. Bonnet & Siemund (2018, p. 8) explain that the "influence from previously acquired languages on the language being learned is known as transfer, and it can be positive (facilitating) or negative (inhibiting, interfering)". A number of CLI studies focused on the role of the typological similarities or differences on positive transfer. For example, Gibson & Hufeisen (2003) conducted a study to evaluate the impact of typology on positive transfer. The task used in this study requires translating Swedish texts (a language that the participants did not previously learn) into an L3 German/English. The data analysis manifested that the

background languages that are typologically related were the source of the positive transfer, which is seen as a result of the higher level of metalinguistic awareness.

Some CLI studies, on the other hand, examined the role of the level of the proficiency of the source languages on positive transfer (see de Bot, 2004; Odlin & Jarvis, 2004; Williams & Hammarberg, 1998). For instance, Odlin & Jarvis (2004) carried out a study to examine the role of Swedish proficiency on the positive transfer of lexical items in English. The results linked the lexical transfer in English to the learners' proficiency level in Swedish.

As can be noticed, the typological proximity and the level of proficiency have been identified as the main source of positive transfer. Nevertheless, the metalinguistic awareness variable has been also linked to producing positive transfer (Gibson & Hufeisen, 2003; Peyer et al., 2010). One of the pioneer studies was conducted by Jessner (1999) to examine the impact of metalinguistic awareness on L3 English production of adult learners (L1/Italian and L2 German). The used tool to collect data about metalinguistic awareness is the think-aloud protocol during the academic writing test. The results of this study demonstrated three important facts about the multilingual acquisition. First, metalinguistic awareness can be enhanced by concentrating on the commonalities among the known languages by the learners. Second, the results of that study stressed the dynamism of multilingual proficiency in which metalinguistic awareness can affect both the language system and cognitive one as a result of the perceived communicative needs. Woll (2018) also conducted a study to investigate the impact of metalinguistic awareness in predict the positive transfer from L2 to L3. Sixty-six French between 17-24 years old learning English as an L2 and German as an L3. Woll used a translation task and think-aloud protocols to collect data. The results indicated that metalinguistic awareness was able to predict positive transfer more than the degree of exposure and L2 proficiency.

2.9.2 TLA Studies about the Role of Bilingualism

Cenoz (2013a, p. 77) considers that "studies on TLA in general, and on the positive effect of bilingualism on TLA in particular, are an important contribution to the study of language acquisition". According to DMM by Herdina & Jessner (2002, p. 117), bilingualism is seen as:

Variants of multilingual systems but not equated with multilingual systems since multilingualism ranges from monolingual acquisition, that is the learning of an L2 by a native speaker, to balanced bilingualism or even ambilingualism and to the command of three or more language systems to point out a few stages.

Large-scale TLA studies manifest that previously learned languages can enhance learning the subsequent language. For example, Cenoz & Valencia (1994) collected data from 320 students aged between (17-19) years old to investigate the impact of bilingualism on L3/English. They collected data by using a general achievement test in English. The multiple regression tests showed that bilingualism ranked first to predict English proficiency. They state, " bilingualism has a positive mediating effect on third language learning" (p.204). Similarly, Klein (1995) conducted research to study the influence of L2 on learning subsequent non-native languages. Klein used grammaticality judgment and correction tasks in oral and written forms to collect data. The results demonstrated that multilinguals outperformed monolinguals in lexical learning. Klein (1995) attributes this result to the enhanced cognitive and metalinguistic skills developed as a result of the learners' prior linguistic experience. Another study which was conducted by Gibson & Hufeisen (2001) affirm that foreign languages knowledge can facilitate the acquisition of an additional language. They gathered data from 64 men and women who performed a pen and paper task that requires filling in the correct preposition to go with the verb, and they state that:

Knowing more foreign languages, especially similar ones like English and German, facilitates the learning, especially the reception and perception, of yet further languages in general, because learners tend to use – among other conscious and subconscious strategies - transfer techniques which make use of their different (foreign) languages in order to understand or produce the target language item(s) (p. 87).

In the same vein, Sanz (2000) collected data from 201 Catalan/Spanish high school students (77 monolinguals and 124 bilinguals) who are learning English as their L3. The author used a questionnaire that collected data about the participants' age, gender, exposure to English, motivation, and attitudes towards British and American English. Moreover, intelligence was measured by Raven's Progressive Matrices Test. Whereas English was measured by using the CELT English proficiency test. This study also affirms that bilingualism can enhance L3 proficiency.

A longitudinal and quantitative study was conducted by Haenni Hoti et al. (2011) to examine the impact of the second language on learning L3 reading. The data collected from 982 students from Switzerland with German as L1 who were divided into two groups. The first group contains learners who are learning English as a third language from the fifth grade, whereas the second group consists of students who are learning French as a second language. The results demonstrate that students who had English as an L3 outperformed in French reading and listening skills students who did not have English as an L3.

Many studies investigated the role of bilingualism on L3 different skills and structures (Cenoz, 2013a; Cenoz & Valencia, 1994; Hambly et al., 2013; Zare & Mobarakeh, 2013). For example, Zare & Mobarakeh (2013) compared L3 vocabulary acquisition (English) between Iranian monolinguals (Persian) and bilinguals (Persian and Arabic) of 100 high school males. The results of the T-test show that bilinguals outperformed monolinguals in L3 vocabulary production. Similarly, another study was conducted by Kassaian & Esmae'li (2011) to compare the L3 vocabulary knowledge between monolinguals and bilinguals. Sixty learners were distributed into control (monolinguals/Persian) and experimental (bilinguals/Persian and Armenian) groups. The results show that bilinguals have a larger size of vocabulary knowledge, and they have better word reading skills. Various TLA studies focused on L3 learning skills. For instance, Peyer, Kaiser, & Berthele (2010) studied the role of multilingualism on L3 German reading. Five hundred and six (312/Italian and 194/French) adult university learners participated in this study. They state that "multilingual competence has been shown to be conducive to the reading comprehension of German sentences" (p. 12). Also, Rauch et al. (2012) collected data from 299 secondary school learners to investigate the role of literacy on metalinguistic awareness and L3 reading acquisition. The results manifest the outperformance of the fully bi-literate learners (Turkish and German) over the partially and monolingual (German) learners in L3 English reading and metalinguistic tests. They state that their "findings support the assumption that being a proficient reader in both a first and a second language is necessary for biliteracy to have positive associations with both metalinguistic awareness and L3 reading proficiency" (p. 411). Similarly, Hanbay (2013) collected data from 134 Turkish high school learners to investigate the role of L2/English on learning L3/German. The data were collected general achievement tests in English and German. The Person correlation test show significant correlation between the English and German achievement test scores. Also, Sánchez (2015) carried out a longitudinal study to investigate the role of L2/German on the written production of L3/English. She collected data from 93 from young learners and she concludes that this "study sheds light on the important role played by background languages during L3 production, in particular at the beginning of L3 acquisition, where interlingual connections, especially between the L2 and the L3, seem to be stronger than at later stages" (p. 14).

A possible explanation of this bilingualism advantage while acquiring an L3 can be attributed to the fact that bilingual learners possess higher levels of metalinguistic abilities (Bialystok, 2005; Jessner, 2008a; Sanz, 2000) and cognitive development. Bialystok (2005, p.

417) affirms that " bilingualism accelerates the development of a general cognitive function concerned with attention and inhibition, and that facilitating effects of bilingualism are found on tasks and processes in which this function is most required". Herdina & Jessner (2002, p. 132) also confirm that:

Acquiring two languages (sequentially rather than simultaneously) leads to the development of specific metaskills, concerning the acquisition of language systems as a whole that will certainly affect the language acquisition process.

2.9.3 TLA Studies on the Role of Metalinguistic Awareness

Multilingualism and TLA studies have highlighted the role of metalinguistic awareness while acquiring an L3 or an additional language. For example, Wrembel (2015) evaluated the role of metalinguistic awareness on L3 phonological acquisition of 17 German adult learners at Leipzig University by stimulated recall verbal protocols that disclose the mental processes of the learners. The results show that a higher level of metaphonological awareness was detected between L2/English and L3/German more than that between L2/English and L3/French as a result of the typological proximity. Wrembel reiterates that metalinguistic awareness has been found an essential component of multilingual proficiency. In the same vein, Marx & Mehlhorn (2010) published an article that manifested research about L3 studies that concentrated on Phonological positive transfer from L2/English to L3/German. These researchers conclude that the review of the research about L3 phonological positive transfer affirms that:

Multilingual learners possess a larger repertoire of phonetic-phonological parameters, have a higher degree of language and meta- linguistic awareness, and have developed increased phonological knowledge. This, combined with the increased cognitive flexibility that accompanies experienced learners, supports their acquisition of the pronunciation of further foreign languages.

Another study was conducted by Falk et al. (2015) to investigate the role of L1 explicit metalinguistic knowledge in L3 Dutch oral production at the initial state. This study included 40 Swedish adult participants with different degrees of MLA in their L1 and diverse L2. The researchers used oral production with a Dutch-speaking individual to elicit the placement of the finite verb. Their findings affirm the important role of metalinguistic awareness in multilingual development, and they affirm the "prominent role of MLA in the acquisition process of first, second and third languages" (p. 261).

Spellerberg (2016) investigated the role of metalinguistic awareness on the general academic achievement of 219 Danish learners aged 14-16 years old (106/monolinguals & 113 bi/multilinguals (38 different languages). The researcher used the Pinto et al. (1999) test to

measure metalinguistic awareness. The findings show strong correlations between metalinguistic awareness and the school-leaving exam results.

However, not all TLA studies were able to link metalinguistic awareness to successful multiple language development. For example, Foryś-Nogala et al. (2020) collected data from 49 undergraduate learners (L1/Polish, L2/English, and L3/Italian) to investigate the role of CLI, language proficiency, and metalinguistic awareness on L3 subject placement by utilizing computerized acceptability judgment task that consisted of exemplars of felicitous and infelicitous Italian subject placement. These researchers concluded that this study:

Did not find any link between metalinguistic knowledge of the target structure and acquiring that structure in the new L3. Moreover, metalinguistic knowledge did not moderate the influence of L3 proficiency or the potential negative transfer from L2 (or non-pro-drop languages).

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter discusses the research methodology that is used in this study to investigate the metalinguistic awareness and the previously learned languages on learning German as a fourth language by adult true-beginner learners at the HLI and AIU. In addition, a detailed background description of the context of the study and the participants is demonstrated. The subsequent section introduces the used instruments and the procedure of collecting the data. The chapter is concluded by providing details about the data analysis and the used statistical tests in this research.

3.2 Context of the Research

The first part of the study was held at the Higher Language Institute (hereafter HLI)/ Damascus University. The HLI is a public institute at Damascus University. It is responsible for hiring language teachers at Damascus University. It offers language courses for lecturers at Damascus University for free during the morning courses. It also provides language courses for adult learners above the age of 18 during the evening courses. The rationale behind choosing this institute to conduct this study can be attributed to its ranking. According to the Webometrics ranks of institutions (2018), Damascus University ranked first among Syrian universities. The duration of the German course A1/1 is fifty hours per course (five days a week). Each session lasts two and a half hours. The coursebook is *Menschen A1* which is written by Evans et al., (2012). Six units are usually covered during the A1/1 course, and the researcher collected data from six classes during 2018.

The second part of the study was held at the Arab International University (hereafter AIU). The AIU is an institution of higher education and scientific research in Syria, which included faculties that teach pharmacy, informatics, communications engineering, business administration, architecture, and arts. The reason behind choosing this private university to conduct the second part of the study can also be attributed to its ranking. According to Ranking Web of Universities page (webometrics) in 2018, Arab International University ranked first among Syrian private universities and seventh among Syrian Universities. The duration of the German course A1/1 at the AIU is thirty hours per course (one session per week during the autumn and spring semesters, and two sessions during the summer semester). Each lesson lasts

two hours. The taught coursebook is *Studio D/A1*, which is written by Bettermann & Werner, (2005). Five units are usually covered during the A1/1 course, and the researcher collected data from four classes during the academic year 2018-2019. This study was conducted at two places to investigate different socioeconomic factors. The first part of the study was conducted at the HLI which is a public institute at Damascus University, and most of the participants are middle-class people. However, participants at the AIU are usually wealthy since this university is a private one.

3.3 Testing Population

The sample of this research consists of two groups:

The first group includes 118 FL true-beginner learners taking German courses at the HLI. However, only 92 learners completed all the tests. Additionally, eight German language teachers were interviewed.

The second group of participants contains 83 FL true-beginner learners at the Arab International University and 2 teachers. Only 65 students filled out all the tests. Descriptive statistics table about the overall sample is presented in Appendix 11.

3.4 Research Design

The methods in this cross-sectional research are both descriptive and analytic to investigate the impact of interrelated factors on learning German as a foreign language by adult Syrian learners. Mixing the methods can contribute to answering questions that are complementary in the two domains. In their article on CT Cameron & Larsen-Freeman (2007) suggest combining a number of methodologies, which may facilitate reaching valid answers to research questions. The integration of the methods used in the psychological and linguistic disciplines is considered an asset by Comanaru & Dewaele (2015). Large-scale of TLA studies combined qualitative and quantitative approach to investigate multiple language acquisition. For example, Gibson and Hufeisen (2003), as discussed in Chapter 2, used a qualitative task to investigate cross-linguistic influence in multilinguals by using a translation task, which was followed by a learner background questionnaire.

3.5 Research Tools

Five instruments were used in this study to collect data:

1. Language History Questionnaire (for learners)
2. Interviews (for teachers)

3. C-Tests: (English C-Test and French C-Test)
4. Metalinguistic tests: English Meta-linguistic test and German Meta-linguistic test
5. German proficiency test

3.5.1 Language History Questionnaire

The researcher, who is a certified translator, wrote the questionnaire in English (see Appendix 1), and then it was translated into Arabic (see Appendix 2). This questionnaire is divided into four parts. The first section concentrates on the background information of the participants, such as age, gender, and education. The second part covers the number of learned languages, while the third section investigates the degree of exposure to these foreign languages. Moreover, the different contexts of use are addressed in this questionnaire in which various receptive and interactive activities were examined in section 3. Finally, the last part checks what motivates students to learn the German language. The rationale behind using this questionnaire can be attributed to the fact that the multilingual language acquisition's context is a key factor in the multilingual acquisition research according to de Zarobe & de Zarobe (2015, p. 9):

A fundamental issue in multilingual acquisition studies is the context of multilingual language acquisition; that is to say, the environment where individuals acquire and are exposed to more than two languages in their daily lives: family, school, community working environment, residence in a foreign country and the domains where the language is used: tourism, business, education, and others.

The categorizations of the questionnaire to collect data about the participants' previous linguistic knowledge are as the following:

1. Native and non-native language/languages.
2. The onset age of acquiring foreign languages and the degree of exposure to these languages.
3. Degree of using these non-native languages abroad and duration
4. The onset age of using these foreign languages in formal and natural settings (home, with a friend, at work, while studying)
5. Amount of time dedicated to the use of these foreign languages in daily activity (watching TV, listening to music, reading for fun, reading for work, and writing emails)
6. Rating participants' self-efficacy to these foreign languages
7. The motivation for interest in learning German
8. Used strategies to reinforce learning German

9. The preferred approach while learning foreign languages (to talk/think about similarities and differences among the three languages i.e. English, French, and German or not)

Description of the Language History Questionnaire

This questionnaire is divided into four sections to answer the research questions presented in Chapter 1. The first section includes four subheading questions to indicate the participants' names, ages, gender, and education.

The second section contains a table to pinpoint the native and non-native languages and the onset age of exposure to listening, speaking, reading, and writing skills, as well as the total number of years spent using these languages. Question 6 asks the students if they have lived or traveled to countries other than their place of birth for more than three months. In addition, it collects data about the used languages abroad, and the frequency of using these languages.

The third section includes questions about foreign languages' exposure and use. Question 7 contains a table, in which the participants are asked to indicate the onset age of using English and French in the following formal and natural settings: at home, with friends, at school, at work, and online games. Question 8 is specified to collect data about the degree of use in different environments (while watching TV, listening to music, reading for fun, reading for school, reading for work, and writing an email).

The fourth section includes questions about self-efficacy and motivational factors. Question 9 asks the participants to rate their ability to learning a foreign language (very poor, poor, limited, functional, good, very good, and native-like). Whereas, Question 10 requires to rate the participants' current ability in the four skills (very poor, poor, limited, functional, good, very good, and native-like). Question 11 investigates what motives the participants to learn German. Question 12 investigates the preferred strategy to facilitate learning German. Question 13 is specified to know the learners' preferences about explaining the similarities and differences among the three languages, namely English, French, and German.

3.5.2 Teachers' Interview

The learning context and teachers' practices have undoubtedly a direct effect on the learning process. Haukås (2016, p. 2) highlights this aspect by stating that the:

Important role of the language teacher in promoting learners' multilingualism, research focused on teachers' knowledge and beliefs about multilingualism and multilingual pedagogical approaches are surprisingly scarce.

To that end, the teachers at the HLI and AIU were interviewed. The interview questions were written in English (see Appendix 8). The researcher translated the interview questions into Arabic (see Appendix 9). The interview questions are classified into three sections. The first section is allocated to get information about the teachers' background, such as age, gender, education, and teaching experience. The section contained a table to pinpoint the native and non-native languages and the onset age of exposure to listening, speaking, reading, and writing skills, as well as the total number of years spent using these languages. Question 6 asks the teachers if they have lived or traveled to countries other than their place of birth for more than three months. In addition, it collects data about the used languages abroad, and the frequency of using these languages. The third part of the interview concentrates on the used strategies while teaching German and the teachers' opinions about teaching adults a new language.

The teachers' interview is developed to collect data about the teachers' previous linguistic knowledge and teaching approaches as the following:

1. Native and non-native acquired languages
2. The onset age of acquiring foreign languages
3. Degree of use of these non-native languages and duration
4. Their perspective about the learners' motivation or interest in learning German
5. Used strategies to reinforce learning German
6. Their preference to connect the previously learned languages' knowledge while teaching German by explaining the similarities and differences among the three

Description of the Teachers' Interview

This interview is divided into three sections. The first section includes four subheading questions to indicate the teachers' names, ages, gender, and education.

The second section contains a table to pinpoint the native and non-native languages and the onset age at which each language started in terms of listening, speaking, reading, and writing skills, as well as the total number of years they have spent using these languages. The next question asks the teachers if they have lived or traveled to countries other than their place of birth for a duration of more than three months. It also requires indicating the used languages and the frequency of using these languages.

The third section of the interview includes two questions. Question 10 asks the teachers the used approach to teach German and if they use means of comparison and contrast among the three languages, namely English, French, and German.

3.5.3 C-Tests

Studies in third language acquisition highlight the importance of measuring proficiency in the target languages. Amaro et al. (2012, p. 5) state, "testing proficiency in the L2 seems to be essential for participation in any L3 study, or at least one has to be able to report accurately the L2 proficiency level". Researchers usually use three types of measurement to report the proficiency level of target languages. The first way is by counting the formal years of instruction of the learners (e.g., Lindqvist, 2010), or they can choose a standardized proficiency test (e.g. Ringbom & Jarvis, 2007). Some researchers also use nonstandardized tests such as the test used by Peyer, Kaiser, & Berthele (2010). This study used C-Tests in English, French, and German, in addition to a German achievement test to measure the participants' proficiency.

Khoshdel (2017, p. 1) defines a C-Test as "a gap-filling test belonging to the family of the reduced redundancy tests which is used as an overall measure of general language proficiency in a second or a native language". The C-Tests (English, French, and German) are used in this study (See Appendixes 3, 4 & 5). They start with a demo paragraph. The paragraphs used in the tests are arranged from the easiest to the hardest.

According to Khoshdel (2017, p. 3), some roles need to follow while constructing the C-Test:

1. Target population and the test format should be defined,
2. Appropriate texts should be chosen more than needed and then the best ones would be selected,
3. After selecting the best texts, they should be brought into C-Test format,
4. Analyzing the difficulty of the texts,
5. It should be decided the satisfactory of each text by changing, adding, or removing some damaged words because some are so difficult or easy,
6. Then good texts should be combined,
7. Item analysis, reliability, and validity of the test would be performed,
8. The test should be improved if it is needed,
9. The final form of the test should be administered to a sample of the target population,
10. The test norms should be calculated.

3.5.4 Metalinguistic tests

In the field of TLA, different tasks are used to measure metalinguistic awareness, which is derived from different research orientations in the psychological, educational, or psycholinguistic fields (Hufeisen & Jessner, 2019). Metalinguistic knowledge has been defined

as the learners' ability to correct and verbalize L2 errors (Roehr, 2008). It is also measured by tasks that require explaining the explicit knowledge about categories and structure. For example, some tasks might require identifying the noun/ adverb/preposition in a sentence. Moreover, it is expected for learners to pinpoint the relationships between categories (e.g. 'subject of the sentence (main/subordinate clause)). The researcher designed metalinguistic tests in English and German (see appendixes 5 and 6), which include two sections. The first section is the terminology section, where the students were asked to underline the proper terminology. The second part contains fifteen sentences and the students were asked to determine whether the sentence is correct or false. In case the sentence is incorrect, the students have to correct the mistake and explain the mistake. This test was adapted from Elder et al. (1999) and Green & Hecht (1992).

Table 3.1 Correction and Explanation Section rating (adapted from Han & Ellis, 1998)

Point Rationale	
Zero	The learner would get (0) if he/she was not able to explain why the sentence was incorrect, or the learner wrote a wrong answer. e.g. <i>Rami is a boy smart.</i> 'Incorrect. The adjective must come before the noun.'
Point and a half	The learner was able to verbalize somewhat the grammatical rule using some technical language. e.g. <i>ran in the park two days ago.</i> 'Incorrect. Missing word'
Three points	The learner was able to verbalize completely the correct rule by using the appropriate technical language. e.g. <i>Leila and Ahmed goed to Aleppo last Friday.</i> 'Incorrect. <i>to go</i> is an irregular verb past tense, and the correct irregular form is <i>went</i> '.

As can be noticed from Table 3.1, students get no points if they were not able to verbalize why the sentence was correct or incorrect. They get point and a half if they were able to partially verbalize the grammatical rule by using some technical language. However, the participants get three points if they were able to verbalize completely the grammar rule by using the suitable technical language.

3.5.5 German Achievement Test

This test is divided into four parts and each part examines one skill (reading, writing, speaking, and listening). The test is usually administrated on two days. The first day is allocated for the written test, and the second day is specified for the oral test. The total score is one hundred (100) points, and the learners should obtain at least (60) scores in order to pass. The reading comprehension section contains a reading text, which is followed by five open-ended questions, and five multiple-choice questions. The grammar section contains three questions. The first question contains five sentences. Each sentence has one underlined word, and the learners have to form a suitable question to ask about the underlined word. The second question contains five sentences. Each sentence has one mistake, and the learners have to find and correct the mistake. The third question asks the examinees to write the suitable conjugation of the verb between the brackets. In the vocabulary section, there are two questions. The first question is a multiple-choice question, and it asks the student to fill the gap with a suitable word. The second question requires matching the words with their definition. The last section examines the writing skills, in which the learners are asked to write a paragraph to talk about their best friend. The next session is specified to test oral proficiency by using two sets of questions. The first one is the monologue, in which the examinee has to pick a piece of paper that contains a certain topic. The examinee can prepare to think about the chosen topic for two minutes and after that, they can speak about those topics (the topics are as the following: introduce yourself, talk about your hobby, talk about your family, talk about your flat or house). In the dialogue section, two examinees have to pick a piece of paper in which they have to invent a dialogue about a topic, for example, they can have a conversation about (inviting a friend to a party, booking an appointment, paying a bill in a restaurant, talking about a best friend).

3.6 Pilot study

The pilot study was conducted at the HLI and AIU during the summer semester of 2018. The researcher attended three courses, two at the AIU and one at the HLI, to pilot the instruments and get feedback from the teachers who will teach the courses.

3.6.1 Modifications in the Light of the Pilot Study

In light of the piloting process, some modifications were introduced as the following:

- Instructions of the texts were translated into Arabic (C-Tests and metalinguistic tests).

- The model paragraph in the C-Tests was minimized to two sentences instead of a whole paragraph.
- The German achievement test was used instead of the German C-Test because both tests had the same statistical results.
- The procedure of grading the metalinguistic tests was highlighted during data collection to guarantee the maximum degree of full answers.
- Two sentences were replaced in the metalinguistic tests based on the teachers' suggestion. The teachers said that they did not cover the grammar rules included in these two sentences.

3.7 Validity of the Used Questionnaire and Tests

Checking the validity of a test is one of the most important elements in any research (McDonough & McDonough, 2014; Seliger & Shohamy, 1989) . As for the instruments used in this study, a group of experienced referees was invited to check the validity of the questionnaires and tests as illustrated in the following.

3.7.1 Questionnaires' Validity

To confirm the validity of the used questionnaires, two referees (see appendix 10) were requested to check their validity as designed and organized by the researcher depending on (Jessner, 2017b) in classifying the factors that affect third language acquisition. The rationale behind checking the validity is to confirm that all the elements in the questionnaire are accurate and suit the topic of the research.

3.7.2 C-Tests' Validity

To confirm the validity of the C-Tests (English, French, and German), the supervisor and three lecturers at the Higher Language Institute were asked to proofread the tests and check whether these tests suit the learners' level of proficiency. The first question was modified to suit the purpose of the research. Then the two C-Tests were passed to 15 learners at the HLI. Next, two texts were exchanged with the other two texts to befit the learners' level of proficiency.

3.7.3 Validity of the German and English Metalinguistic Tests

The validity of the German and English metalinguistic tests was verified by asking the supervisor and two lecturers at the AIU to check them. Two items were removed from the first section in the German metalinguistic test to suit the learners' level of proficiency.

3.8 Reliability of the Questionnaire and Tests

Cronbach's Alpha test was used to check the reliability of the questionnaire, and the results are as the following: the first section is 92, the second section of the test is 77, and the third section is 84, which means that the stability condition is fulfilled and the questionnaire is reliable.

Cronbach's Alpha test was also used to check the reliability of the used tests in the study. The result is 79, which means that the internal consistency of the tests is fulfilled, and the tests are reliable.

3.9 Data Collection Procedures

Data collection lasted for three months at the HLI. The researcher collected data from six classes of true-beginner learners of the German language (A1/1 level). While the second part of the study lasted two semesters during the academic year in 2018. The data were collected from four classes of true-beginner learners who are learning the German language (A1/1 level) at the AIU. The process of collecting data is presented in the Table 3.2.

Table 3.2 Overview of the data collection procedure

Stage 1	Stage 2	Stage 3	Stage 4
Week 1	Week 1 & week 2	Week 3 & week 4	Week 5
Distributing the learners' questionnaire. They did it in the class.	English and French C-Test were passed to German true-beginner classes (at the HLI and AIU).	The English metalinguistic test was distributed to learners in the third week. German Metalinguistic test was handed out to the learners in the fourth week.	The German achievement test was administrated on the last two sessions of the course.
Interviewing the German language teachers at the HLI and AIU.			

The researcher collected data from the Higher Language Institute from six classes in December 2018. The dean of the foreign languages department held a meeting to introduce the researcher to the teachers of the German language, and she asked for total cooperation before the start of the course. As can be seen from Table 3.4, the learners' questionnaire that is translated to Arabic was given to the learners at the HLI and AIU on the first day of the start of the course to get background information about the participating learners in this study (for

the content of this questionnaire (see Appendices 1 and 2). During the second stage of the data collection process was administering English and French C-Tests during the courses' time that were implemented and lasted for 20 minutes each.

The third stage was implemented during the third and fourth week to pass the English and German metalinguistic tests. Stage 4 took place during the last two sessions, and it involved examining the learners in two phases. The first session was allocated for the written test in which the learners were examined in the three skills: reading, listening and writing. The second phase was allocated for the oral test, which examined the speaking skills of the learners.

The second part of the study was conducted at the Arab International University. Before the start of the semester, the dean of the Center of the Foreign Languages and Requirements held a meeting to introduce the researcher, and he asked for total cooperation. The researcher collected data for two semesters during the academic year 2018. As can be seen from Table 3.4, the language history questionnaire that was translated to Arabic was given to the learners at the AIU on the first day of the semester to get more background information about the participating learners in this study (for the content of this questionnaire see appendix 1 and 2). The second stage in the process of collecting data was specified to pass English and French C-Tests during the session. Its testing process (C-Tests) lasted for 20 minutes each.

The third stage was implemented during the third and fourth weeks to pass the English and German metalinguistic tests. Stage 4 took place during the last two sessions of the course, and it involved examining the learners in two phases. The first day was allocated for the written test in which the learners were examined in the three skills: reading, listening and writing. The second phase was allocated for the oral test, which examined the speaking skills of the learners.

Variables Affecting Fourth Language Acquisition

Dependent variable: German Achievement exam

Independent Variables:

1. English and French Proficiency
2. Metalinguistic awareness
3. Language exposure and use
4. Motivation and self-efficacy
5. Gender, age, educational background and institute

3.10 Data Analysis

The data were analyzed by adapting descriptive and analytic statistics to investigate the effects of metalinguistic awareness and previous learned foreign languages on the acquisition of the German language. The used test to answer each question is presented. Moreover, the results are classified and displayed in suitable tables and figures.

3.11 Statistical Tests Used in This Study

The following tests were used to answer the research questions in Chapter 1.

1. Pearson Correlation Coefficient test is defined as:" The Pearson correlation coefficient (sometimes called the Pearson product-moment correlation coefficient or simply the Pearson r) determines the strength of the linear relationship between two variables".
2. A Simple Linear Regression test, which predicts one variable from another.
3. The Independent T-test compares the means of two samples. The two samples are normally from randomly assigned groups.
4. One-way ANOVA test determines the proportion of variability attributed to each of several components (Cronk, 2012).

3.12 Ethical Considerations

To conduct this research, the higher education board at Damascus University has granted the researcher a written permission statement to carry out this research at the Higher Language Institute. Besides, informed consent was obtained from all the participants and teachers at the HLI. In addition, the researcher also received a written permission statement from the dean of the Science Research Board at Arab International University to conduct this study. Informed consent was obtained also from all the participants at the AIU.

CHAPTER 4

RESULTS

4.1 Introduction

As previously presented, this study aims to examine which variables can impact the acquisition of German as a fourth language i.e. to study the role of the previously learned foreign languages. Moreover, to investigate whether metalinguistic awareness would be a strong predictor of the German language exam scores. The main variables, which were measured by the administrated tools, are reported descriptively and analytically.

This chapter displays the results of the research questions presented in Chapter 1. It is divided into two sections. The first section is allocated to demonstrate the results of the study that was conducted at the Higher Language Institute/Damascus University. The second part presents the findings of the second study that was carried out at the Arab International University.

4.2 Findings of the First Study at the HLI

In what follows, the results of research questions in Chapter 1 are shown in suitable tables and figures.

4.2.1 Foreign Languages' Proficiency and Fourth Language Acquisition

To answer Q1 (Does foreign language repertoire play a facilitator role while acquiring an additional language?), a Pearson correlation test was calculated and the results are demonstrated in Table 4.2.1.

Table 4.2.1 Correlation (English and French C-Tests /German exam)

Variable	M	SD	1	2
German exam mark	78.66	9.64		
E C-Test (1)	60.86	25.08	.442**	
F C-Test (2)	10.51	9.132	.268**	.409**

Note. *M* and *SD* are used to represent mean and standard deviation, respectively. *indicates $p < 0.05$. **indicates $p < 0.01$.

Table 4.2.1 illustrates a significant correlation between the German proficiency test and the English proficiency test ($r(90) = .44, p < 0.01$). Moreover, there is also a significant correlation between the German proficiency test and the French proficiency test ($r(90) = .26, p < 0.01$).

4.2.2 Metalinguistic awareness and Fourth Language Acquisition

To answer Q2 (What is the impact of metalinguistic awareness on fourth language acquisition?), a simple linear regression test was calculated and the summary of the results is demonstrated in Table 4.2.2.

Table 4.2.2 Summary of regression analysis to predict German proficiency

Variable	B	95% CI	β	T	P
E Meta-linguistic test	.47	[.27, .66]	.40	4.69	.000
G Meta-linguistic test	.54	[.32, .77]	.41	4.84	.000

Note. R^2 adjusted=.49. CI= Confidence interval for B.

A simple linear regression was calculated predicting the German exam grade based on the learners' English and German metalinguistic awareness test scores. A significant regression equation was found and the two predictors, namely English and German metalinguistic awareness tests explained 49% of the variance ($R^2=.49, F(2, 89) = 44, p < 0.01$) i.e. it was found that English and German metalinguistic awareness significantly predicted German proficiency (English metalinguistic test ($\beta = .47, p < 0.01$) German metalinguistic awareness ($\beta = .54, p < 0.01$)).

4.2.3 The Degree of Foreign Language Exposure and Use and Fourth language Acquisition

To answer Q3 (What is the relationship between the degree of exposure and use of the foreign languages and fourth language acquisition?), a Pearson Correlation test, and the results are presented in Table 4.2.3.

Table 4.2. 3 Correlations (German proficiency/exposure to English and French)

Variable	N	M	SD	1	2
German exam grade	92	79	9.64		
English average year of exposure (1)	92	15	2.27	0.08	
French average year of exposure (2)	92	4.75	2.84	.24*	.27*

*. Correlation is significant at the 0.05 level (2-tailed).

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

It can be noticed from Table 4.2.3 that the average mean of exposure to the French language is ($M=4.75$, $SD= 2.84$), and the mean grade of the French test is $M=10$ out of 100 which means that most of the participants' level of proficiency in French is beginner, even though they studied French for five years. Regardless of the participants' level of proficiency, the results show a significant correlation at $p < 0.05$ between German language proficiency grade and the average years of exposure to the French language ($r(90) = .24$ $p < 0.05$).

The role of the onset of exposure to English on English and German proficiency

To investigate the relationship between English and German proficiency and the onset age of exposure to English, a Pearson Correlation test was calculated and the results are demonstrated in Tables 4.2.4 and 4.2.5.

Table 4.2.4 Descriptive statistics (onset of exposure to English)

	N	M	SD
the onset of exposure to E listening skill	92	8.53	2.97
the onset of exposure to E speaking skill	92	9.43	3.30
the onset of exposure to E-reading skill	92	6.96	1.06
the onset of exposure to E writing skill	92	9.05	2.84

Table 4.2.5 Correlations (onset of exposure/English and German proficiency)

Variable	1	2	3	4	5	6
German exam grade	1					
English C-Test (1)	.44**	1				
the onset of exposure to E listening skill	-.34	-.11	1			
the onset of exposure to E speaking skill	-.13	-.06	.52**	1		
the onset of exposure to E reading skill	.017	-.08	-.05	-.00	1	
the onset of exposure to E writing skill	.092	-.04	.53**	.49**	.13	1

*. Correlation is significant at the 0.05 level (2-tailed).

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

As can be seen from Table 4.2.5, the mean onset of exposure to E listening skill is ($M=8.53$, $SD= 2.97$), whereas the mean onset of exposure to the E speaking skill is ($M=9.34$, $SD=3.30$). The mean onset of exposure to the E reading skill is ($M=6.96$, $SD= 1.06$), whereas the mean onset of exposure to E writing is ($M=9.05$, $SD= 2.84$). It can also be noticed from Table 4.2.6 that there are no correlations between the onset of exposure and German and English proficiency.

The role of the onset of the exposure to English language exposure across activities

To examine the relationship between the onset of exposure to English across environment on English C-Test scores and German exam scores, a Pearson correlation test was conducted and the results are presented in Table 4.2.6 as the following:

Table 4.2.6 Descriptive statistics (exposure to English across environment)

	N	M	SD
English C-Test	92	61	25.08
German exam scores	92	53	18.85
The onset age of using E at home	92	3	4.66
The onset age of using E with friends	92	3	5.36
The onset age of using E at school	92	3.70	4.5
The onset age of using E at work	92	0	4.59
The onset age of using E with technology	92	4	7.27
The onset age of using E to surf the net	92	3	6.26

As can be seen from Table 4.2.6, the mean onset age of using English at home is ($M=2.52$, $SD=4.66$), whereas the mean of the onset age of using English with friends is ($M= 3$, $SD=5.36$). The mean onset age of using E at school is ($M=3.70$, $SD=4.50$). The majority of the students do not work, so the mean onset age of using English at work is ($M=0$, $SD=4.59$). However, the mean of the onset age of using English with technology is ($M=4.05$, $SD=7.27$) and the mean of the onset age while surfing the net is ($M=3.05$, $SD=6.26$).

Table 4.2.7 Correlations (exposure to English across environment/English C-Test and German exam scores)

Variable	1	2	3	4	5	6	7
English C-test	1						
German exam scores (1)	.45**	1					
The onset age of using E at home	.14	.08	1				
The onset age of using E with friends	.32**	.25*	.60**	1			
The onset age of using E at school	.17	.15	.28**	.18	1		
The onset age of using E at work	.16	-.05	.23*	.22*	.08	1	
The onset age of using E with technology	.21*	.14	.11	.21*	.26*	.33**	1
The onset age of using E to surf the net (7)	.33**	.34**	.24*	.33**	.14	.14	.66**

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

*Correlation is significant at the 0.05 level (2-tailed)

As can be noticed from Table 4.2.7, there are significant correlations between English proficiency and the onset age of exposure across environment as the following: there is a significant correlation between English proficiency and the onset age of using English with friends ($r(90) = .32, p < 0.01$). There is also a significant correlation between English c-test grade and the onset age of using English with technology ($r(90) = .21, p < 0.05$). In addition, there is a significant correlation between English proficiency and using E while surfing the net ($r(90) = .33, p < 0.01$). Moreover, there is also a significant correlation between English c-test's scores and the onset age of using English with technology ($r(90) = .25, p < 0.01$). Moreover, there is a significant correlation between German proficiency and the mean of the onset age of using English while surfing the net ($r(90) = .34, p < 0.01$).

The role of the degree of using English across activities on English and German proficiency

To reveal the relationship between the degree of using English across activities and English and German proficiency, a Pearson Correlation, and the results are illustrated in Table 4.2.8.

Table 4.2.8 Descriptive statistics (English use across activities)

	N	M	SD
The average duration of using E to watch TV per day	92	1.66	2.08
the average duration of using E to listen to the radio per day	92	0.37	1
the average duration of using E to read per day	92	0.78	1.23
the average duration of using E to study per day	92	1.43	1.97
the average duration of using E at work per day	92	0.57	1.38
the average duration of using E to send emails per day	92	0.28	0.63

Table 4.2.8 shows that the participants' average duration of using English at home per day is ($M=1.66$, $SD=2.08$), while the average duration of listening to the radio is ($M=.37$, $SD=1$). The average duration of using English to read is ($M=.78$, $SD= 1.23$), whereas the average duration of using English to study is ($M=1.43$, $SD=1.97$). The average duration of using English to work is ($M=.57$, $SD=1.37$), whereas the average duration of using English to send emails is ($M=0.28$, $SD=0.63$).

Table 4.2.9 Correlations (English use across activities/ English and German proficiency)

Variable	1	2	3	4	5	6	7	8
English C-Test (1)	1							
German exam scores	.442**	1						
The average duration of using E watch TV	.214*	.070	1					
The average duration of using E listen to radio	.200	.093	.139	1				
The average duration of using E to read	.154	.065	.100	.039	1			
The average duration of using E study	.148	.187	.456**	.268**	.284**	1		
The average duration of using E at work	.130	.058	.389**	.054	.287**	.462**	1	
The average duration of using E to send emails (8)	-.011	.066	.139	.093	.305**	.339**	.469**	1

*. Correlation is significant at the 0.05 level (2-tailed).

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

As can be noticed from Table 4.2.9, most of the average durations of using English across activities have not been found significant variables while acquiring English and German in this context. Nevertheless, one variable has been found significant, namely using English while watching TV ($r(90) = .21, p < 0.01$).

The role of degree of exposure to French on French and German proficiency

To explore the relationship between the degree of exposure to L3 (F) and the German language exam scores and the French C-Test, a Pearson Correlation test was calculated and the results are presented in the Table 4.2.10 and Table 4.2.11.

Table 4.2.10 Descriptive statistics (French onset of exposure/German exam scores and French C-Test)

	N	M	SD
French C-Test	92	10.05	9.475
exam grade	92	78.663	9.6474
The onset of exposure to F listening	92	10.86	5.470
The onset of exposure to F speaking	92	11.88	6.074
The onset of exposure to F reading skill	92	10.49	5.786
The onset of exposure to writing skill	92	10.63	5.666

As can be noticed from Table 4.2.10, the mean of the onset age of exposure to listening in French is ($M=10.86$, $SD= 5.47$), while the mean of the onset age of exposure to the speaking skill in French is ($M=11.88$, $SD=6.07$). The mean of the onset age of exposure to reading in French is ($M=10.49$, $SD= 5.78$), whereas the mean of the onset age of exposure to writing skill in French is ($M=10.63$, $SD=5.66$).

Table 4.2.11 Correlations (French onset of exposure/German language proficiency)

Variable	1	2	3	4	5	6
French C-Test (1)	1					
exam grade	.274**	1				
The onset age of exposure to F listening skill	.085	.283**	1			
The onset age of exposure to F speaking skill	.104	.250*	.917**	1		
The onset age of exposure to F reading skill	.194	.204	.604**	.681**	1	
The onset age of exposure to writing skill (6)	.217*	.226*	.623**	.692**	.970**	1

*. Correlation is significant at the 0.05 level (2-tailed).

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

As can be noticed from Table 4.2.11, there are Significant correlations between the French proficiency and the onset age of exposure as the following: there is a Significant

correlation between French proficiency and the onset age of the exposure to the French writing skill ($r(90) = .27, p < 0.01$). There is a significant correlation between French proficiency and the onset age of exposure to the French reading skill ($r(90) = .21, p < 0.05$). Furthermore, it is also noticed that there are significant correlations between German proficiency and the onset of exposure to listening ($r(90) = .44, p < 0.01$), speaking ($r(90) = .25, p < 0.05$), writing ($r(90) = .26, p < 0.05$) and the duration of exposure to French ($r(90) = .23, p < 0.05$).

4.2.4 Psycholinguistic Variables and Fourth Language Acquisition

Self-efficacy Beliefs and L4

To examine the relationship between the foreign languages' proficiency and the learners' self-efficacy beliefs, a Pearson correlation was used to investigate the relationship between the participants' self-assessment and English and German proficiency. The results of the test are demonstrated in the Tables. 4.2.12 and 4.2.13.

Table 4.2.12 Descriptive statistics (E self-efficacy beliefs)

	N	M	SD
Self-efficacy in E listening proficiency	92	4.24	1.77
Self- efficacy in E speaking proficiency	92	3.82	1.87
Self- efficacy in E-reading proficiency	92	4.36	1.75
Self- efficacy in E writing proficiency	92	3.91	1.81

As can be seen in Table 4.2.12, the students were asked to rank their self-efficacy in English proficiency. by using a Likert scale that ranged as the following: 1= very poor, 2= poor, 3= limited, 4= essential, 5= good, 6= very good, and 7=native like. The data show that the students' mean rate of E self-efficacy in listening is ($M=4.24, SD 1.76$), whereas the students' mean rate of E self-efficacy in speaking is ($M=3.82, SD=1.87$). The students' mean rate of reading is ($M=4.36, SD=1.75$), whereas the students' mean rate of E self-efficacy in writing is ($M=3.91, SD=1.81$).

Table 4.2.13 Correlations (E self-efficacy beliefs/ English C-Test and German exam scores)

Variable	1	2	3	4	5
English C-Test	1				
German exam grade	.44**	1			
Self-efficacy in E listening proficiency	.50**	0.13	1		
Self-efficacy in E speaking proficiency	.54**	0.13	.74**	1	
Self-efficacy in E reading proficiency	.47**	0.19	.76**	.77**	1
Self-efficacy in E writing proficiency	.53**	.22*	.73**	.77**	.83**

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

*Correlation is significant at the 0.05 level (2-tailed)

To investigate the relationship between self-efficacy beliefs and English language proficiency, a Pearson correlation test was calculated. The results show significant correlations between the participants' self-efficacy beliefs in the four skills and the English language proficiency as the following: a strong correlation was found between the learners' listening self-efficacy beliefs and English language proficiency ($r(90) = .50, p < 0.01$). There is also a strong correlation between the learners' self-efficacy beliefs in speaking and English language proficiency ($r(90) = .54, p < 0.01$). Moreover, a strong correlation was found between reading the learners' self-efficacy beliefs and English language proficiency ($r(90) = .47, p < 0.01$), whereas a strong correlation was found between the learners' writing self-efficacy beliefs and English language proficiency ($r(90) = .53, p < 0.01$).

Moreover, to examine the relationship between the students' French self-efficacy beliefs and German and French proficiency, a Correlation *t*-test was used and the results are shown in Tables 4.2.14 and 4.2.15.

Table 4.2.14 Descriptive statistics (F self-efficacy beliefs)

	N	M	SD
Self-efficacy in F listening proficiency	92	1.83	1.68
Self-efficacy in F speaking proficiency	92	1.75	1.45
Self-efficacy in F reading proficiency	92	2.07	1.84
Self-efficacy in F writing proficiency	92	1.98	1.87

The students were asked to rank their self-efficacy in French by using a Likert scale that ranged as the following: 1= very poor, 2= poor, 3= limited, 4= essential, 5= good, 6= very good, and 7=native like. The data show that the mean F self-efficacy in listening skill is ($M=1.83$, $SD=1.68$), whereas the mean F self-efficacy in speaking skill is ($M=1.75$, $SD=1.45$). The mean F self-efficacy in reading skill is ($M=2.07$, $SD=1.84$), while the mean F self-efficacy in the writing skill is ($M=1.98$, $SD=1.87$).

Table 4.2.15 Correlations (F self-efficacy beliefs /French C-Test and German exam scores)

Variable	1	2	3	4	5	6
French C-Test	1.00					
German exam grade	.27**	1.00				
Self-efficacy in F listening proficiency	.18	.10	1.00			
Self-efficacy in F speaking proficiency	.21*	.11	.59**	1.00		
Self-efficacy in F reading proficiency	.20	.16	.67**	.79**	1.00	
Self-efficacy in F writing proficiency	.15	.23*	.58**	.71**	.83**	1.00

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

*Correlation is significant at the 0.05 level (2-tailed)

As can be noticed from Table 4.2.15, in general, the results of the correlation t -test show no significant relationship between French and German proficiency and the participants' self-efficacy. However, it is noticed that there is a significant correlation between French proficiency and the participants' self-efficacy in the speaking skill ($r(90), 20 = p < 0.05$). There

is also a significant correlation between German proficiency and the participants' self-efficacy in writing ($r(90, 23) = p < 0.05$).

Motivation and Fourth Language Acquisition

A One-way ANOVA test was calculated to check whether there are any variances in the German exam scores according to motivation.

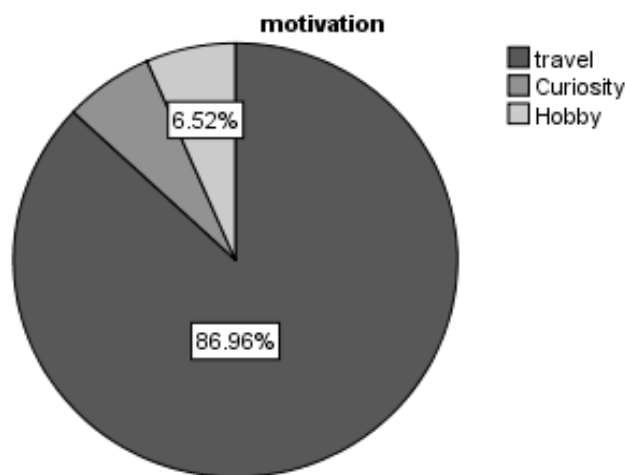


Figure 4.2.1 Students' motivation to learn German

It can be noticed from Figure 4.2.1 that 86.96% of the participants are learning German to travel abroad, while 6.52% are learning it out of curiosity. However, 6.52% of the participant stated that they are learning German because it is popular among graduate students to learn German, and it is good for a better future.

Table 4.2.16 One-way ANOVA (German exam scores /Motivation)

	SS	Df	MS	F	P
Between Groups	82.67	2.00	41.33	.44	.65
Within Groups	8386.89	89.00	94.23		
Total	8469.55	91.00			

The German exam scores were compared according to the participants' motivation by using a one-way ANOVA. The results show no significant differences between the groups according to motivation ($F(2, 89) = .44, p < 0.05$).

Gender and L4 Acquisition

An Independent t-test was conducted to examine the differences in the exam scores according to gender. Figure 4.2.2 and Table 4.2.16 display the summary of the results of the Independent t-test that explores the differences in the exam scores according to gender.

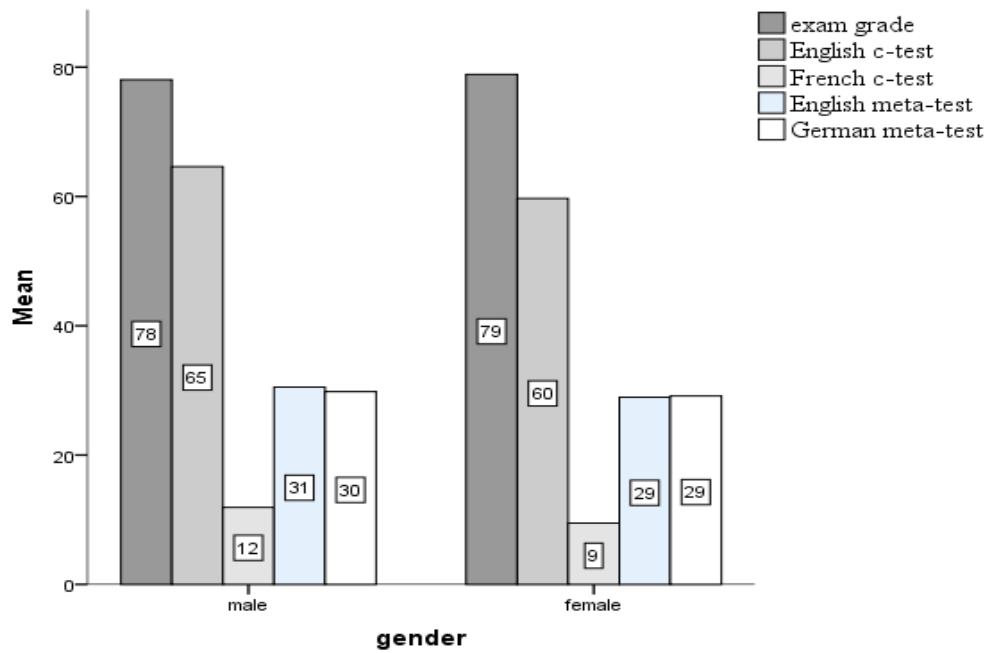


Figure 4.2. 2 Scores distribution according to gender

Table 4.2.17 Independent t-test (exam scores/gender)

	Gender	N	M	SD	SEM	T	Df	P
German exam mark	Male	22	78.05	9.85	2.10	-0.34	90	0.73
	Female	70	78.86	9.65	1.15			
English meta-test	Male	22	30.50	7.30	1.56	0.78	90	0.44
	Female	70	28.93	8.56	1.02			
German meta-test	Male	22	29.82	5.97	1.27	0.38	90	0.71
	Female	70	29.14	7.66	0.92			
French C-Test	Male	22	11.91	10.79	2.30	1.05	90	0.30
	Female	70	9.47	9.03	1.08			
English C-Test	Male	22	64.59	24.55	5.23	0.80	90	0.43
	Female	70	59.69	25.31	3.03			

Table 4.2.17 shows the results of the Independent t-test to compare the mean scores of the tests according to gender. It was found that there are no significant differences between males and females' exams scores as the following: the females' German exam mean grade is ($M=78.86$, $SD=9.65$), and the males' German exam mean grade is ($M=78.05$, $SD=9.85$); $t(90) = -0.34$, $p=0.73 > 0.05$. The females' English metalinguistic test mean grade is ($M=28.93$, $SD=8.56$), and the males' English metalinguistic test mean grade is ($M=30.50$, $SD=7.30$); $t(90) = 0.78$, $p=0.44 > 0.05$. The females' German metalinguistic test mean grade is ($M=29.82$, $SD=7.66$), and the males' German metalinguistic test mean grade is ($M=29.82$, $SD=5.97$); $t(90) = 0.38$, $p=0.71 > 0.05$. The females' French test mean grade is ($M=9.47$, $SD=9.03$), and males' French test mean grade is ($M=11.91$, $SD=10.79$); $t(90) = 1.05$, $p=0.30 > 0.05$. The females' English C-Test mean grade is ($M=59.69$, $SD=25.31$), and the males' English C-Test mean grade is ($M=64.59$, $SD=24.55$); $t(90) = 0.80$, $p=0.43 > 0.05$.

Strategy Use and L4 Acquisition

A One-way ANOVA test was calculated to explore the differences in the German exam Scores according to the used learning strategies and the results are present in Figure 4.2.5 and Table 4.2.14.

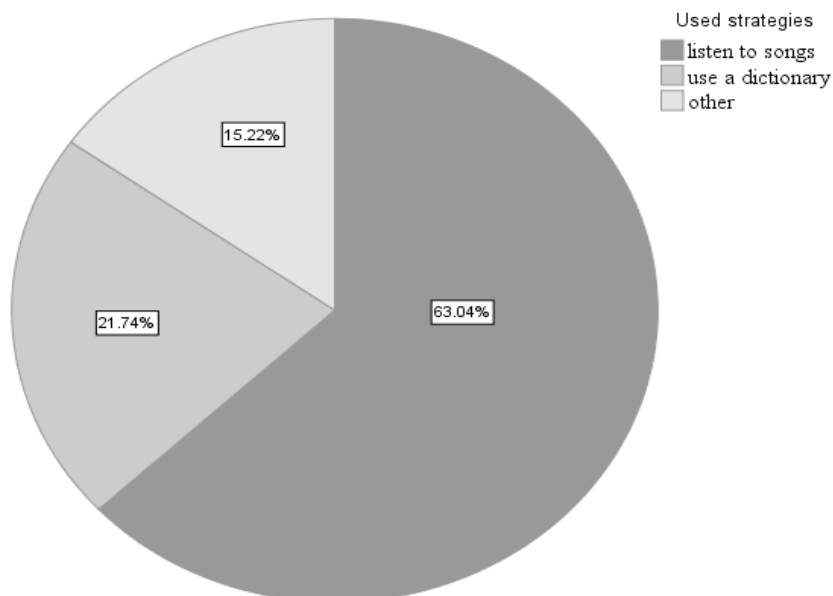


Figure 4.2. 3 Descriptive statistics (Used strategies)

As can be noticed from Figure 4.2.5, 63 % of the learners used listening to music to facilitate learning German, while 21% of the participant reported that they use a German dictionary. The rest of the participants (15 %) reported using the following strategies: 1. I usually prepare my lesson in advance. 2. I write the newly learned words in a sentence. 3. I try to use German in the class with my friends.

Table 4.2. 18 One-Way ANOVA (German exam scores/Used strategies)

	SS	Df	M	F	P.
Between Groups	156.8	2	78.4	.84	.43
Within Groups	8312.6	89	93.4		
Total	8469.5	91			

As can be noticed from Table 4.2.18, there are no differences in the German exam scores according to the used strategies by the learners ($F(2, 89) = .84, p < 0.05$).

Educational Background and L4 Acquisition

An Independent *t*-test was calculated to examine the differences in foreign languages' scores according to education. Table 4.2.17 shows the results:

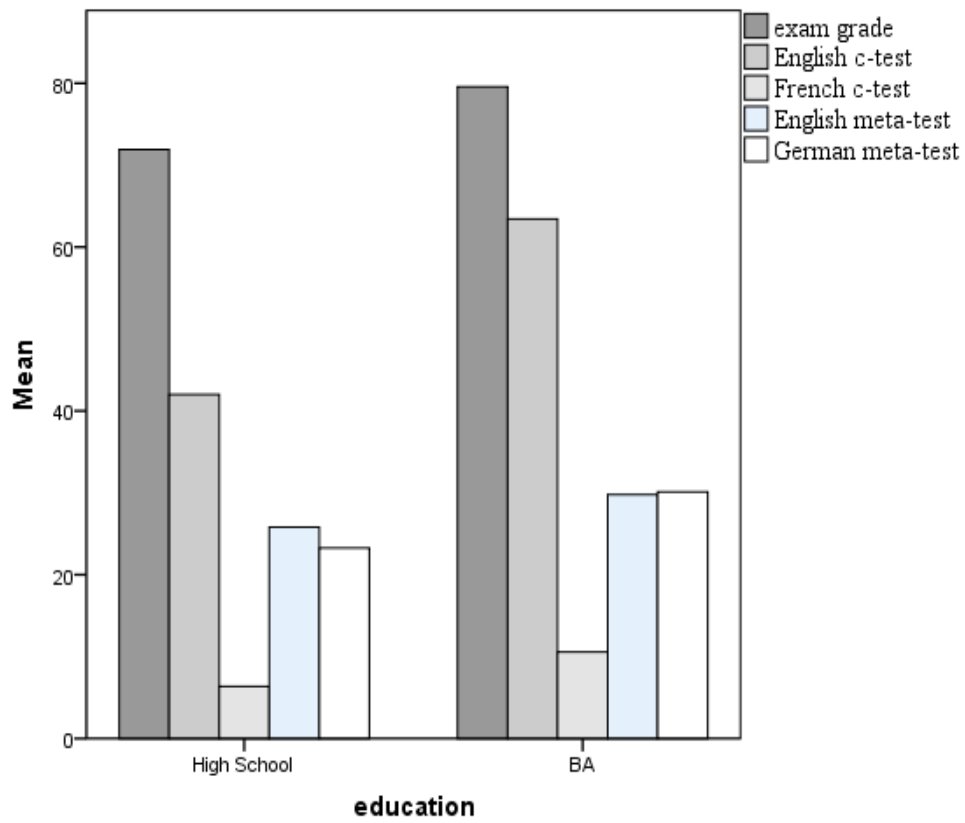


Figure 4.2.4 Tests' mean of distribution according to educational background

Table 4.2.19 Independent t-test (Exam scores/educational background)

	Education	N	M	SD	SEM	T	Df	P
German exam mark	High school	11	71.91	8.07	2.43	-2.55	90.00	0.01
	BA	81	79.58	9.52	1.06			
English meta-test	High school	11	25.82	7.11	2.14	-1.50	90.00	0.14
	BA	81	29.78	8.33	0.93			
German meta-test	High school	11	23.27	9.34	2.82	-3.07	90.00	0.00
	BA	81	30.12	6.59	0.73			
French C-Test	High school	11	6.36	5.16	1.56	-1.38	90.00	0.17
	BA	81	10.56	9.83	1.09			
English C-Test	High school	11	42.00	28.34	8.54	-2.75	90.00	0.01
	BA	81	63.42	23.67	2.63			

Table 4.2.19 shows that there are significant differences in the exam scores according to education. The mean score of the participants who have a high school degree in the German exam mark is ($M=71.91$, $SD=8.07$). Whereas the mean score of the participants who have a university degree in the German exam mark is ($M=78.05$, $SD=9.85$); $t(90) = -2.55$, $p=0.01 < 0.05$. The mean score of the participants who have a high school degree in the English Metalinguistic test is ($M=25.82$, $SD=7.11$), while the mean score of the participants who have a university degree in the English metalinguistic test is ($M=30.50$, $SD=7.30$); $t(90) = -1.50$, $p=0.14 < 0.05$. The mean score of the participants who have a high school degree in the French C-Test is ($M=6.36$, $SD=5.16$), whereas the mean score of the participants who have a university degree in French C-Test is ($M=10.56$, $SD=9.83$); $t(90) = -1.38$, $p=0.17 < 0.05$. The mean score of the participants who have a high school degree in English C-Test is ($M=42$, $SD=28.34$), whereas the mean score of the participants who have a university degree in English C-Test is ($M=63.42$, $SD=23.67$); $t(90) = -2.75$, $p=0.01 < 0.05$.

Age and L4 Acquisition

An Independent-samples t-test was conducted and the results are demonstrated in the following Table 4.2.18:

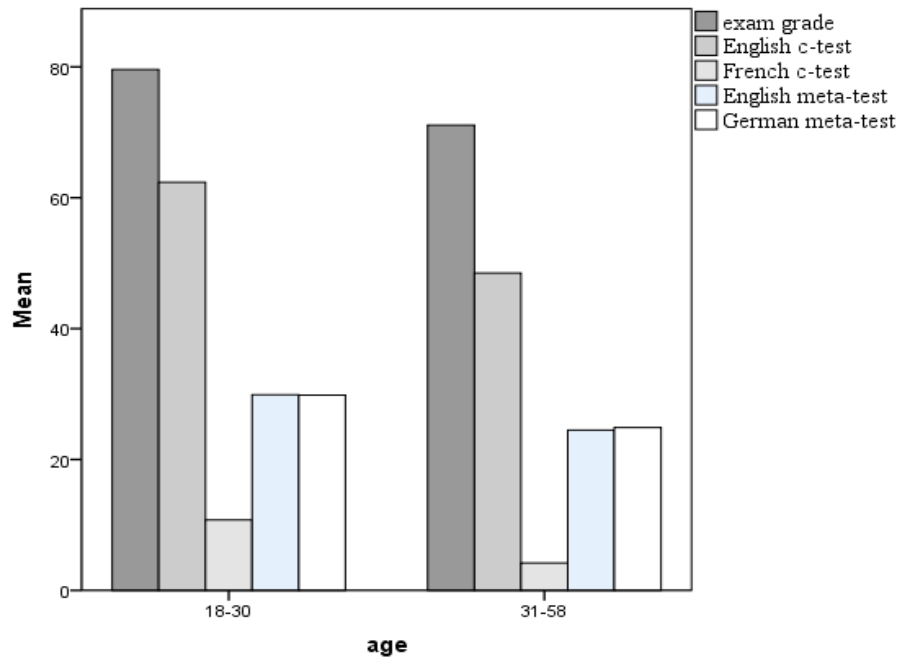


Figure 4.2.5 Tests' mean of distribution according to age

Table 4.2.20 Independent t-test results (Exam scores/age)

		Age	N	M	SD	SEM	T	Df	P
German exam mark		18-30	82	79.59	9.50	1.05	2.72	90.00	0.01
		31-58	10	71.10	7.64	2.41			
E metalinguistic test		18-30	82	29.89	8.26	0.91	1.98	90.00	0.05
		31-58	10	24.50	6.85	2.17			
G metalinguistic test		18-30	82	29.84	7.20	0.79	2.07	90.00	0.04
		31-58	10	24.90	6.57	2.08			
French C-Test		18-30	82	10.77	9.60	1.06	2.11	90.00	0.04
		31-58	10	4.20	6.00	1.90			
English C-Test		18-30	82	62.37	25.04	2.76	1.67	90.00	0.10
		31-58	10	48.50	23.06	7.29			

Table 4.2.20 shows that there are significant differences in the exam scores according to participants' level of education as the following:

The mean score of the participants who are between 18-30 years old in the German exam mark is ($M=79.59$, $SD=9.50$), whereas the mean score of the participants who are between 31-58 in the German exam mark is ($M=71.10$, $SD=7.64$); $t(90)=-2.72$, $p=0.01<0.05$. The mean score of the participants who are 18-30 years old in the 'English metalinguistic test is ($M=29.89$, $SD=8.26$), whereas the mean score of the participants who are between 31-58 years old in the English metalinguistic test is ($M=24.50$, $SD=6.85$); $t(90)= -1.98$, $p= 0.05<0.05$. The mean score of the participants who are 18-30 years old in the German metalinguistic test is ($M=29.84$, $SD=7.20$), while the mean score of the participants who are between 31-58 years old in the German metalinguistic test is ($M=24.90$, $SD=6.57$); $t(90) = 2.07$, $p=0.04<0.05$. The mean score of the participants who are between 18-30 years old in the French test is ($M=10.77$, $SD= 9.60$), while the mean score of the participants who are between 31-58 years old in the French test is ($M=4.20$, $SD= 6$); $t(90) = 2.11$, $p=0.04<0.05$. The mean score of the participants who are between 18-30 years old English C-Test is ($M=62.37$, $SD=25.04$), while the mean

score of the participants who are between 31-58 years old in the English C-Test is ($M=48.50$, $SD=23.06$); $t(90) = 1.67$; $p = 0.10 < 0.05$.

4.3 Findings of the Second Part of the Research at the AIU

The second part of the research is conducted at a private university (Arab International University). The findings of the research questions are presented as the following:

4.3.1 Foreign Languages' Proficiency and Fourth Language Acquisition

To answer Q1 (Does foreign language repertoire play a facilitator role while acquiring an additional language?), a Pearson correlation test was calculated and the results are represented in Table 4.3.1.

Table 4.3.1 Correlation (German exam scores / English and French C-Tests)

Variable	M	SD	1	2
German exam score	76.89	18.78		
E C-Test	75.15	20.45	.55**	
F C-Test	23.12	22.91	.33**	.31*

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

*Correlation is significant at the 0.05 level (2-tailed)

As can be seen from Table 4.3.1, there is a strong correlation between English proficiency and the German proficiency test ($r(63) = .55$, $p < 0.01$). Moreover, there is also a significant correlation between the German proficiency test and the French proficiency test ($r(63) = .33$, $p < 0.01$).

4.3.2 Metalinguistic Awareness and Fourth Language Acquisition

To answer Q2 (What is the impact of metalinguistic awareness on fourth language acquisition?), a simple linear regression test was calculated and the summary of the results is represented in Table 4.3.2.

Table 4.3.2 Summary of regression analysis of variables predicting German exam scores

Variable	B	95% CI	β	T	P
E Metalinguistic test	.47	.114	.41	6.40	.000
G Metalinguistic test	.54	.100	.40	2.67	.009

Note. R^2 adjusted=.49. CI= Confidence interval for B.

As can be noticed from Table 4.3.2, a linear regression test was used to predict the German exam score based on the English and German metalinguistic test scores. A significant regression equation was found ($F(2,62) = 37.33, p < 0.01$) with an $R^2 = .54$.

4.3.3. The Degree of Foreign Language Exposure and Use and Fourth Language Acquisition

To explore the relationship between the degree of exposure and use of the L2 (E) and L3 (F) and German language proficiency, a Pearson Correlation test was calculated, and the results are presented in Table 4.3.3.

Table 4.3. 3 Correlations (German exam scores/ average years of exposure to English and French)

Variable	N	M	SD	1	2
German exam mark	65	76.8	18.78		
English average years of exposure (1)	65	13.4	3.56	-.16	
French average years of exposure (2)	65	5.6	3.95	-.110	.14

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

*Correlation is significant at the 0.05 level (2-tailed)

Table 4.3.3 shows no significant correlations between the degree of exposure to English and French on the acquisition of learning German ($r(63) = -.16, p < 0.01$); $r(63) = -.11, p < 0.01$).

The role of the onset of exposure to English

To investigate the relationship between English and German proficiency and the onset age of exposure to E, a Person Correlation test was used and the results are presented in Table 4.3.4.

Table 4.3.4 Descriptive statistics (onset of exposure to English)

	N	M	SD
The onset age of exposure to E listening skill	65	8.17	3.58
The onset age of exposure to E speaking skill	65	9.32	3.82
The onset age of exposure to E-reading skill	65	8.97	3.09
The onset age of exposure to E writing skill	65	9.89	3.65

As can be noticed in Table 4.2.4, the mean age of the exposure to listening in English is 8.17 ($M=8.17$, $SD= 3.58$) the minimum age of the exposure to the listening skill is 0 which means that some students did not practice this skill, whereas the maximum age to the exposure to the listening skill is 19. The mean of exposure to the speaking skill in English is 9.32 ($M=9.32$, $SD=3.82$) the minimum age is 0 and the maximum is 20. The mean age when exposed to reading in English is 8.97 ($M=9.97$, $SD= 3.09$), the minimum is 5 and the maximum is 20. The writing skill's exposure mean is 9.89 ($M=9.89$, $SD=3.65$). The mean of English as foreign language use is 13 ($M=13.49$, $SD= 3.56$) the minimum duration of use is 0 and the maximum is 21.

Table 4.3.5 Correlations (E onset of exposure/English C-Test and German exam scores)

Variable	1	2	3	4	5
German exam score	1				
English C-Test(1)	.55**	1			
the onset age of exposure E listening	.15	.16	1		
the onset age of exposure E speaking	.13	.28*	.43**	1	
the onset age of exposure E reading	.15	.13	.46**	.41**	1
the onset age of exposure E writing (5)	.11	.14	.36**	.34**	.58**

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

*Correlation is significant at the 0.05 level (2-tailed)

As can be noticed from Table 4.3.5, there are no correlations between the onset age of exposure to the four skills of E on English proficiency. However, it is noticed that there is one significant correlation between German proficiency and the onset of exposure to the English speaking skill ($r(63) = .28, p < .005$).

The role of the onset of exposure to English across the environment

To examine the relationship between the onset of exposure to English across environment on English C-Test and German exam scores, a Pearson correlation test was conducted and the results are presented as the following:

Table 4.3.6 Descriptive statistics (exposure to English across environment)

	N	M	SD
the onset age of using E at home	65	3.57	4.86
the onset age of using E with friends	65	6.46	6.36
the onset age of using E at school	65	6.49	4.09
the onset age of using E at work	65	1.18	4.21
the onset age of using E with technology	65	8.34	6.85
the onset age of using E to surf the net	64	8.05	6.81

As can be seen from table 4.3.7, the mean of the onset age of exposure at home to English is ($M=3.57$, $SD=4.86$). The mean onset age of exposure with friends while using English is ($M=6.46$, $SD=6.35$), while the mean onset age of exposure at school is ($M=6.49$, $SD=4.09$). The majority of the students do not work, so the mean onset exposure degree at work is ($M=1.18$, $SD=4.21$). However, the mean onset age of exposure with technology is ($M=8.34$, $SD=6.85$), whereas the mean onset age of exposure to surf the net is ($M=8.05$, $SD=6.80$).

Table 4.3.7 Correlations (E onset of exposure across environment/ English C-Test and German exam scores)

Variable	1	2	3	4	5	6	7
German exam score	1.00						
English C-Test (1)	.55**	1.00					
The onset of exposure to E at home	.29*	.28*	1.00				
The onset of exposure to E with friends	.23	.17	.66**	1.00			
The onset of exposure to E at school	.07	-.11	.22	.45**	1.00		
The onset of exposure to E at work	-.09	.24	-.09	.16	.06	1.00	
The onset of exposure to E with technology	.20	.17	.47**	.57**	.42**	.12	1.00
The onset of exposure to E surf the net (7)	.23	.12	.40**	.37**	.34**	.17	.75**

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

*Correlation is significant at the 0.05 level (2-tailed)

Table 4.3.8 demonstrates a significant correlation between English proficiency and the onset age of exposure to English at home ($r(63) = .29, p < 0.05$). There is a significant correlation between the onset age of using English at home and German proficiency ($r(63) = .28, p < 0.05$).

The role of the degree of using English across activities

To investigate the relationship between the degree of using English across activities and English C-Test and German exam scores, a Pearson Correlation test was calculated and the results are presented in Table 4.3.8.

Table 4.3.8 Descriptive statistics (English use across activities)

	N	M	SD
The average duration of using E to watch TV	65	3.06	4.96
The average duration of using E to listen to the radio	65	1.17	3.42
The average duration of using E to read	65	1.62	2.57
The average duration of using E study	65	3.80	4.33
The average duration of using E at work	65	.83	1.87
The average duration of using E to send emails	65	.44	1.18

Table 4.3.8 shows the descriptive statistics about the average duration of using English across activities as the following: The average duration of using E to watch TV per day is ($M=3.06$, $SD=4.95$), while the average duration of using E to listen to the radio is ($M=1.17$, $SD=3.42$). The average duration of using E to read is ($M=1.62$, $SD= 2.57$), whereas the average duration of using E to study is ($M=3.80$, $SD=4.33$). The average duration of using E to work is ($M=.83$, $SD=1.86$), while the average duration of using E to send emails is ($M=0.43$, $SD= 1.18$).

Table 4.3.9 Correlations (E degree of use across activities/English C-Test and German exam scores)

Variable	1	2	3	4	5	6	7
German exam score	1.00						
English C-Test (1)	.55**	1.00					
Degree of using E to watch TV	.14	.21	1.00				
Degree of using E to listen to radio	.04	-.04	.43**	1.00			
Degree of using E to read	.10	-.03	.34**	.35**	1.00		
Degree of using E to study	.18	.09	.50**	.01	.48**	1.00	
Degree of using at work	.20	.13	.27*	.42**	-.08	.04	1.00
Degree of using to send emails (7)	.08	.15	.57**	.67**	.07	.10	.58**

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

*Correlation is significant at the 0.05 level (2-tailed)

Table 4.3.9 shows no correlations between the degree of using English across different activities and German and English proficiency at the $p < 0.01$.

The role of the degree of exposure to French

To reveal the relationship between the degree of exposure to L3 (F) French C-Test and German exam scores, a Pearson Correlation test was used and the results are presented in Table 4.2.10 and Table 4.3.11.

Table 4.3.10 Descriptive statistics (French onset exposure)

	N	M	SD
F onset exposure/listening	65	9.20	5.31
F onset exposure/ speaking	65	8.52	6.08
F onset exposure/reading	65	9.89	5.51
F onset exposure/writing	65	9.37	5.77

As can be noticed from Table 4.3.10, the mean of the onset age of exposure to the listening in French is ($M=9.95$, $SD= 5.31$), while the mean of the onset age of exposure to the speaking skill in French is ($M=9.42$, $SD=6.14$). The mean of the onset age of exposure to the reading in French is ($M=10.35$, $SD= 5.59$), whereas the mean of the onset age of exposure to the writing skill is ($M=9.92$, $SD=5.80$). The mean duration of exposure to the French language is ($M=5.34$, $SD= 3.57$).

Table 4.3.11 Correlations (F onset exposure /French C-Test and German exam scores)

Variable	1	2	3	4	5	6
German exam score	1					
French C-Test (1)	.33**	1				
F onset exposure/ listening	-.33**	-.18	1			
F onset exposure/speaking	-.29*	-.21	.724**	1		
F onset exposure/ reading	-.36**	-.17	.848**	.73**	1	
F onset exposure/writing (6)	-.33**	-.11	.798**	.78**	.83**	1

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

*Correlation is significant at the 0.05 level (2-tailed)

Table 4.2.11 shows a significant correlation between the German exam scores and the degree of exposure to French-speaking, reading, and writing skills.

4.3.4 Psycholinguistic Variables and Fourth Language Acquisition

Self-efficacy Beliefs and Foreign Languages' Proficiency

To examine the relationship between the students' self-efficacy beliefs and the foreign languages' proficiency, a Pearson correlation was used to investigate the role of the participants' self-efficacy beliefs on German and English proficiency. The results of the test are demonstrated in Tables 4.3.12 and 4.3.13.

Table 4.3.12 Descriptive statistics (E self-efficacy)

	N	M	SD
Self-efficacy in E listening proficiency	65	5.37	1.11
Self-efficacy in E speaking proficiency	65	4.98	1.01
Self-efficacy in E-reading proficiency	65	5.48	.99
Self-efficacy in E writing proficiency	65	5.32	.87

The students were asked to rank their English self-efficacy beliefs. by using a Likert scale that ranged as the following: 1= very poor, 2= poor, 3= limited, 4= essential, 5= good, 6= very good, and 7=native like. The data manifest that the mean of self-efficacy in E listening is ($M=5.37$, SD 1.11), while the mean of self-efficacy in E the speaking skill is ($M=4.98$, $SD=1$). The mean of self-efficacy in the reading skill is ($M=5.48$, $SD=.98$), while the mean of self-efficacy in the writing skill is ($M=5.32$, $SD=.86$).

Table 4.3.13 Correlations (E self-efficacy/English C-Test and German exam scores)

Variable	1	2	3	4	5
German exam score (1)	1.00				
English C-Test	.55**	1.00			
Self-efficacy in E listening proficiency	.05	.22	1.00		
Self-efficacy in E speaking proficiency	.04	.19	.59**	1.00	
Self-efficacy in E reading proficiency	.47**	.32**	.51**	.45**	1.00
Self-efficacy in E writing proficiency(6)	.36**	.22	.31*	.47**	.69**

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

*Correlation is significant at the 0.05 level (2-tailed)

As can be noticed from Table 4.3.13, there are positive correlations between German proficiency and English self-efficacy beliefs in reading skill ($r(63) = .47$, $p < 0.01$). In addition, there is also a significant correlation between the participants' self-efficacy beliefs writing skill ($r(63) = .36$, $p < 0.01$). In addition, there is also a significant correlation between English proficiency and self-efficacy beliefs in the English reading skill ($r(63) = .32$, $p < 0.01$).

Moreover, to examine the relationship between the students' self-efficacy beliefs of their French proficiency on German and French proficiency, a Pearson correlation test was used to investigate the effect of English use on the learners' English proficiency. The results of the tests are demonstrated in Tables 4.3.14 and Table 4.3.15.

Table 4.3. 14 Descriptive statistics (F Self-efficacy)

	N	M	SD
Self-efficacy in F listening proficiency	65	2.20	1.64
Self-efficacy in F speaking proficiency	65	1.72	1.44
Self-efficacy in F reading proficiency	65	2.40	2.01
Self-efficacy in F writing proficiency	65	2.29	2.19

The students were asked to rank their French self-efficacy by using a Likert scale that ranged as the following: 1= very poor, 2= poor, 3= limited, 4= essential, 5= good, 6= very good, and 7= native like. The data show that the mean of F self-efficacy beliefs in the listening skill is ($M=2.20$, $SD=1.64$), while the mean of F self-efficacy beliefs in the speaking skill is ($M=1.72$, $SD=1$). The mean of F self-efficacy beliefs in the French reading skill is ($M=2.40$, $SD=2.01$), whereas the mean of F self-efficacy beliefs in the writing skill is ($M=2.29$, $SD=2.19$).

Table 4.3.15 Correlations (F Self-efficacy/ German exam scores and French C-Test)

Variable	1	2	3	4	5
German exam scores	1.00				
French C-Test (1)	.33**	1.00			
Self-efficacy in F listening proficiency	-.10	.02	1.00		
Self-efficacy in F speaking proficiency	-.08	.05	.79**	1.00	
Self-efficacy in F reading proficiency	.04	.00	.88**	.81**	1.00
Self-efficacy in F writing proficiency (5)	.13	.01	.70**	.65**	.73**

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

*Correlation is significant at the 0.05 level (2-tailed)

As can be noticed from Table 4.3.15, there are no correlations between the participants' self-efficacy beliefs in French and German and French language proficiency at the $p < 0.05$.

Motivation and L4 Acquisition

A One-way ANOVA test was calculated to check whether there are any variances in German exam scores according to motivation.

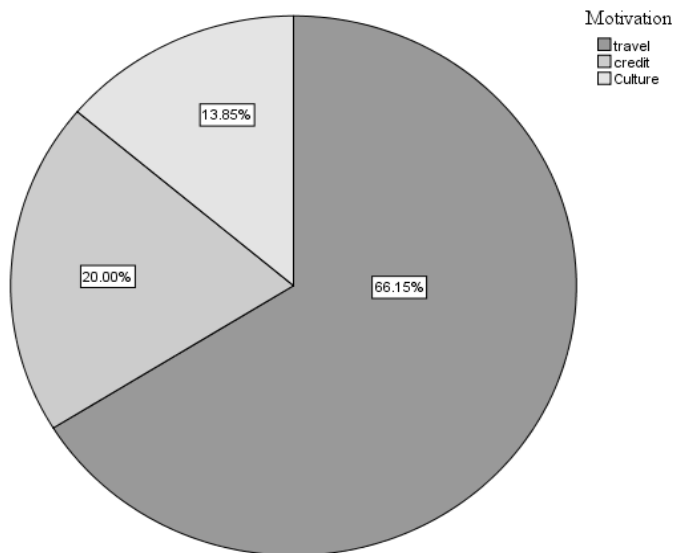


Figure 4.3.1 *Distribution of the Learners' motivation*

As can be noticed from Figure 4.3.1, 66 % of the participants want to study the German language to travel abroad, whereas 20 % of the sample are motivated to study it and to get extra credits to graduate. It is also noticed that 13 % of the sample want to study German to learn more about the German culture.

Table 4.3.16 One-way ANOVA (motivation/German exam scores)

	SS	Df	MS	F	P
Between Groups	1337.5	2	668.7	1.9	.15
Within Groups	21240.6	62	342.5		
Total	22578.2	64			

As can be noticed from Table 4.3.13, The German exam scores were compared according to the participants' motivation by using a one-way ANOVA. The results show no significant differences between the groups according to motivation ($F(2, 62) = 1.9, p < 0.05$).

Gender and L4 Acquisition

An Independent t-test was calculated to examine the differences in the exam scores according to gender. Table 4.3.17 shows a summary of the findings.

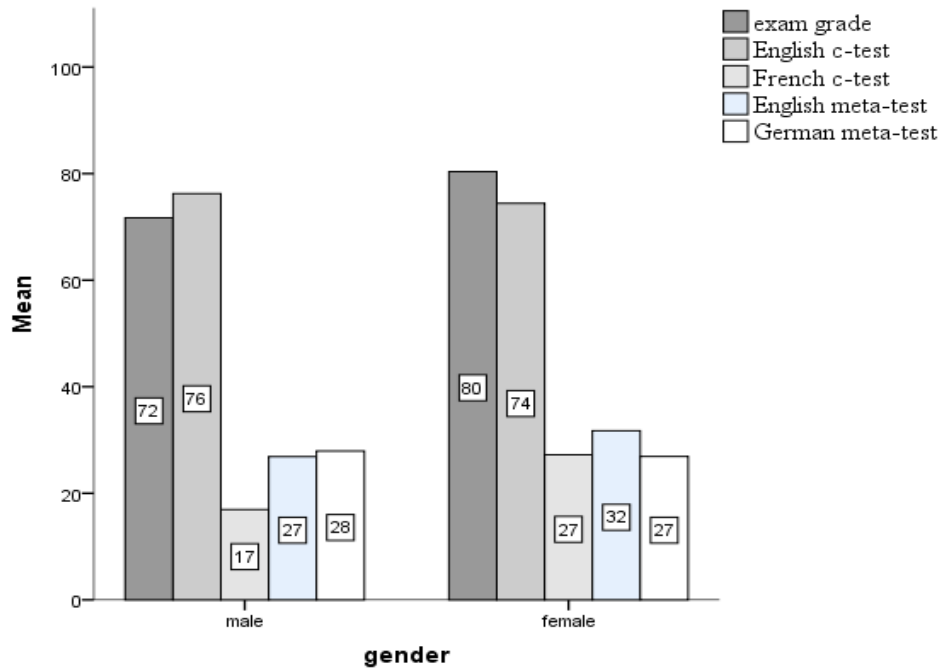


Figure 4.3.2 Tests' mean of distribution according to gender

Table 4.3.17 Independent t-test (exam scores/ gender)

	Gender	N	M	SD	SEM	T	F	P
German exam score	Male	26	71.69	16.24	3.19	-1.857	63	.068
	Female	39	80.36	19.74	3.16			
English C-Test	Male	26	76.23	18.79	3.69	.344	63	.732
	Female	39	74.44	21.70	3.48			
French C-Test	Male	26	16.96	19.10	3.75	-1.800	63	.077
	Female	39	27.23	24.52	3.93			
E metalinguistic test	Male	26	26.88	8.86	1.74	-1.995	63	.050
	Female	39	31.74	10.08	1.61			
G metalinguistic test	Male	26	27.92	6.16	1.21	.628	63	.532
	Female	39	26.90	6.64	1.06			

Table 4.3.14 shows that females, in general, have higher scores as the following: the mean grade of the German exam is ($M=80$, $SD=19.74$), whereas the mean grade of the English Metalinguistic test is ($M=32$, $SD=10$). The mean grade of the French C-Test grade is ($M=27$, $SD= 25$), the males' scores are as the following: the mean grade of the German exam grade is ($M=72$, $SD=8.86$), whereas the English metalinguistic test grade is ($M=29$, $SD= 6.16$). The French test ($M= 17$, $SD=19$). However, both males and females' English test scores are similar: the mean test score of males is ($M= 76$, $SD=18.79$) and the females' mean test score is ($M= 74.44$, $SD= 21.70$). Nevertheless, even though the females' superiority in all languages tests, there is no significant correlation between the exam scores according to gender.

Strategy Use and L4 Acquisition

A One-way ANOVA test was calculated to examine the differences in the German exam scores according to the participants' used strategies, and the results are present in Table 4.3.18.

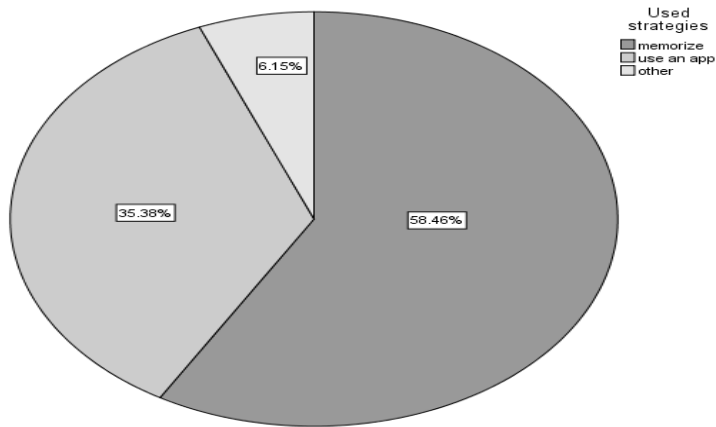


Figure 4.3.3 Descriptive statistics (Used strategies)

As can be noticed from Figure 4.3.3, 56 % of the participants reported memorizing new words to facilitate learning German, while 36 % of the participants said that they use and an electronic app such as Duolingo. The remaining 6% used the following Strategies: 1. the learners chat with their classmate in German. 2. They tried to watch a German TV series for beginners. 3. They write the new words in a notebook. 4. They use the new words in a sentence.

Table 4.3.18 One-way ANOVA (Used strategies/German exam scores)

	SS	Df	M	F	P
Between Groups	89.7	2	44.8	.12	.88
Within Groups	22488.4	62	362.7		
Total	22578.2	64			

As can be seen from Table 4.3.18, the results show no differences in the German exam scores according to the used strategies by the learners ($F(2, 62) = .12, p < 0.05$).

To investigate the differences in the German exam scores according to the institute, an Independent-sample t-test was carried out, and the results are as the following:

Table 4.3.19 Independent t-test (German exam scores/ Institute)

Institute		<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>F</i>	<i>P</i>
German exam score	HLI	92	78.663	9.6474	.772	40.871	.000
	AIU	65	76.892	18.7826			
E metalinguistic test	HLI	92	29.30	8.262	-.342	1.709	.193
	AIU	65	29.80	9.840			
G metalinguistic test	HLI	92	29.30	7.265	1.778	.400	.528
	AIU	65	27.31	6.422			
F C-test	HLI	92	10.05	9.475	-4.912	47.451	.000
	AIU	65	23.12	22.919			
E C-test	HLI	92	60.86	25.089	-3.788	4.062	.046
	AIU	65	75.15	20.457			

As can be noticed from Table 4.3.19, there are significant differences in the German exam scores according to the institute. Moreover, there are also significant differences in the French test according to the institute.

CHAPTER 5

DISCUSSION

5.1 Discussion of the Results

The objective of this study is to examine variables that can affect the acquisition of German as a fourth language. Different factors, which are hypothesized to affect this process such as previously learned foreign languages that are typologically related, metalinguistic awareness, and psycholinguistic variables, have been compared to the results of previous studies in this field. Moreover, the results from the two parts of the study will be combined in the discussion. In case of contradictory results, the author will highlight that.

Foreign languages' Proficiency Role while Acquiring the Fourth Language

Question 1 in this study addressed the relationship between English as an L2, French as an L3, and German as an L4. To investigate the first hypothesis, a Pearson correlation test was used to explore the relationship between English and French proficiency and German language acquisition as a fourth language. The results show a significant correlation between the German exam's scores and English C-Test scores. Moreover, there is also a significant correlation between the German exam's scores and the French C-Test scores. The results of the first question are in line with the assumption of the DMM and the Factor model that assert the positive role of the previously learned on the acquisition of an additional language under certain circumstances. Hufeisen & Marx (2007, p. 313) attribute this to the learners' experiences they gained because of their second language "L3 learner already knows what it feels like to approach a new language[...]The learner may have previously explored what foreign language learner type she is and will be able to employ suitable strategies and techniques accordingly". Also, Todeva and Cenoz (2009) confirm that prior linguistic knowledge reinforces learning all foreign language skills and on all levels. They confirm the superiority of the bilinguals over monolinguals while acquiring a third language. Another study that was conducted by Cenoz and Valencia (1994) highlights the impact of bilingualism in the Basque country on third language acquisition by school students. The results show a close connection between bilingualism and third language acquisition. Many researchers can attribute this superiority to the broader linguistic repertoire acquired by bilinguals and multilinguals. From the DMM perspective, third language learners differ from second language learners in many ways. Jessner (2008b, p. 5) states "the influence that the development of a multilingual system exerts on the learner and the learning process such as greater expertise in learning skills and qualities

distinguishing the experienced from the inexperienced learner." (p.5). This result is in line with Interdependence hypothesis. The previous linguistic knowledge of the learners at the HLI and AIU i.e. "underlying proficiency" in English and French are found to present significant variables. This means according to CUP that they can enhance the cognitive transfer and academic skills based on the two foreign languages (English and French) to the new acquired language (German).

As discussed in Chapter 2, most of the third language studies concentrate on the advantages of bilingualism on third language acquisition and the superiority of the bilingual learners over the monolingual ones in TLA. Nevertheless, when focusing on specific aspects of foreign languages' proficiency, some studies show no differences between bilinguals and monolinguals. For instance, van Gelderen et al. (2003) conducted a study in Netherlands to compare reading comprehension skills between bilinguals and monolinguals Dutch secondary students. The results of that study show no differences between the two groups regarding reading comprehension skills. In the same vein, Cenoz and Valencia (1994) conducted a study in which bilingual readers performed significantly lower than monolingual ones. However, Cenoz (2013) attributed this result to the fact that "bilinguals do not necessarily have advantages across-the-board in every aspect of TLA, so studies that select a narrow linguistic focus may not find any differences." (p. 77).

Not only linguistic knowledge but also the linguistic distance among the three foreign languages in this current study has a key influence over the newly acquired knowledge. The Arabic language is typologically distant and has not been tested in the L1 speakers of Arabic. The positive influence has been attributed to the closely related languages (see also Rothman, 2011). The three foreign languages i.e. English, French and German are Indo-European languages i.e. they share the same typological system, which means that transfer is believed to occur to the most typologically similar target language. Jessner (2006, p. 118), whose study also concentrated on German, Italian, and English, affirms that "typology and recency of use seem to play a decisive role in multilingual production".

To sum up, the first hypothesis assumes that multilingualism can enhance acquiring an additional language under certain circumstances. The findings of the first question are in line with previous research that links bilingualism to enhanced additional language acquisition.

Metalinguistic Awareness and Fourth Language Acquisition

Another factor, which is also linked to multiple language learning, is metalinguistic awareness which is based on a large body of studies on TLA. From the DMM perspective, a high level of

metalinguistic awareness is associated with the acquisition of multiple languages. The second hypothesis in this study assumes that the German language proficiency would be affected by metalinguistic awareness in English and German. A simple linear regression test was calculated and the results show that English and German metalinguistic awareness scores can predict 49% of the variance. This regression analysis weighs the relationship between English and German metalinguistic awareness and German language proficiency, which is in the same vein with many studies that highlight the direct connection between metalinguistic awareness and the acquisition of an additional language. Jessner (2014) confirms that multilingual learners develop multilingual awareness and skills as a result of their multiple linguistic resources. From the DMM perspective, second language learners differ from third language learners in terms of their metalinguistic level, learning strategies, and their acquisition of an additional language due to contact with a third language. TLA studies affirm that multilingual learners' competence in multiple languages can result in reinforcing metalinguistic awareness' levels. For example, Jessner (1999a, p. 206) collected data from trilingual adults learning English as an L3 by using think-aloud protocols in academic writing tasks in L3. She points out that "[m]etalinguistic awareness, which is seen as enhanced in multilinguals, plays a central and facilitating role in the acquisition of additional languages". Moreover, Cenoz & Gorter (2011, p. 4) collected data from 165 secondary school students who speak Basque or/and Spanish as L1 and English as L3. They also pointed out that "one of the outcomes of bi/multilingualism often associated with the acquisition of additional language is the development of metalinguistic awareness". This result is also in line with the Factor Model by Hufeisen and Marx (2007). One of the influencing factors in this model is the cognitive factors category. The authors affirm that L3 learners differ from L2 because of their familiarity with the "process of learning an additional language", which will enhance their cognitive and metalinguistic abilities.

The result of Q2 supports the hypothesis that multilingualism is associated with higher levels of metalinguistic awareness which in return can facilitate learning German as a fourth language.

The Degree of Exposure and Use of L2 (E) and L3 (F) on Fourth Language Acquisition

To investigate the role of the duration of exposure to L2 (English) and L3 (French) on German language proficiency, a Pearson correlation test was conducted. The data results show a significant correlation between the average years of exposure to French and German language proficiency. However, when the study was replicated at the AIU, there were no significant correlations between these variables. This result is in contrast to the many studies that explored the impact of exposure on foreign language acquisition. For instance, Lindgren & Muñoz

(2013) conducted a study to investigate the impact of the parents' educational level, the degree of using the foreign language, frequency of exposure, and use on the participants' listening and reading scores of 865 students from seven countries. The regression analysis results showed that both degrees of exposure and parents' FL use explained 26.8% of the variance in the listening and reading scores. Another study that was conducted by Cenoz & Valencia (1994) examined the influence of bilingualism on learning English as an L3. The results of the regression tests showed that exposure is a good predictor of third language achievement. Language exposure is classified under sociolinguistic factors in which the learners' use of language at home may affect the degree of proficiency. However, the current result can be attributed to the fact that the Syrian participants did not need to use English and French in their daily life. According to Thomas (1988), this exposure can have a positive impact if the background languages have been actively employed by the learners. This "adequate" element i.e. proper exposure was missing in the Syrian context which is in line with the claims of Cenoz (2013d), which associated more exposure to better proficiency. Most of the participants in this study finished high school and got their bachelor's degrees during the current crisis in Syria. Syria has been subject to sanctions since 2012 in which most of the foreign embassies and establishments are closed until the date of collecting data in 2018 due to sanctions. For example, if Syrian students want to take the IELTS exam, they have to travel to neighboring countries such as Lebanon or Jordan to take a very costly exam. Syrian students have been isolated from the world for 9 years so far.

The results of the data concerning the relationship between the onset of exposure to L2 (English) across the environment and English and German proficiency show a significant correlation between English proficiency and the onset age of using English with friends and while using technology. Moreover, there is a significant correlation between German proficiency and the onset age of using English to surf the net. However, when the study was replicated at the AIU one variable was found significant, namely the onset age of using English at home which is in line with the study of Cenoz & Valencia (1994) in which they found the language use at home enhances third language proficiency.

However, the relationship between English use across activities and English and German proficiency was not found that significant in this Syrian context. The results of the Correlation test found only one variable that is significant namely, using English while watching TV. This result is not surprising since the participant reported that it is the most actively used activity per day by the participants in which the mean duration of the degree of

using English while watching TV was the higher duration in comparison with the other activities (M=2) per day. Nevertheless, when the study was replicated at the AIU, no correlations were found between the degree of using English across activities and English and German proficiency. This result can be attributed to the fact that the participants do not use English during their daily activity, which might influence their proficiency. Most of the learners of foreign languages use these languages inside the walls of their classrooms. No real contact or use is detected in the Syrian context during the current crisis, which might help the development of this knowledge. This result is also in line with Cummins (1981, p. 29) Interdependence hypothesis, which states the following:

Instruction in L_x is effective in promoting proficiency in L_x, transfer of this proficiency to L_y will occur provided there is adequate exposure to L_y (either in school or environment) and adequate motivation to learn L_y.

Surprisingly there were significant correlations between the German proficiency and the onset of exposure to the speaking, reading, and writing skills in French in both parts of the study even though that most of the participants did not do well in the French C-Test. The participants are considered beginner learners according to the results of the test. However, this result is in line with many studies that highlight the impact of the last acquired language on TLA (Bardel & Falk, 2007; De Angelis, 2007; Williams & Hammarberg, 1998). This result is in line with Bardel & Falk's (2007) study that shows that multilingual learners (L1/Swedish, L2/English, and L3/Dutch) tend to transfer the syntactic pattern from their L2 rather than L1. De Angelis (2007) associates this tendency to the learners' "association of foreignness" i.e. they opt to *system shift* in which the foreign language is utilized as the source of knowledge rather than the native language.

Psycholinguistic Variables and Fourth Language Acquisition

To investigate the role of self-efficacy in L2 and L3 on German proficiency, a Pearson correlation test was conducted. The results of the correlation tests show that there is a significant correlation between self-efficacy and Learning German. The results of this question are in the vein of many studies that linked self-efficacy beliefs and foreign language acquisition. Mills et al. (2006) collected data from 95 adult learners of French/L2. The findings demonstrated that there is a significant correlation between reading proficiency and self-efficacy. A more recent study was carried out by Hsieh & Schallert (2008) to investigate the role of self-efficacy on English proficiency. Moreover, some studies linked low self-efficacy

beliefs to worse performance. For example, Vandergrift (2005) reported correlations between low performance in listening tasks and low self-efficacy beliefs.

The differences in the German exam scores in relation to the participants' motivation have been found insignificant. Sixty percent of the learners reported that they want to learn German because they want to travel to Germany. Cenoz (2013c, p. 111) confirms that "knowledge of languages will facilitate mobility". Gardner (1985) categorizes this kind of motivation as an instrumental motivation when the learners are enhanced to acquire the language to benefit from it in the future. The result of the One-way ANOVA test shows no significant differences in the exam mark according to motivation. This result is to the contrast of many studies that investigated the impact of motivation on learning a foreign language. For example, Gardner (1985) noticed a significant correlation between motivation and French achievement, see also (Gardner & Macintyre, 1991). This result is not surprising considering the German language status in the Syrian context i.e. there is no direct result of the German language knowledge on the participants' daily life or near future. However, the Dean and teachers at the Higher Language Institute attributed the increased number of the German courses at the institute to two reasons. The first reason can be linked to the fact that most of the participants are waiting for family reunification or planning to travel abroad. Secondly, the German Embassy requires A1/1 level certificate for visas, and this institute is a public institute, which might give more weight to the certificate.

To investigate the impact of the different psycholinguistic variables such as gender, strategy use, age, and educational background on the acquisition of German, different statistical tests were used. The Independent t-test shows that there are no significant statistical differences in the exam scores between males and females. This result is in line with a study that was conducted by Dewaele (2007) to predict L1/Dutch, L2/French, L3/English, and L4/German high school learners' scores according to some psychological and sociocognitive variables. Dewaele collected data from 47 females and 42 males aged between 17 and 21. The results affirm that gender differences do not affect the learners' scores. Another study was carried out by Nshwi and Failsofah (2019) to investigate the language fluency of adult multilingual participants. The results show that females outperformed males in the semantic and phonological tasks. However, there was no real significant influence of this outperformance because most of the participants were MA and Ph.D. students who have relatively the same educational background and exposure, and all of them are residents in Hungary. Many studies that highlighted the connection between language acquisition and gender considered the social

context of the study, as well as the associations between gender with other variables, such as exposure and the degree of use to explain the gender differences while acquiring an additional language. For example, Ellis (1994) stated that Asian males in Britain outperformed females in English as L2. However, he asserted that this outperformance might be connected to other social factors, such as the degree of exposure. Another study, which was conducted by Piasecka (2010) reports that females usually have more verbal ability. For example, young females begin speaking earlier than males. In addition, their articulation and grammar are more accurate. However, Piasecka explains this result because females are more socially engaged in schools.

Moreover, strategy use has been proven to reinforce language acquisition. However, the results of the One-way ANOVA test show no significant differences in the German exam scores according to the used strategies by the learners. This result implies that the learners in both parts of the study did not get enough instruction about the necessary strategies to master the German skills, which may influence the German proficiency. This result is in line with what Jessner (2006, p. 63) affirms. The author explains that strategy use is:

Dependent on individual factors [...]. The use of language learning strategies is dependent on a language learning awareness which guides the learner's learning process, language perception and production.

This result is in line with the study which was conducted by Nshwi (2020). The findings of her study confirm that learners who were trained explicitly on vocabulary learning strategies outperformed learners who were trained implicitly in the vocabulary task.

TLA research very often controls age and education variables because most of the studies are conducted at schools or universities. However, the first part of the current study was conducted at the Higher Languages Institute that offers courses to learners beyond the age of 18 after they take a placement test. For that reason, these two variables needed to be studied and explored. The differences in the exam scores according to the participants' level of education and age have been found significant. The results of the Independent t-test show that there are significant differences in the exam marks according to education. The participants who have a bachelor's degree outperformed the learners who have a high school degree. Several studies focused on the role of literacy and the educational background on third language acquisition, for example, the role of literacy or metalinguistic awareness in language learning (Galambos & Goldin-Meadow, 1990; Jessner, 1999; Kemp, 2001; Swain et al., 1990; Thomas, 1992). This result can be linked to the fact that the educational background is associated with higher levels of linguistic and metalinguistic awareness. Cook (1995) affirms that

multicompetence resulted from a higher level of education is characterized by diverse mental abilities and greater metalinguistic awareness.

When concentrating on the age variable, the results reveal significant differences. In general, the participants aged between (18-30) years old outperform the older participants aged between (31-58) years old. This result is in line with many studies that confirm that younger adult learners outperform older ones. However, a crucial factor that can justify this result is the intensity of exposure to these foreign languages. Most of the first group of participants (18-30) are still learning English and French at the university. Therefore, the degree of use and the intensity of the exposure are higher than for the older participants. This result is in line with the study that was conducted by Singleton & Ryan (2004) to investigate the age factor in foreign language learning in elementary school. The results showed that early starters outperformed later starters because of longer instruction and exposure. Nevertheless, as Singleton (1995, p. 1) stated, learning at every stage is possible if it is "appropriately focused, abundant, and enhanced". Schleppegrell et al. (2008, p.9) explain that:

The typical college-age student would be likely to outperform the older adult in programs that focus almost exclusively on listening and speaking, due to physical abilities. However, if a balanced skills approach is adopted, the older adults could achieve well by making the most of their extensive vocabulary and knowledge of grammatical principles.

Another factor, which might explain the differences in the language tasks according to age, is the different teaching approaches. Stephens & Joiner (1984, p. 13) states that elderly foreign language learners might encounter difficulties "if their first foreign language experience involved an approach radically different from the one employed by their present instructor". Adult older-learners are used to the grammar-translation approach. Nevertheless, the current approach used by teachers at the HLI is the communicative approach.

CHAPTER 6

CONCLUSION

6.1 Introduction

This chapter is intended to provide the concluding remarks of the study, limitations, and implications for future work.

6.2 Summary of the Results

This study aims at exploring the impact of metalinguistic awareness and previously learned languages on learning German as a fourth language by adult learners at the HIL and AIU. It attempts to find out if German language acquisition differs with regard to the learners' previously learned foreign languages, metalinguistic awareness, gender, degree of exposure and use, motivation, strategies use, age, and education. The findings of this research are based on the data obtained from True-beginner German Language learners, as well as 10 German language teachers at the HIL and AIU while teaching one course namely; A1/1. The results of this research are linked to the findings of similar studies in the field of instructed multilingualism and third language acquisition.

This chapter presents the major findings of the research in relation to the impact of linguistic and psycholinguistic variables on multilingual learning. The main findings are presented as the following:

1. The significant correlation between English and French proficiency and successful German language acquisition is in line with previous research conducted in the field of third language acquisition and thus promotes the positive influence of prior language knowledge on the acquisition of an additional Indo-European language (Jessner, 1999, 2006).
2. Metalinguistic awareness predicts German language scores in both contexts of the study. This result highlight the important role of metalinguistic awareness while acquiring an additional language. It is evidenced that metalinguistic awareness can reinforce learning German as the fourth language by Syrian adult learners who have already learned English and French as foreign languages.
3. Gender differences between males and females while acquiring German are not found statistically significant in this context.

4. Some aspects of the degrees of exposure and use, such as the onset of exposure of using English with friends and using English while surfing the net have been correlated with German language acquisition.
5. Motivation, used strategies, and gender were not found significant variables while acquiring the German language in this context as they might be influenced by other factors such as teaching methods, the role of German in the Syrian context.
6. Moreover, there were significant differences in the tests' scores based on age and education at the Higher Language Institute.

6.3 Limitations

A number of limitations of this research must be taken into consideration.

1. The researcher has investigated the role of English and French on learning German as a fourth language in the Syrian context, which aimed at comparing it to other studies that carried out in different contexts. The author chose not to measure the Arabic language because of the typological distance and time constraints.
2. The researcher collected data from the true-beginner level, namely A1/1. Investigating other levels may add more insights into the process of multilingual learning development.
3. Only the short-term effects of motivation and the students' self-efficacy have been examined due to time constraints. Future research can investigate the long-term effects of these variables.

To conclude, a number of limitations, as the aforementioned points demonstrate, are due to time limitations. Some recommendations for further research in the field of multiple language teaching are suggested in the following section.

6.4 Teaching a Third Language from a Multicompetence Perspective

To talk about teaching a third language, similarities, and differences between second and third language teaching methods must be considered. Second and third language teaching share many aspects. Second language acquisition usually involves teaching English or French as a subject in Syria. However, Bilingual education means immersion in both languages like the case of Armenian schools in Aleppo in which both Arabic and Armenian are taught simultaneously. Cenoz et al. (2001b, p. 2) illustrate the differences between second language acquisition and bilingual education as the following: "second language acquisition in the school context usually refers to the teaching of an L2 as a subject while bilingual education usually refers to the use of two languages as languages of instruction".

However, Third language acquisition usually indicates learning a third language. Jessner (2008d, p. 34) points out the differences between third language acquisition and trilingualism as "TLA is used to refer to learning an L3 as a school subject; trilingual education involves the use of three languages as languages of instruction".

Third language teaching usually takes place after the second language is introduced like the case of teaching French at the seventh grade in the Syria context. However, trilingual education means the introduction of three languages while instructing. Third language acquisition in the Syrian context is an additive trilingualism in which the third language is taught as a subject that must be distinguished apart from trilingual education in which the three languages are used in instruction. Teaching foreign languages in Syria adopts the traditional approaches at the pre-graduate and graduate studies. At the pre-graduate levels, most students in public schools are taught through the grammar-translation method, in which the instructions and exercises are taught and explained in Arabic. Nevertheless, private schools depend on total immersion in the target language. The ideal approach in Syria concentrates on separating languages and using solely the target language. For example, the Higher Language Institute follows the policy of one language at a time while adopting the communicative approach. For that reason, many teachers warn students not to use their mother tongue language in the classroom. Jessner (2008d, p. 39) explains the rationale behind this tendency as:

The traditional classroom the language subjects are often kept apart and contact between the languages in the curriculum is forbidden since it is considered a hindrance to successful language learning. Consequently, teachers keep knowledge about other languages, including the L1, out of the classroom in order not to confuse student.

However, over the last decade, several multicompetence approaches have been introduced to teach a third language. Cook (1991) first introduced the notion of multicompetence which refers to L1 knowledge in addition to L2 interlanguage knowledge. These language-centered approaches exploit the learners' knowledge of the previously learned languages i.e. L1 and L2. Moreover, many studies in the field of instructed multilingualism showed a positive impact of the cross-language approach while teaching a third language. A study was carried out by Hofer (2014) to explore the impact of multilingual education at the school level on metalinguistic awareness and second and third language ability. The data analysis manifested that learners in multilingual education outperformed learners in the traditional instructional streams in the metalinguistic awareness test and the German and English abilities tests. Moreover, Ytsma (2001, p. 13) developed a typology of trilingual primary education which is classified according to the following dimensions (see Figure 6.1).

1. Linguistic context

- trilingual area
- bilingual area
- monolingual area

2. Linguistic distance

- three related languages
- one non-related language
- three non-related languages

3. Programme design

- simultaneous
- consecutive

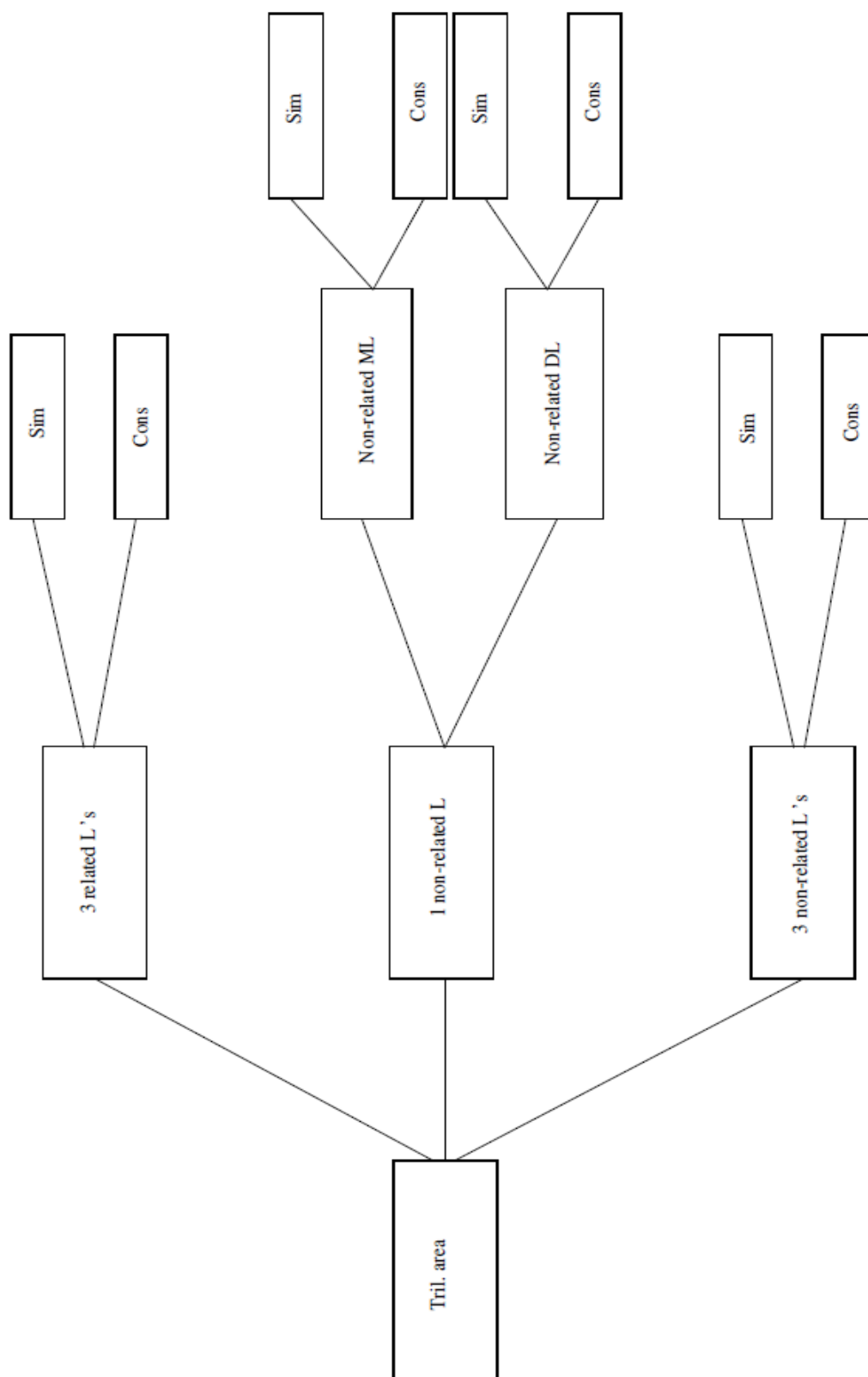


Figure 6. 1 Trilingual education in the trilingual area

A more recent approach has been introduced by (Jessner & Allgäuer-Hackl, 2020) that is founded on holistic language teaching and learning. This approach is based on five building blocks. (see Figure 2.3)

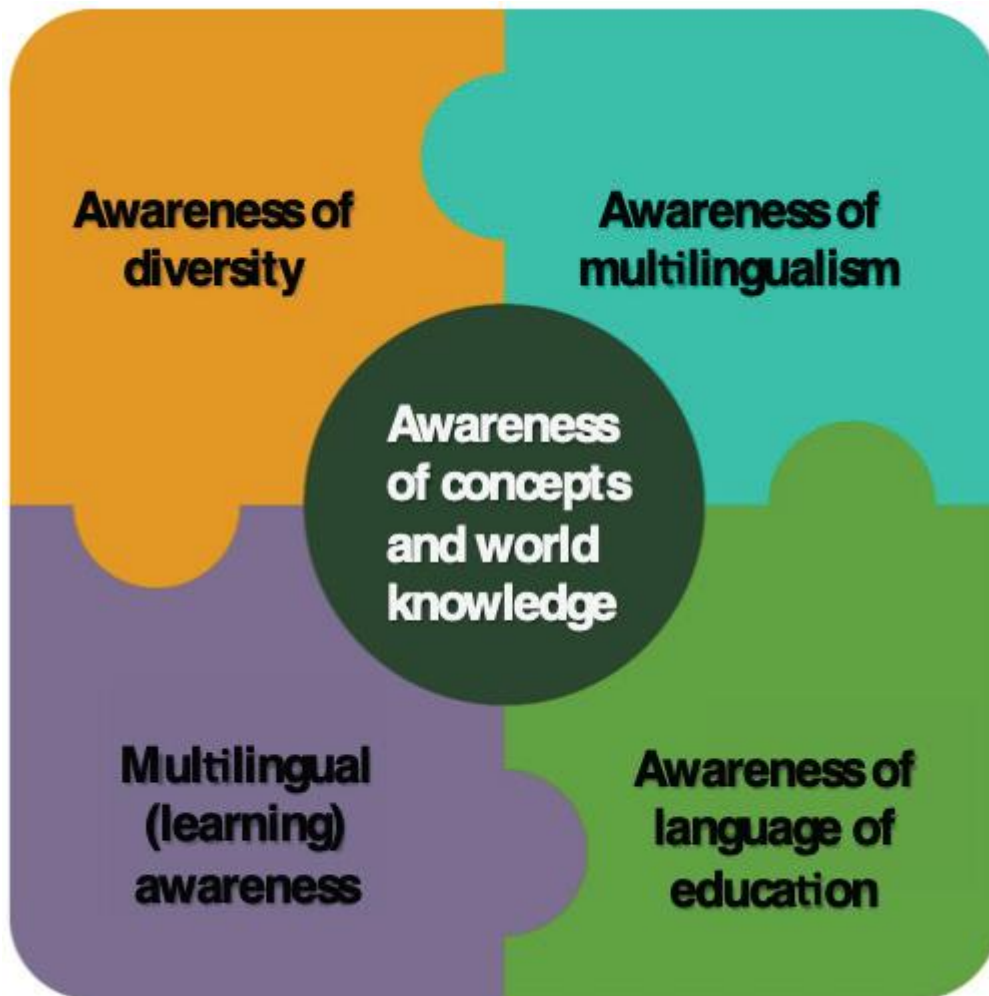


Figure 6. 2 Five Building Blocks of Holistic Multilingual Education/Learning by (Jessner & Allgäuer-Hackl, 2020)

As can be noticed from Figure 6.2, the Five Building Blocks of this multilingual educational approach concentrates on the process of multiple language teaching and learning. The first block addresses the awareness of diversity, which highlights the importance of dealing with language diversity in classrooms. Next, is the awareness of multilingualism block in which the various background linguistic resources are exploited to enhance the process of learning multiple languages. The third block is multilingual awareness (MLA). MLA prompts how the languages function and highlight the similarities and differences. The fourth block is the Awareness of language education and awareness of concepts and world knowledge. The Five

Building Blocks approach is developed to provide both teachers and learners with the needed tools to face the new demanding needs of modern multilingual communities.

6.5 Implications for the Syrian Context

According to the results of this study, metalinguistic awareness, which is the key element in the M-factor in the DMM model, has been found essential to develop multiple language learning. To develop the M-factor, the input amount and language teaching explicitness should be highlighted. Raising metalinguistic awareness and including it in the foreign language curriculum, in addition to establishing relevant activities in the teaching materials is the key element to strengthening the M-factor. The holistic approach of multilingual education is the future of learning languages. Cenoz (2013a, p. 126) affirms that:

Multilingual education does not only mean making room in the curriculum for more languages or improving teachers' proficiency in English. It implies having a multilingual perspective at the conceptual level that is reflected when establishing goals, planning lessons, and assessing students.

The integration of the previously learned languages' knowledge while learning a new language may foster multilingualism and counterbalance the relatively less frequent use of these foreign languages outside the classroom. (Jessner, 1999a, p. 207) states:

Multilingual education should therefore concentrate on increasing metalinguistic awareness in language students by teaching commonalities among languages they already know. An increased focus on similarities could offer positive effects for multilingual education. This perspective would also imply the reactivation of the knowledge of other languages in the learner and thus prior language knowledge could guide learners in the development of a further language system.

Hufeisen & Marx (2007, p. 306) reiterate that "knowledge in various languages often need instruction and help". Multiple language learning is the future of learning languages. Cenoz (2013) explains the concept of multiple language learning as it "refers to the learning of more than two languages tutored instruction (third, fourth or nth language learning, for which the term third language acquisition (TLA) is used, but the term also refers to the learning of a second, third or fourth (foreign) language (L3, L4, Ln) in a natural context".

Another important factor that should be taken into account while implementing the multicompetence approach is the social context. Cenoz (2013a, p. 129) states that "multilingual programs have to take into account the sociolinguistic context in which the school is located because this can have an important influence on the learning process".

Most of the teachers and participants in this study indicated that they would appreciate if they were informed about similarities and differences among the foreign languages in which

54 % said that they like to know the similarities and difference. However, 46% reported that they are afraid to be distracted and the information would be mixed in their minds. Hufeisen (2000, p. 215) states:

The first publications about L3 arose as a warning to foreign language teachers that they should teach different foreign languages as strictly separate subjects. A larger number of articles on this subject appeared in the 1970s, at a time when the strict separation of languages was considered to be important from the point of view of the psychology of learning [...]. This interaction between the languages was seen as the sole source of interference, which led to the recommendation to avoid all contacts between the various languages under study.

Jessner (2008d, p. 39) explains this tendency by saying that in:

The traditional classroom the language subjects are often kept apart and contact between the languages in the curriculum is forbidden since it is considered a hindrance to successful language learning. Consequently, teachers keep knowledge about other languages, including the L1, out of the classroom in order not to confuse students.

In addition, the English language role as a lingua franca has to be also taken into consideration. In the Syrian context, English plays a key role not only as a communication tool but also as a requirement in employment and promotions. For example, when the government announces vacancies, they require a certain English level to be eligible for the position.

During the summer semester of 2018, the author of this thesis assisted two teachers at the AIU and one teacher at the HLI to implement the multicompetence approach while teaching German as a third foreign language. However, a number of restrictions hindered the implementation of this approach.

1. The holistic approach to multiple language teaching was a demanding task that required preparation and training, which was not available because it consumes a lot of time.
2. The teachers at the HLI and AIU use the approach of one language at a time. These teachers found it difficult to implement a holistic approach because they did not know how to approach this method without a curriculum to guide them.
3. To apply this approach a management team should support and guide the necessary parts of this kind of project.
4. Teachers were not trained about the principles of plurilingual teaching.
5. The institutions where the two parts of the study were conducted follow the guidelines of the Higher Education Ministry in Syria, which apply the approach of one language at a time.
6. Language policy should be redefined to suit the changes in Syrian society.

To sum up, the results of this study imply that foreign languages' knowledge reinforces the acquisition of an additional language (see Hofer & Jessner, 2019). From the perspective of the DMM, multilingual learners are more efficient while learning a new language due to their improved skills. Cenoz & Todeva (2009, p. 278) point out that "multilinguals get many "free rides" when learning additional languages as their prior linguistic knowledge helps on all levels of language – grammar, pragmatics, lexicon, pronunciation, and orthography". Besides, the results of the current study found that metalinguistic awareness could reinforce learning an additional language (see Jessner, 1999; Spellerberg, 2016). The dynamic interactions in the multilingual learner's brain not only improve their linguistic repertoire but also enhance their metalinguistic awareness.

This study highlights the role of the previously learned languages in reinforcing metalinguistic awareness and learning an additional language. Future third foreign language teaching should integrate the learners' previous linguistic repertoire in their classroom and pedagogical approaches. Explicit awareness of the shared linguistic properties can accelerate additional language acquisition by exploiting an "already developed language system" (Jessner, 2006, p. 124), for that reason, curriculum content, and the language of instruction also need further consideration to promote the multilingual development.

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Appendices

Appendix 1: Language History Questionnaire

Language Background Questionnaire

1. Name: 2: Gender:

3. Age: 4. Education:

5. What are your parents' occupations?
.....

6. Indicate your native language(s):
.....

7. List any other languages you have studied or learned, the age at which you started using each language in terms of listening, speaking, reading, and writing, and the total number of years you have spent using each language.

Language	Listening	Speaking	Reading	Writing	Years of use

8. Estimate how many hours per day you spend engaged in the following activities in each of the languages you have studied or learned.

Language	Watching TV	Listening to radio	Reading for fun	Reading for school	Reading for work	Writing emails

9. Rate your current ability skill (very poor, poor, limited, functional, good, very good, native-like) in terms of listening, speaking, reading, and writing in each of the languages you have studied or learned.

Language	Listening	Speaking	Reading	Writing

10. What motivates you to learn German at this age? List at least 3 reasons.

.....

.....

.....

11. What do you do to enhance your German language learning?

.....

.....

12. Do you think if you are good at English, you will learn German faster? If yes, why?

.....

13. Do you encourage your teacher to draw your attention to the similarities and differences between German and other languages that you know? If yes, Why?

.....

.....

Note:

Dear Participant,

This questionnaire is aimed to investigate your language history and it is going to be used only for research purposes.

Appendix 2: Translated Language History Questionnaire

العمر:
 الاسم: ...
 التحصيل العلمي:
 الجنس: ...

- أشر إلى لغتك الأم (أو اللغات في حال وجود أكثر من لغة أم).

أشر إلى أي لغات أخرى درستها أو تعلمتها والعمر الذي بدأت فيه باستخدام كل لغة من حيث الاستماع والتحدث والقراءة والكتابة وإجمالي عدد السنوات التي قضيتها في استخدام كل لغة.

اللغة	الاستماع	التحدث	القراءة	الكتابة	عدد سنوات الاستخدام

- أشر إذا كنت قد عشت أو سافرت إلى بلدان غير بلد إقامتك أو بلدك الأصلي لمدة ثلاثة أشهر أو أكثر ، فأشر إلى اسم البلد ، ومدة إقامتك ، واللغة التي استخدمتها ، ومدى استخدامك لتلك اللغة في تلك البلدان (أبدا ، نادرا ، في بعض الأحيان ، بانتظام ، في كثير من الأحيان ، عادة ، دائما).

البلد	مدة الإقامة	اللغة	مدى استخدام تلك اللغة

-أشر إلى العمر الذي بدأت فيه استخدام كل لغة من اللغات التي درستها أو تعلمتها في البيئات التالية.

اللغة	في المنزل	مع الأصدقاء	في المدرسة	في العمل	لغة البرامج في الهاتف أو الكمبيوتر	ألعاب على الشبكة الإلكترونية

- قم بتقدير عدد الساعات التي تفضيها في الأنشطة التالية في كل لغة من اللغات التي درستها أو تعلمتها في اليوم الواحد.

اللغة	مشاهدة التلفاز	الاستماع إلى الراديو	القراءة للترفيه	القراءة للدراسة	القراءة بسبب العمل	كتابة ايميلات

- قيم مهارتك في تعلم اللغات. بمعنى آخر، ما مدى براعتك عندما تتعلم لغة جديدة (فقيرة جدا، فقيرة ، محدودة ، متوسطة

، جيدة ، جيدة جدا ، ممتازة) مقارنة بأصدقائك أو الأشخاص الآخرين الذين تعرفهم؟ ...

- قيم قدرتك الحالية (فقيرة جدا، فقيرة ، محدودة ، أساسية، جيدة ، جيدة جدا ، مثل اللغة الأم) من حيث الاستماع

والتحدث والقراءة والكتابة بكل من اللغات التي درستها أو تعلمتها.

اللغة	الاستماع	التحدث	القراءة	الكتابة

- ما الذي يحفزك على تعلم اللغة الألمانية في هذا العمر؟ أشر إلى ثلاثة أسباب على الأقل.

.....

.....

.....

- ما الاستراتيجيات التي تستخدمها لتعلم اللغة الألمانية بشكل أفضل؟

.....

.....

.....

- هل تعتقد إن كنت جيدا باللغة الإنكليزية، ستتعلم اللغة الألمانية بشكل أفضل؟ إن كان جوابك نعم، لماذا؟

.....

.....

.....

- هل تفضل أن يقوم مدرسك بإخبارك بأوجه الشبه والاختلاف بين اللغة الألمانية والإنكليزية؟ إن كان جوابك نعم، لماذا؟

.....

.....

.....

ملحوظة:

يهدف هذا الاستبيان إلى التحقق من تاريخ الطلاب اللغوي، وسيتم استخدامه فقط لأغراض البحث العلمي.

Appendix 3: English C-Test

Name:

Mark: /100

ENGLISH C-TEST

In the test, there are four (4) paragraphs. Each one has twenty-five (25) blanks. Fill in each blank with the part of the word that is missing. Do not add any extra words. It may help to read the whole paragraph before trying to fill in the blanks. Write your answers clearly in the blanks. You have thirty (30) minutes to complete the entire test. You may return to previous paragraphs of the test if you finish early.

في هذا الاختبار أربع (4) فقرات. يوجد في كل فقرة فراغات. املأ كل فراغ بالجزء المناسب المفقود. لا تضيف أي كلمات للفقرة. قد يساعدك قراءة الفقرة بأكملها قبل محاولة ملء الفراغات. اكتب إجاباتك بوضوح في الفراغات. أمامك ثلاثين (30) دقيقة لإكمال الاختبار بالكامل. يمكنك العودة إلى الفقرات السابقة من الاختبار في حالة الانتهاء مبكرًا

Example: In the test, you will see blanks in each paragraph such as the following:

Electrical appliances

Laurence Feldman is a Marketing Professor at the University of Illinois in Chicago.

He h spent ye studying h people u their
elect appliances. H believes th the mod home i filling
u with mach which c do 20 diff things, b most
peo only u them f two o three func because th are
sim too compl to ope .

Electrical appliances

Laurence Feldman is a Marketing Professor at the University of Illinois in Chicago.

He h as spent ye ars studying h ow people u se their
elect ical appliances. H e believes th at the mod ern home i s filling u
p with mach ines which c an do 20 diff erent things, b ut most

people only use them for two or three functions because they are simply too complicated to operate.

Please, now begin work on the test.

1. Mars

According to scientists, Mars is the best bet for a home for aliens. This is because Mars has got water on it, and there has to be water on a planet to support life. However there are thousands to billions of solar systems in space - planets go around a central star like the sun. However, we have not found any other life in our solar system. It is possible that life may exist in other solar systems but only if the conditions are right. Experts also think that aliens will not live outside. Many environments are too harsh for life as we know it, so space missions will be looking underground.

2. Advertising

Advertising is a huge global business. Each year billions of pounds are spent in attempts to influence our decisions and to persuade us to spend more. Think of the number of messages that are aimed at each of us in an average day. On the high street, on public transport, in newspapers and magazines and on television we are bombarded with images and slogans designed to make us part with our cash. Because of the enormous amount of advertising, there is no doubt that the advertising industry is constantly trying to invent new ways of getting our attention.

3. Stress

Stress in itself is not necessarily harmful. We need goals and challenges in life, or we get bored. So people can tolerate a certain amount of major

life changes with feeling present, while others find it difficult to cope when life gets stressful. However, we do know that too much stress is damaging. Stress is a well-known trigger for depression and can also affect your physical health- so it is important to identify the stress factors in your life and do everything you can to minimize them.

4. Healthy weight

A healthy weight has a very positive effect on our wellbeing and health. Being overweight - or underweight - can cause a wide range of medical problems. Fortunately, most of these problems can be sorted out by losing or gaining weight. There is not an ideal weight that suits everyone. Each person has a different body and their healthy weight will be determined by various factors, such as genes, food and physical activity amongst others. Losing weight can be as challenging and difficult as keeping an ideal healthy weight. However, this can be achieved and its positive effects will be immediately noticed.

Appendix 4: French C-Test

Nom: _____

Point: _____/100

C- Test de Français

Dans le test, il y a six (5) paragraphes. Chacun a vingt (20) blancs. Remplissez chaque blanc avec la partie du mot qui manque. N'ajoutez pas de mots supplémentaires. Il peut être utile de lire tout le paragraphe avant d'essayer de remplir les blancs. Ecrivez clairement vos réponses dans les espaces vides. Vous avez trente (30) minutes pour compléter le test complet. Vous pouvez revenir aux paragraphes précédents du test si vous finissez tôt.

في هذا الاختبار خمس (5) فقرات. يوجد في كل فقرة فراغات. املأ كل فراغ بالجزء المناسب المفقود. لا تضيف أي كلمات للفقرة. قد يساعدك قراءة الفقرة بأكملها قبل محاولة ملء الفراغات. اكتب إجاباتك بوضوح في الفراغات. أمامك ثلاثين (30) دقيقة لإكمال الاختبار بالكامل. يمكنك العودة إلى الفقرات السابقة من الاختبار في حالة الانتهاء مبكرًا

Texte 1 : «Faut-il aller étudier à l"ranger?»

Aller étudier à l"ranger peut offrir des bénéfices culturels autant que linguistiques, et même permettre de compléter sa formation si l" choisit bien ses cours. Pourtant, u [] tel séj [] n"t p [] sans inconv [] et prés [] de rée [] difficultés e [] ce q [] concerne l"apt [] à u [] culture m [] connue, à u [] langue qu" n [] maîtrise p [] bien, et à un sys [] éducatif do [] le fonction [] peut s"é [] déroutant. Po [] exploiter a [] mieux les avantages potentiels du séjour d"ude à l"ranger, il convient de s"préparer très soigneusement pour minimiser les effets du choc culturel, inévitable, et ne pas perdre de temps.

Texte 2 : Le Tour de France a célébré ses 100 ans (tiré de l"press)

C"t chaque fois la même chose. En jui [] le pas [] du To [] soulève u [] vent d"o [] à tra [] l"xagone. E [] d"tant pl [] cette an [] ! Le troi [] événement spo [] de l [] planète, ap [] les

Je [] olympiques e [] la Co [] du mo [] de foot [] a fê [] ses
ce [] ans. Hors les deux guerres, le Tour ne s't jamais arrêté.

Texte 3: Le Monde du 7-12-03

L'adémie européenne du cinéma a rendu hommage au cinéaste français Claude Chabrol, 73
ans, pour l'ensemble de sa carrière. I s't ouv [] par u [] déchirant
c [] d'our – «Claude, j [] vous ai []»- lancé p [] son act [] fétiche
Isabelle Huppert. Le réali [] s't ens [] félicité d [] la qual [] du
cin [] européen. « Cette not [] d'rope m [] fascine. J [] ne vo [] pas
pour [] il ne ser [] pas poss [] de fa [] un grand cinéma européen. Chacun
parlerait de son coin et serait financé par tous les autres.»

Texte 4 : Source : Commission européenne

Un nombre croissant d'treprises choisissent d'investir dans le bien-être général et la forme de
leur personnel. Ces initiatives peuvent revêtir plusieurs aspects. L [] entreprises
peu [] se lim [] à encou [] l'option d' mode d [] vie
pl [] sain, à sav [] des chang [] alimentaires, l' [] du ta [] ou
u [] niveau d [] consommation d'c [] moins no [] pour l [] santé.
Cert [] entreprises s [] tournent ve [] des mes [] plus pratiques en
négociant des taux de faveur pour les cotisations aux salles de culture physique locales où le
personnel peut s'traîner.

Texte 5 : Une étude relance le débat sur l'origine des langues indo-européennes

Deux thèses sont en concurrence. L'ne fon [] sur l [] diffusion rap [] d'n
idi [] parlé, 4 000 a [] avant J.-C., p [] des guer [] conquérants d'kraine.
L'u [] sur ce [] d'ne lan [] lentement véhi [] 8 000 à 9 500
a [] avant J.-C. p [] des agricu [] anatoliens. Où e [] quand

l' première lan indo-européenne, do proviennent l' grande
majo des idiomes rencontrés du Bengale à l'Islande, a-t-elle été parlée ?

Appendix 5: German C-Test

Name:

Mark: /100

Deutsch C-TEST

Im Test gibt es drei (3) Absätze. Jeder Absatz hat Leerzeichen. Füllen Sie jedes Leerzeichen mit dem Teil des fehlenden Wortes aus. Fügen Sie keine zusätzlichen Wörter hinzu. Es kann hilfreich sein, den ganzen Absatz zu lesen, bevor Sie versuchen, die Lücken zu füllen.

Schreibe deine Antworten deutlich in die Lücken. Sie haben dreißig (30) Minuten, um den gesamten Test abzuschließen. Sie können zu den vorherigen Abschnitten des Tests zurückkehren, wenn Sie früh fertig sind.

في هذا الاختبار ثلاث (3) فقرات. يوجد في كل فقرة فراغات. املأ كل فراغ بالجزء المناسب المفقود. لا تضيف أي كلمات للفقرة. قد يساعدك قراءة الفقرة بأكملها قبل محاولة ملء الفراغات. اكتب إجاباتك بوضوح في الفراغات. أمامك ثلاثين (30) دقيقة لإكمال الاختبار بالكامل. يمكنك العودة إلى الفقرات السابقة من الاختبار في حالة الانتهاء مبكرًا.

1. Familie Scherwitzl

Das ist meine Familie, Familie Scherwitzl. Me Vater heißt Karl u ist siebenunddreißig Ja alt. Er i Pilot. Meine Mut heißt Elena. Sie i sechsunddreißig Jahre a . Sie ist Mathematiklehr und kommt a Russland. Meine Eltern ha zwei Kinder: me Schwester und mi . Ich heiße Peter. Au meine Tante Irene, d Schwester von Ma , wohnt im Ha . Sie ist fünfundvie . Meine Tante i nicht verheiratet. W wohnen in Klagenfurt. D liegt in Österreich. Und wie ist deine Familie?

2. Das Kinderrestaurant

Im Kinderrestaurant arbeiten Kinder von 8 bis 12 Jahren in der Küche und kochen das Essen.

Frau Wolf und Fr Schneider haben sich d Kinderrestaurant ausgedacht. S kochen sehr ge und helfen d Kindern. Die Kin schreiben die Speiseka , sie kaufen e und sie bedi die Besucher.

Tägl können 6 Kinder hi arbeiten. 3 Kinder arbe in der
Kü und kochen. D anderen Kinder dec die Tische
u bedienen die Besu . Am Abend räu alle zusammen
a und machen sau . Alle finden: ""s Kinderrestaurant ist toll!"".

Freundinnen

Ricarda ist 21 J alt und w in Lübeck. Lübeck i eine s schöne
St im Norden von Deu . Ricarda stud Medizin an der Un von
Lübeck. Sie h viele Freunde do .

Ricardas beste F heißt Maike. Maike i 22 und w nicht in Lübeck. Sie
w in Hamburg, aber be ihre Freundin oft in Lübeck.

Sie tr sich ge im Park. Meistens ge sie da zusammen Eis
es . Danach ge sie manchmal no einkaufen. Ricarda ka am
lie neue Schuhe. Maike ka sich lieber ne Schmuck. Am
Ab gehen sie ge ins Kino. Maike übernachtet dann oft bei Ricarda.

4. Anruf beim Goethe-Institut (nach: ""örfelder"")

Die Zentrale Mittelstufenprüfung richtet sich an erwachsene Lerner im Fach Deutsch als
Fremd-
sprache. Frau Phillips ruft beim Goethe-Institut (G-I) in Berlin an, um sich nach dem
nächsten
Prüfungstermin zu erkundigen.

G-I: Goethe-Inst , guten T .

Phillips: Ja gu[] Tag. I[] möchte m[] jemandem spre[],
der m[] Informationen üb[] die Prü[] für d[]
Mittelstufe ge[] kann.

G-I: Mom[] bitte, i[] verbinde S[] mit He[] Hasen
kamp v[] der Sprach[] .

Hasenkamp: Gu[] Tag, w[] kann i[] Ihnen hel[] ?

Phillips: Gu[] Tag. Me[] Name i[] Phillips, i[] möchte
mi[] über d[] Prüfung infor[] , die f[] die
Mitte[] . Ich möc[] mich f[] die Prü[] anmelden.

Hasenkamp: Ja, wa[] möchten S[] denn z[] Prüfung
kom[] ?

Phillips: Wa[] ist de[] der näc[] Prüfungstermin?

Hasenkamp: Die n'ac[] Prüfung fin[] im Deze[] dieses
Jah[] statt, u[] wenn d[] bei Ih[] nicht ge[] , dann
gi[] es im näch[] Jahr wei[] Termine, d[] erste
i[] dann wie[] im Ap[] .

Phillips: U[] wie si[] die Aufg[] ?

Hasenkamp: Es gi[] verschiedene Aufg[] zum Lesen, zumHören, zum
Schreben und zum Sprechen. Über alle " diese Aufgaben informiert Sie eine Broschüre, die
Sie im Sekretariat erhalten können.

Appendix 6: English Metalinguistic Test

العلامة:

الاسم:

القسم الأول: المصطلحات

في الجمل التالية، ضع خط تحت المصطلح المقابل للكلمة. على سبيل المثال:

الفعل: أكمل التلميذ الدورة التدريبية بأكملها

1. **الفاعل:** The tiger over there ate two small meals.
2. **أداة التعريف:** Have they ever seen the bridge?
3. **مفعول به:** Kate bought the present for her mother.
4. **الصفة:** Erin and Ali went to a beautiful hill yesterday.
5. **الحال:** Jackie got dressed quickly because she was going to a meeting.
6. **مفعول به ثان:** Lisa gave her colleague in the library a pen.
7. **فعل ماض:** Kathrin likes to eat chicken, in fact she ate it yesterday.
8. **ضمير ملكية:** Larry took his car to a repair shop.
9. **فعل:** Hana and Matt quickly joined the next race.
10. **اسم:** Museums are always very cold.
11. **حرف جر:** Mark and Anita are heading to the theater.
12. **أداة تنكير:** My mom bought me a new watch for my birthday.
13. **مصدر:** Lina wants to fly to London for the summer break.
14. **فعل مضارع:** I jog twice a week, but I didn't jog yesterday.
15. **التصريف الثالث:** Ahmad has taken the driving test four times.

القسم 2: تحديد الخطأ

يوجد عشر جمل. حدد إذا ما كانت هذه الجمل صحيحة أو خاطئة برسم دائرة حول صح أو خطأ
إذا كانت الجملة صحيحة، انتقل إلى الجملة التالية. وإذا كانت خاطئة ارسم دائرة حول كلمة خطأ، وصحح
الجملة ومن ثم اشرح القاعدة النحوية التي تعتقد أنها غير صحيحة باستخدام أكبر قدر ممكن من المصطلحات
النحوية. على سبيل المثال

: *It have been sick for several days.* خطأ /صح
الجملة الصحيحة:

It has been sick for several days.

القاعدة: يجب أن يتطابق تصريف الفعل المساعد مع الفاعل

1. Mary and Basil goed to the city center yesterday. خطأ /صح

إن كانت الجملة خاطئة، صححها _____

القاعدة: _____

2. My friend and I love running in the park. خطأ /صح

إن كانت الجملة خاطئة، صححها _____

القاعدة: _____

3. Walked in the park yesterday and they had fun. خطأ /صح

إن كانت الجملة خاطئة، صححها _____

القاعدة: _____

4. The men put their coats on. خطأ /صح

إن كانت الجملة خاطئة، صححها _____

القاعدة: _____

5. Rana likes his new house. خطأ /صح

إن كانت الجملة خاطئة، صححها _____

القاعدة: _____

6. I left my office very quick. خطأ /صح

إن كانت الجملة خاطئة، صححها _____

القاعدة: _____

7. Karrie and her sister been to Paris four times. خطأ /صح

إن كانت الجملة خاطئة، صححها _____

القاعدة: _____

8. He always exercises after work. خطأ /صح

إن كانت الجملة خاطئة، صححها: _____

القاعدة: _____

9. She have been sick for several days. خطأ /صح

إن كانت الجملة خاطئة، صححها: _____

القاعدة: _____

10. There going to the fair tonight. خطأ /صح

إن كانت الجملة خاطئة، صححها: _____

القاعدة: _____

Appendix 7: German Metalinguistic Test

العلامة:

الاسم:

القسم الأول: المصطلحات

في الجمل التالية، ضع خط تحت المصطلح المقابل للكلمة. على سبيل المثال:

الفعل: أكمل التلميذ الدورة التدريبية بأكملها .

1. **الفاعل:** Ich habe einen Hund.
2. **أداة التعريف:** Die Lehrerin liest.
3. **الفعل:** Ich schicke meiner Mutter einen Brief.
4. **الصفة:** Der Mann ist gut.
5. **الحال:** Ich wache oft um 7 auf.
6. **حرف جر:** Ich bin in der Badewanne.
7. **مفعول به:** Das Mädchen singt das Lied.
8. **مفعول به ثان:** Ich habe meiner Freundin eine E-Mail geschickt.
9. **فعل مساعد:** Sie kann es nicht finden.
10. **ضمير ملكية:** Sie brachte ihre Tochter zur Party.
11. **اسم:** Das Buch ist wirklich interessant.
12. **أداة تنكير:** Ein Mädchen hat auf dich gewartet.
13. **مصدر:** Ich möchte ihn treffen.
14. **فعل ماض:** Ich war letztes Jahr in Paris.
15. **أداة نفي:** Ich habe keine Tasche.

القسم 2: تحديد الخطأ

يوجد عشر جمل. حدد إذا ما كانت هذه الجمل صحيحة أو خاطئة برسم دائرة حول صح أو خطأ
إذا كانت الجملة صحيحة، انتقل إلى الجملة التالية. وإذا كانت خاطئة ارسم دائرة حول كلمة خطأ، وصح
الجملة ومن ثم اشرح القاعدة النحوية التي تعتقد أنها غير صحيحة باستخدام أكبر قدر ممكن من المصطلحات
النحوية. على سبيل المثال

: Ich sind in Damaskus. خطأ / صح

الجملة الصحيحة:

Ich bin in Damaskus.

القاعدة: يجب أن يتطابق تصريف الفعل المساعد مع الفاعل

1. Mein Name bist Ali Mohammad. خطأ /صح

: إن كانت الجملة خاطئة، صححها. _____

القاعدة: _____

2. Was mochen sie trinke? خطأ /صح

: إن كانت الجملة خاطئة، صححها. _____

القاعدة: _____

3. Ich trinke kaffe. خطأ /صح

: إن كانت الجملة خاطئة، صححها. _____

القاعدة: _____

4. Ich kaufe einen Buch. خطأ /صح

: إن كانت الجملة خاطئة، صححها. _____

القاعدة: _____

5. Ich kaufe das Tisch. خطأ /صح

: إن كانت الجملة خاطئة، صححها. _____

القاعدة: _____

6. Meine Schwester hat nicht Auto. خطأ /صح

: إن كانت الجملة خاطئة، صححها. _____

القاعدة: _____

7. Wann aufstehst du am Freitag? خطأ /صح

: إن كانت الجملة خاطئة، صححها. _____

القاعدة: _____

8. Sie hast eine Katze. خطأ /صح

: إن كانت الجملة خاطئة، صححها. _____

القاعدة: _____

8. Zwanzig und fünf Studenten sind im Zimmer. خطأ /صح

إن كانت الجملة خاطئة، صححها. _____

القاعدة: _____

9. Woher kommen Sie? خطأ /صح

إن كانت الجملة خاطئة، صححها. _____

القاعدة: _____

Appendix 8: Teachers' Interview

Teachers' Interview Questions

1. Name: 2. Gender:3. Age:

4. Education (BA, MA or PhD):

5. Please, indicate your years of teaching experience.

.....

6. Indicate your native language(s):

.....

7. List any other languages you have studied or learned, rate your current ability skill (very poor, poor, limited, functional, good, very good, native-like) knowledge in terms of listening, speaking, reading, and writing, and finally list the total number of years you have spent using each language.

Language	Listening	Speaking	Reading	Writing	Years of use

8. In your opinion, what motivates students to learn German at this age? List at least 3 reasons.

.....

.....

9. What are the strategies you usually use to enhance your students' German language learning?

.....
.....

10. Do you think if your students are good in English, they will learn German faster? If yes, why?

.....
.....

11. Do you usually take into consideration students' previously learned languages while teaching German? If yes, how?

.....
.....

Appendix 9: Translation of the Teachers' Interview

استبيان لمدرسي اللغة الألمانية

العمر:

الاسم: ...

الجنس:

التحصيل العلمي (بكالوريوس، ماجستير، دكتوراه):

عدد سنوات خبرة التدريس: ...

- أشير إلى لغتك الأم (أو اللغات في حال وجود أكثر من لغة أم).

- أشير إلى أي لغات أخرى درستها أو تعلمتها والعمر الذي بدأت فيه باستخدام كل لغة من حيث الاستماع والتحدث والقراءة والكتابة وإجمالي عدد السنوات التي قضيتها في استخدام كل لغة.

اللغة	الاستماع	التحدث	القراءة	الكتابة	عدد سنوات الاستخدام

- أشير إذا كنت قد عشت أو سافرت إلى بلدان غير بلد إقامتك أو بلدك الأصلي لمدة ثلاثة أشهر أو أكثر، فأشير إلى اسم البلد، ومدة إقامتك، واللغة التي استخدمتها، ومدى استخدامك لتلك اللغة في تلك البلدان (أبدا، نادرا، في بعض الأحيان، بانتظام، في كثير من الأحيان، عادة، دائما).

البلد	مدة الإقامة	اللغة	مدى استخدام تلك اللغة

- برأيك، ما الذي يحفز الطلاب على تعلم اللغة الألمانية في هذا العمر؟ أشر إلى ثلاثة أسباب على الأقل.

.....

.....

.....

- ما هي الاستراتيجيات التي تستخدمها لتحفيز الطلاب على تعلم اللغة الألمانية بشكل أفضل؟

.....

.....

.....

- هل تعتقد إن كان الطالب جيدا باللغة الإنكليزية، سيتعلم اللغة الألمانية بشكل أفضل؟ إن كان جوابك نعم، لماذا؟

.....

.....

.....

- هل تأخذ بعين الاعتبار خبرات الطالب اللغوية السابقة عند تدريس اللغة الألمانية؟ إن كان جوابك نعم، كيف؟

.....

.....

.....

ملحوظة:

سيتم استخدام هذا المقابلة فقط لأغراض البحث العلمي.

Appendix 10: List of the Referees' Names

Prof. Ulrike Jessner-Schmid: Department of English at University of Innsbruck, Innsbruck, Austria

Prof. Berry Claus: Department of German studies and Linguistics at Humboldt-University of Berlin; Berlin, Germany

Appendix 11: Descriptive Statistics about the Sample of the Study

	<i>N</i>		<i>M</i>	<i>SD</i>	<i>Range</i>	<i>Mini</i>	<i>Maxi</i>
	157	0	8.38	3.2	19	0	19
Onset of exposure to E listening skill							
	157	0	9.39	3.5	20	0	20
Onset of exposure to E speaking skill							
	157	0	7.79	2.3	17	3	20
Onset of exposure to E reading skill							
	157	0	9.40	3.2	17	3	20
Onset of exposure to E writing skill							
	157	0	13.61	2.8	21	0	21
English average years of exposure							
	157	0	10.17	5.448	16	0	16
Onset of exposure to F listening skill							
	157	0	10.49	6.279	19	0	19
Onset of exposure to F speaking skill							
	157	0	10.24	5.664	19	0	19
Onset of exposure to F reading skill							
	157	0	10.11	5.726	18	0	18
Onset of exposure to writing skill							
	157	0	5.12	3.365	17	0	17
French average years of exposure							
	157	0	3.08	4.943	19	0	19
Onset age of using E at home							
	157	0	4.17	6.090	20	0	20
Onset age of using E with friends							
	157	0	4.85	4.543	15	0	15
Onset age of using E at school							

	157	0	1.10	4.424	24	0	24
Onset age of using E at work							
	157	0	5.83	7.388	25	0	25
Onset age of using E with technology							
	156	1	5.10	6.925	24	0	24
Onset age of using E to surf the net							
Average of using E per week to watch TV	157	0	2.24	3.619	30	0	30
Average duration of using E per week to listen to radio	157	0	.70	2.355	24	0	24
Average duration of using E per week to read	157	0	1.13	1.941	16	0	16
Average duration of using E per week to study	157	0	2.41	3.368	20	0	20
Average duration of using E per week at work	157	0	.68	1.598	9	0	9
Average duration of using E per week to send emails	157	0	.35	.903	8	0	8
